ABCs of the ED:

Depicting moments of meaning and joy in the Emergency Department

Attestation of authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Zora Situ
Bachelor of Design (Industrial Design),
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Abstract

Every day, people from all walks of life pass through the Emergency Department (ED). ED workers encounter every part of humanity — from births and broken limbs to bloody accidents and death — 24 hours a day, 7 days a week, 365 days a year. Healthcare design has prioritised patient needs for years, for a good reason. However, recent trends in declining health workforce wellbeing (heightened by understaffing, rising patient numbers, and under-resourcing) suggest that healthcare workers require a comparable level of attention.

This research explored how design and creative methods can invite ED workers to reflect on small moments of meaning and joy. Previous research used an appreciative inquiry process supported by creative workshops to identify and highlight the abundance of existing positive aspects of the ED. This project builds on that work by generating a set of artefacts that physically embody the moments that easily slip away, to serve as a reminder to staff during difficult times of what really matters. The artefacts developed have the potential to encourage the expansion and expression of ideas that are otherwise difficult to articulate.

This research is exploratory and a small part of a wider process to influence the wellbeing of healthcare workers using design. It will serve as a proof-of-concept for how small and non-intrusive design 'interventions' can be used to contribute to improving the wellbeing of the healthcare workforce.

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Positioning the Researcher

I began this research with little knowledge about the experiences of Emergency Department (ED) workers. My approach to the research was informed by my background in product design, previous experiences with healthcare design, and personal values.

From my undergraduate studies in Industrial Design, I have worked on several healthcare projects. My first design for healthcare project was in an undergraduate Integrated Studio paper. It allowed me to collaborate with fellow students from different design disciplines and Auckland Regional Dental Service to design an educational card game kit (Kete Menemene) for children. I have had the chance to explore a broader scope of design from these projects rather than just traditional industrial design. This included using a critical design approach to communicate the Eczema's physical sensations and experiences through visual artefacts.

In 2020, I was a summer student for the Institute for Innovation + Improvement (i3) of Waitematā DHB (WDHB) and Good Health Design. I worked with the patient experience team at WDHB to reimagine and propose a redesign to the main reception of Waitākere Hospital. The other project was to user test Kete Menemene with children and take on feedback to progress the game design. These projects gave me further insight into how design can benefit people's lives and how to navigate and champion design in a healthcare space.

I have always been captivated by observing the finer details. I have a drive and appetite for uncovering and understanding the meaning and stories behind architecture and products' form, colour, and material choices.

My interest in drawing out joyful and meaningful moments emerged when I began working on healthcare projects. The negativity in the healthcare arena appeared to dominate and dim the light on positive stories and outcomes. This research arose from Dr Johanne Egan's (a physician at WDHB ED and one of my supervisors) doctoral project titled 'Thrive: Accentuating the Positive in Emergency Department' (Egan, 2018). Her research takes on a positive lens by using the appreciative inquiry methodology to, together with ED staff, explore and notice moments of meaning and joy necessary for thriving in the workplace.

Although I began this research project with a lack of experience and knowledge of ED workers, my previous design in healthcare projects had set me up to understand how to navigate and collaborate within the complex healthcare environment.

Design Research during a Pandemic

As this research began, the whole of Aotearoa New Zealand felt the effects of the Covid-19 Delta strain and swiftly moved into Alert Level 4 lockdown once again. Tāmaki Makaurau remained at higher restriction levels than the rest of the country for just under six months. These restrictions were put in place to slow the spread, protect vulnerable populations, and not overwhelm hospital capacity. We have experienced the uncertainty of a pandemic since 2020, however, it is not something we have grown accustomed to. In Aotearoa, community-wide teddy bear scavenger hunts caught on in many neighbourhoods (Tokalau, 2020). This small and simple initiative was done to spread joy and keep children and everyone else entertained in an isolated and difficult environment.

Initial plans for this research involved a great deal of face-to-face interaction. The initial aim was to investigate how using various creative methods to express thoughts, feelings, and ideas can encourage reflection on the small joyful moments in the ED.

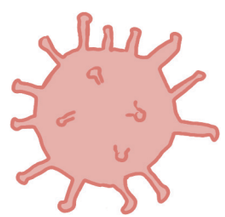
The expected outcome was a tangible toolkit, the 'flourish kit', that would enable ED workers to reflect on those small and joyful moments at work through making. They would make a tangible token from the flourish kit to take away and keep at their side to remind them of all the good that could fuel them during tough times. There were three phases planned for the research: 1) Interviews, 2) Co-design Kits, and 3) Feedback.

Interviews were going to be conducted in the ED office space at a time of the participant's choice. The co-design kits were to be placed in the ED for participants to take away to complete. Throughout this research, I was to situate myself and prototype in the ED office space to build a relationship and level of trust with the healthcare workers. During the feedback phase, prototyping was to be used to experiment with different meaningful engagement methods, forms, and scales. This was also an intended engagement method for user feedback. It would have been beneficial to prototype in the ED office space to experiment with live user input and using the making process as a conversation tool.

Complying with government rules and AUT ethics committee requirements meant conducting in-person research was no longer possible. For most of my research, hospitals did not allow visitors except on compassionate grounds, and even that was difficult. Even with switches to lower restriction levels, visiting was limited to one family member at a time. The research had to be revised.
The barriers were embraced, and the research adapted to the environment. Contextual review and secondary research became the core driver of the research. The mental and physical health effects that Covid-19 and its various variants had on the entire Aotearoa New Zealand and I were like a retrogressive rollercoaster ride.

Involving the ED with face-to-face research was not possible. The hospital system was overwhelmed and pressured by dropping staff numbers and rising patient numbers; they were at the centre of the pandemic. The research was modified to be contactless and reduce pressure on participants. Design should be user-friendly; hence design research should reflect that.

The experience of conducting research during a deadly global pandemic was personally daunting and dreary. There were many times I felt incompatible with conducting research on depicting moments of meaning and joy in the ED. The hospital's limits and challenges were amplified during those times. However, it was the very time and place that could benefit from small reminders of goodness in their work — big or small.



Setting the scene

The ED is a high-risk and fast-paced environment. No two days are the same. It is a mixed bag of adrenaline, compassion, urgency, healing, and despair — a formula for exhaustion and burnout.

Most healthcare professionals' journey to a medical career was sparked by an intrinsic impulse to heal and relieve suffering for others. These intrinsic motivators are their sense of calling, which *"must be protected and preserved for the benefit of both the physicians and their patients."* (Serwint & Stewart, 2019, p. 3). However, healthcare workers are chronically exposed to suffering. The irony of suffering being a motivator and something that takes a toll on them led Sulmasy (1997) to use the term *"wounded healer"* to describe healthcare workers.

Burnout is caused by a myriad of factors, such as lack of autonomy and control, little funding for resources and support, and patient load. Work-related burnout in the healthcare workforce has increased from 39.4% in 2015 to 43.3% in 2020 (Chambers, 2021). One out of two doctors now experiences burnout (Russell, 2021). The consequences of this among ED workers are significant, negatively impacting the individual and their colleagues, as well as the quality of care their patients receive (Chambers, 2021).

Burnout in the ED has become increasingly visible; this has been further amplified in recent years with the uncertainties that Covid-19 has brought along. The following contextual review discusses the importance of illuminating the joy and meaning in work for healthcare workers to *"thrive and not merely survive"* (Serwint & Stewart, 2019). The value of using an appreciative lens rather than a perspective of deficit is explored. This is followed by a discussion on the social and cultural benefits that the arts and artefacts have on a healthcare workforce and how design can contribute to wellbeing in this context.

Contextual Review

Joy and Meaning in Healthcare

The ED possesses the very components of meaningful and joyful work. Meaning is a sense of importance to one's work. The four elements of meaningful work are: 1) satisfying and fulfilling work; 2) work that contributes to the 'greater good'; 3) there are opportunities for personal growth; and 4) the work connects the worker to something larger than themselves (Messias et al., 2021). Meaningful work positively influences motivation, behaviour, engagement, job satisfaction, and empowerment. It is associated with reduced absenteeism and stress (Rosso et al., 2010).
A decreased sense of meaning at work is often associated with an increased risk of work-related burnout (Messias et al., 2021). According to Maslach and Leiter (2016), emotional exhaustion and depersonalisation are two components of burnout that meaningful work can help to mitigate. However, the absence of burnout alone is not enough; healthcare workers need to thrive, not just survive (Serwint & Stewart, 2019).

Joy is not just happiness. It is the feeling of fulfilment and warmth because of the meaningful work done (Sikka et al., 2015). It requires ongoing reflective practice; however, it is complex, as it is dictated by personal influences as well as the surrounding environment and culture (Serwint & Stewart, 2019). Joy in the healthcare practice context has been described as a state where practitioners are emotionally and behaviourally engaged with the care of their patients (Serwint & Stewart, 2019).

Increased joy at work also improves the patient experience and reduces staff burnout ('The IHI Framework for Improving Joy in Work', 2019). The 21st-century culture of medicine has become about self-sufficiency, competitiveness, perfectionism, overworking, and invulnerability. Joy in medical practice requires a dynamic shift in culture, to not just tolerate but to celebrate the highs and lows and the messiness of being fully human (Runyan, 2017). A workplace cannot reach its full potential without joy and meaning (Sikka et al., 2015).

Intrinsic Motivation in Healthcare

Intrinsic motivators arise from an individual's internal views of work and how they seek enjoyment in it. In contrast, extrinsic motivators allow individuals to engage in work to obtain an outcome or reward that is not in the work itself (Amabile, 1993). Research suggests that intrinsic motivators may be more successful than extrinsic motivators in enhancing employee happiness and engagement (Cho & Perry, 2012). According to Serwint and Steward (2019), our sense of calling is a significant intrinsic motivator and the motivating factor for entering the healthcare field. A healthcare career possesses all of the components of a sense of calling, such as having a defined purpose, can help other people, and the fulfilment of social good (Serwint & Stewart, 2019). A 2009 and 2011 survey of 2000 primary care physicians and specialists discovered

that physicians who had preserved their sense of calling conveyed higher life meaning and commitment to engaged patient care (Tak et al., 2017). The sense of calling in healthcare workers must be preserved. Reflection is key to nurturing and preserving the sense of calling — Serwint and Steward (2019) suggest three modes of reflection:

1) Group reflections
2) Journaling
3) Forever moments

Merriman (2016), an MD, coined the term *'forever moments'* to describe monumental and memorable moments, such as patient births and deaths. However, it is not limited to just obvious significant occurrences; small moments of shared humanity between patients and colleagues can be just as valuable.

Existing Frameworks

In 2017, the Institute of Healthcare Improvement (IHI) — a private, non-profit organisation that aims to improve health and healthcare worldwide by providing tools and resources such as conferences and training courses to large healthcare organisations and smaller-scale communities, developed 'The IHI Framework for Improving Joy in Work' (Perlo et al., 2017). This framework is comprised of nine components that form a healthcare system where the workforce is joyful and engaged:

1) Physical and psychological safety
2) Meaning and purpose
3) Choice and autonomy
4) Recognition and rewards
5) Participative management
6) Camaraderie and teamwork
7) Daily improvement
8) Wellness and resilience
9) Real-time measurement

The framework also includes four steps for leaders to restore joy in workers. Each step builds upon the last.

First, they recommend sincerely asking individual employees, "*What matters to you?*", "*What makes a good day for you?*", "*What makes you proud to work here?*", and "*When we are at our best, what does that look like?*". This is to discover what contributes to or detracts from the workers' joy.

The second step involves the leaders identifying the barriers to attaining joy, focusing on the day-to-day things that may wear out an employee, like *"pebbles in their shoe"* (Perlo et al., 2017, p. 11).

Third, teams from every organisational level need to unite and commit to tackling the barriers that prevent joy in work.

Lastly, they need to find the tools to test and measure if the actions are truly being implemented and are useful to increasing joy in work.

Recently, Archer (2022) reviewed the healthcare workers' burnout and moral injury from before Covid-19 to two years on. She put on a hopeful lens by seeking how gratitude and hope can be increased in healthcare workers through evidence-based interventions. She examined several interventions and frameworks and found that increasing joy in a healthcare workplace begins with a commitment from leaders. She concluded that it is not the people who are broken and require 'fixing' but the system and environment that ultimately needs to change:

> **"...there will be other crises after the COVID-19 pandemic subsides, and the best time to craft a resilient organization is before a crisis. The second best time is now."** (p. 26)

The majority of frameworks and interventions that Archer reviewed were problem-focused. There was a lack of representation of positive psychology interventions despite research showing effectiveness in improving wellbeing using this approach (Bolier et al., 2013).

Adopting a Positive Lens

There are many different meanings to the idea of wellbeing. Aristotle proposed that the ultimate human goal was to flourish (eudaimonia) to lead a meaningful life (Sirgy, 2012). His understanding of wellbeing was that it is a lifelong, communal, and creative process (Steen, 2016).

Positive psychology is rooted in the idea that wellbeing is more than the absence of illness. The World Health Organisation (2018) defines health as a *"state of physical, mental, and social wellbeing, not merely the absence of disease and infirmity"*.

Psychology that only focuses on eliminating the negative will only bring individuals to a neutral; they will not thrive (Adams & Myles, 2020). Others may define positive psychology as *"the study of what makes life worth living"* (Peterson, 2008). Seligman (2000) likens psychology to a gardener who is fixated on solely pulling out weeds. A skilled gardener, like positive psychology, understands that for the garden to thrive, not just survive, they need to do more. The garden requires water, sun, and nurturing to grow and transform. Seligman and Csikszentmihalyi (2000) explain that:

"Psychology is not just the study of pathology, weakness, and damage; it is also the study of strength and virtue. Treatment is not just fixing what is broken; it is nurturing what is best. Psychology is not just a branch of medicine concerned with illness or health; it is much larger. It is about work, education, insight, love, growth, and play." (p. 7)

Thrive: Accentuating the Positive in the Emergency Department

In her doctoral project ('Thrive'), Egan uses the appreciative inquiry methodology to take on a positive lens (Egan, 2018). She started with the premise that, over time, the motivations and passion that initially compelled healthcare workers to seek their profession may have dampened. Together with ED workers at Waitematā District Health Board, Egan 'discovered', 'dreamed', 'designed', and 'destined' (Cooperrider & Whitney, 2005) through playful and creative workshops to notice and have a dialogue about moments of meaning and joy which are necessary for thriving in the workplace. This re-ignited the flame of ED workers' sense of calling.

The focus shifted from the stress and negative work experiences to an appreciative perspective; accentuating the countless, easily overshadowed acts of care, wisdom, and compassion. Egan began her curious journey with the 'discovery' phase, with one-on-one interviews to gather stories to begin developing ideas. She then held workshops that revealed more stories rooted in what enabled the staff to thrive. The notions of thriving revealed in the stories began to take form and come to life with ED workers interacting with arts and craft materials to support storytelling in the 'dream' phase.

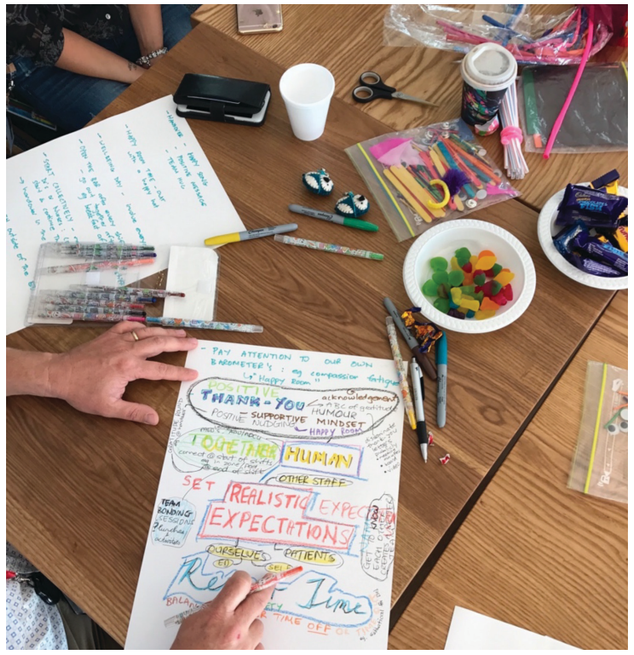
The data collected from the interviews and workshops suggested that the notions of thriving can be articulated through eight categories, or *'notions of thriving'*:

1) Appreciation and gratitude
2) Self-care
3) Fun
4) Knowledge and wisdom
5) Achievement
6) Shared humanity
7) Connection
8) Making a difference

These eight notions of thriving are not independent of each other; the stories reveal that they are all interconnected and overlap.

Figure 1

Egan, (2018). Destiny Workshop



In the phases that followed ('design' and 'destiny'), the ED staff turned the insights revealed in the stories into practical, actionable tasks. Egan facilitated more workshops where ED workers, once again, collaborated using arts and crafts to develop a list of activities and tasks to help each other thrive in their workplace.

The list included items such as happy and time-out space, options of healthy food, and celebration and recognition of successes with free parking. This list is not absolute; instead, Egan hoped that the list would grow and evolves as a part of the department to thrive.

Participants also developed and designed tangible values for thriving and how they can become measurable and accounted for in these workshops, called *'pillars of wellbeing'*. Egan used the *'pillars of wellbeing'* design to help develop a framework to account for aspects of their job that enable ED workers to thrive that are not easily measured.

The participants developed a wellbeing rocket as a visual representation of this framework. At the rocket's base are three thrusters: department, colleagues, and self. The area above the three thrusters represents the patients, and the rocket nose symbolises being propelled towards a sustainable future (see figure 2).

Egan and her participants also explored sustainability in fostering wellbeing in the department during the workshops. Recommendations that arose were to consider wellbeing in all meetings, to fundraise to support some of the activities, and organise a wellbeing group to implement and review ideas on promoting wellbeing, for example.

Figure 2

Egan, (2018). The Rocket of Wellbeing

Since Egan completed her research project, the tools, processes, and knowledge developed and gained on thriving continue to be applied in the ED setting. There was an opportunity to expand on this research and explore how design can be used to give form to the notions of joy and meaning in a stressful workplace and serve as a reminder to staff at difficult times of what really matters.

Art for Healthcare

Art and design usually strike up an association with venues like theatres, galleries, and museums, where they exhibit well-established artists. But art and design can be diverse. The creators and venues can be anyone and anywhere; from parks to hospital beds and the young to the elderly.

Dissanayake (1988) hypothesised that the arts came about to make the ordinary special, which was an essential part of the social and cultural human evolution. Humans have created, observed, and shared different sound combinations and beats to make music. We have made markings on cave walls and trees to tell stories and strung words together to express thoughts and emotions poetically.

The integration of arts in medicine has been proven to enrich emotional, social, psychological, and cultural values for an individual and as a group (Edmonds & Hammond, 2012). Camic (2008) argues that there is an opportunity for a marriage of art and healthcare due to healthcare workers' growing sense of alienation. A union of the two can benefit an individual's sense of belonging in the workplace (Camic, 2008). In a review of medical literature, the relationship between the arts and healthcare stated the importance of this relationship, as it would increase job satisfaction and cultivate more empathy among healthcare workers (Staricoff, 2004).

Healthcare workers have welcomed the idea of art into their practice. There has been interest from staff in exploring artistic expression in healthcare — as well as encouragement to use creative imagination to help sustain caring practices (Coats, 2004). Opening Doors, for example, is a course offered at Tate Liverpool Gallery to introduce social care and healthcare professionals to modern and contemporary art (Edmonds & Hammond, 2012). This programme was developed to inspire individuals to work and think differently. Engaging with the arts developed observation, analysis, and reflective skills. Confidence in communication and expressing opinions was also boosted (Edmonds & Hammond, 2012).

After the first lockdown in 2020, members of Aotearoa New Zealand and Australian EDs banded together to compile videos of themselves singing to thank the public for staying home and express love to those impacted by Covid-19 (Clark, 2022). Clark (2022) expressed how music *"truly brought joy and connection to our team"*.

Figure 3

ED Musos, (2020). ED Musos virtually perform Te Aroha

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Figure 4

ED Musos, (2020). ED Musos virtually perform Stay at Home State of Mind

The author has removed this image for copyright reasons.

Design for Health and Wellbeing

The philosophical debate around whether medicine is a science or an art or both is ongoing. At different points in human history and across cultures, medicine and healthcare have been considered a form of art with great cultural and spiritual significance (Panda, 2006).

Medicine originated from our primal instinct to sympathise with one another (Osler, 1998), to help and heal those who are hurt, in need, or sick. Human to human. Early western medicine applied spiritual care to heal people in places of worship (Riva & Cesana, 2013). The rapid evolution and advancement of modern medicine and healthcare as we know it today are owed to the birth of hospitals. As medicine became more scientific, research was done on poor patients in the institutions to reveal more about diseases and the human body (Ku & Lupton, 2020). Modern medicine and healthcare have done wonders, like increasing our life expectancy (Zampieri, 2017), and helping us recover from illness and injury (Ku & Lupton, 2020); yet, the focus on curing illness has led to the neglect of viewing a patient and staff as individuals — as human (Tsekleves & Cooper, 2017).

Now, the healthcare system is associated with being busy, slow, and rigid. They are lacking time and resources, making change difficult in this environment. This has presented a difficult challenge when applying different thinking methods to make a meaningful shift (Ku & Lupton, 2020). However, perspectives in healthcare have recently slowly been shifting to a more human-centred approach (Ku & Lupton, 2020).

Design holds the ability to challenge this rigid healthcare system for better outcomes. This is due to the fact that many designers are not educated in healthcare, therefore offering a fresh outlook, innovation, and experimentation to healthcare practices that have remained unaltered for years (Tsekleves & Cooper, 2017). Healthcare is rooted in evidence-based and quantitative practices and measures (Jones & Halamka, 2012), whereas design and design thinking bring qualitative human experience insights to the table (Ku & Lupton, 2020).

“Change requires the space and the courage to test new ideas” (Ku & Lupton, 2020, p. 18)

Rather than existing with and working parallel to each other (Chamberlain & Craig, 2017), a marriage between healthcare and design can result in valuable and effective transformations (Ku & Lupton, 2020).

Design for health has been recognised as an emerging discipline advocating for collaboration between designers, healthcare workers, and patients. The use of participatory methods to engage and work with user groups rather than traditional passive, feedback-seeking methods is essential within this new field (Wolstenholme et al., 2015). For healthcare organisations to strengthen workforce wellbeing, the focus should be on designing solutions with front-line staff (Wilson, 2021). Working creatively with the people at the coalface of healthcare has the potential to reveal different perspectives and ideas from the ones traditionally pursued by decision-makers and is more likely to create solutions tailored to their needs and wants (Sanders & Stappers, 2008). Design can then give physical form to fragmented ideas and information (Swann, 2002).

A good example of how design can be used in healthcare to represent not only the physical aspects of a disease, but also draw attention to the subjective human experience associated with it is a therapeutic product called Homeostasis Sanatoris (see figure 5) (Martínez & De Francisco, 2019). The product was inspired by people usually being able to recognise physical changes associated with an illness (such as symptoms, discomfort, and pain), but the emotional aspects being harder to identify and articulate (Martínez & De Francisco, 2020). Homeostasis Sanatoris is a 'balance generator object' using analogies designed to represent disease and to stimulate patient reflection (Martínez & De Francisco, 2019).

The product allows patients to visualise their journey with the disease and their emotions through various elements in the product. The use of distinct materials, colours, and objects encourages interpretations; each experience is unique, so it may be understood in various ways. Martínez and De Francisco (2019) found that the product was impactful for externalising emotions, talking through experiences, and allowing fluid dialogue between the patient and their clinician.

Figure 5

Martínez & De Francisco, (2019). Homeostasis Santoris

Figure 6

Martínez & De Francisco, (2019). Practitioner exploring Homeostasis Santoris

Design for wellbeing projects go beyond 'traditional' design projects which are problem-focused processes. In contrast, design for wellbeing centres opportunities and enables people to thrive (Desmet & Pohlmeyer, 2013). Steen (2016) divides design for wellbeing into two kinds: design for hedonic wellbeing and design for eudaimonic wellbeing. Design for hedonic wellbeing promotes faster or instant pleasures. It is more closely aligned with a 'traditional' design approach; such as improving the usability of a shower within a hospital ward, for example. Design for eudaimonic wellbeing is holistic, future goals-oriented, and community-focused (Steen, 2016). This approach aligns with the positive psychology perspective to enable people to thrive and not just survive. It is the approach that forms the basis for this research project.

Design for Healthcare Workers

Healthcare design has prioritised patient needs for years, for a good reason. However, recent trends in the declining health workforce wellbeing exacerbated by Covid-19 indicate that healthcare workers require a similar focus (Huey, 2022). Most recommendations around design for healthcare workers focus on the physical work environment — such as interior improvements on lighting, furniture, and layout (Hendrickson, 2020) and not on the more subjective aspects of work.

WRaP EM is an Australian group of clinicians and medical educators who want to accentuate the "Wellness, Resilience, and Performance" of emergency medicine — qualities that are often overlooked and not considered an integral part of the practice (WRaP EM, 2018). They have developed a series of 'how-to guides' to share methods to assist and develop wellbeing for ED workers. The guides include instructions on creating calming spaces, setting up wellness groups, finding a mentor etc. One guide introduced the idea of the 'Staff Resuscitation Trolley'. Inspired by healthcare workers' neglect of food and nutrition during their shifts (Lemaire et al., 2011), the trolley concept was to boost morale by offering ED workers healthy snacks (see figure 7).

Interestingly, this staff wellbeing project originated from the healthcare workers themselves, with no input from a designer. This is in line with Egan's findings that show that staff hold the key to the solutions that would benefit them. However, there is rarely time available to healthcare workers to explore these issues systemically outside of their time of care. Therefore, a designer's contribution in this context could be the help healthcare workers need to express their ideas through creative methods and then give a physical form to these ideas so that they can be shared and built on collectively.

Figure 7

WRaP EM, (2018). Queen Elizabeth II Hospital wellness trolley

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Conclusion

Although working in the ED comes with sorrow, stress, and struggles, there are many meaningful underlying components to the job. Meaningful moments that enable ED workers to continue to thrive are moments of being human and are often difficult to articulate or even measure; to have something tangible to remind ED workers to look for ‘nuggets of gold’ in such a fast-paced and high-risk environment would be valuable. This research recognises that design is not in a position to create an immediate and drastic change to a widespread and systemic problem. However, what design does well is giving physical form to ideas (Swann, 2002). This research is exploratory and a small part of a wider process to improve the wellbeing of healthcare workers. It will serve as a proof-of-concept for how small and non-intrusive design ‘interventions’ can be used to contribute to impacting the wellbeing of the healthcare workforce.

The Research Question and Aims

This research explored the following question:

How might creative methods and designing artefacts to physically depict Emergency Department workers' moments of meaning and joy invite reflection, to bring attention to and encourage savouring of these existing moments?

The specific aims of this research were to:

- To explore how ED workers may represent moments of meaning and joy in work using creative methods.

- To explore how to represent ideas, memories, and feelings associated with meaning and joy in the ED as a workplace through physical artefacts.

Methodology

This section outlines the overarching research methodologies I used to address the aims of this research. I used a human-centred design approach and a participatory design framework. The appreciative inquiry framework is at the heart of this research following on from Egan's research (Egan, 2018).

- Human-centred Design
- Participatory Design Framework
- Appreciative Inquiry and the Design Process
- Ethical Considerations
- Timeline

Human-centred Design

Human-centred design (HCD) is an approach that prioritises the relationship between people, products and systems we engage with rather than artistic ideas and business (Boradkar, 2010). HCD involves observation, conversation, research, and collaboration with users to understand and develop solutions that meet their needs. Users' active participation is vital as they are experts in their own life (Ku & Lupton, 2020). The result of this process is a product that is adaptable, flexible for interpretation, usable, and designed with a purpose (Moggridge, 2014).

Design is not usually incorporated into the caring and scientific perspective from which healthcare workers see the world. Designers use empathy to design and improve a product or service; this level of care only extends to users and patients (Jones & Halamka, 2012). However, healthcare workers take care of patients as an individual. As a designer, it is imperative to think and reflect carefully on how to utilise an HCD approach for best practice.

Taking an HCD approach indicates that I will be expected to take accountability for decisions and actions within my design process and outcomes (Krippendorff, 2004). As a designer navigating design research in a healthcare context, it was an essential and personal responsibility to strive for inclusion and collaboration with participants. Design in healthcare is complex, where change is difficult, and there is no room for mistakes.

Design cannot create immediate and drastic solutions to widespread and systemic problems. However, change can be made gradually by taking on an HCD approach (Ku & Lupton, 2020). The HCD approach has also been singled out by the National Academy of Medicine (NAM) as necessary at multiple levels of the complex system clinicians operate within to reduce clinician burnout and build better professional wellbeing systems (National Academies of Sciences, Engineering, and Medicine, 2019).

> ***"[HCD] is a way of accompanying health workers and making sense of the complex challenge of health systems..."***
> (Holeman & Kane, 2020, p. 500)

With no experience and personal connection to working in the ED, I acknowledged that I would not understand and relate to the entire journey and experiences of ED workers. The advantage of using an HCD approach is the generous amount of empathy it requires the designer to practice (Krippendorff, 2004). Empathy was employed consistently throughout this research, from studying stories and interviews of ED workers to analysing the artwork of a participant and hearing their stories. This allowed me to form and develop my ideas from ED workers' shared experiences.

> ***"Humans do not respond to the physical qualities of things but to what they mean to them"***
> (Krippendorff, 2004, p. 48)

“Artifacts are languaged into being; they reside in human relationships, in communities, not in the physical world”

(Krippendorff, 2004, p. 50)

Participatory Design Framework

Originating in 1970s Scandinavia, participatory design is a human-centred approach that involves engaging with users and stakeholders to understand the problem, garner insight, and develop solutions (Martin & Hanington, 2017). Applying participatory methods at the beginning of the design process has long-term positive impacts (Sanders & Stappers, 2008). Using a participatory design framework acknowledges that users are the experts of their experiences. It recognises the participants’ creative insight and allows their expertise to guide the design process and outcome (Martin & Hanington, 2017). It has been suggested that having participants involved in the decision-making at all the key moments in the design process will significantly impact design and even the world (Sanders & Stappers, 2008).

Participatory approaches are now being increasingly used in healthcare to identify end-user needs and co-design solutions (Sanders & Stappers, 2008). In the context of staff wellbeing specifically, for example, in Australia, healthcare staff working in aged care co-designed a wellbeing programme for staff with clinicians and researchers. Working together in workshops resulted in a ‘toolkit’ of staff’s curated self-care and mindfulness strategies and positive feedback about the process (Wilson et al., 2021)

A good example of a participatory approach to benefit both healthcare staff and patients in New Zealand is a collaboration between ED workers, pharmacists, and consumers at Taranaki District Health Board (TDHB), as part of NZ Health Quality & Safety Commission’s Partners in Care (PIC) programme, to explore the benefits of providing pharmaceutical services in the ED (HQSC, 2017). The engagement methods used were online surveys, interviews, attending a handover, and visiting the ED to build a relationship between pharmacy and ED. Although this collaborative method was a new concept for the TDHB and the staff, it was well-received and showed the value of working together on a journey with a common purpose. Those involved found that, had they not collaborated, they would not have built the same relationships, gained understanding and knowledge of each other’s work, or found the various ways a pharmacist’s abilities can contribute to the ED.

A participatory approach was employed in this research through engaging ED staff (as ‘end-users’ to benefit from the design research) in creatively exploring and sharing their ideas around moments of joy and meaning in their workplace, so that these insights could then inform the design of a physical representation of joy and meaning in ED.

Appreciative Inquiry and the Design Process

As this research is a continuation of Egan's work from a design perspective, the essence and the process of appreciative inquiry (AI) that she conducted was not carried out again, but remains at the heart of this research.

Cooperrider developed AI in 1986 to induce organisational change by shifting the focus from the problems to noticing and nurturing the things that work well to induce change (Trajkovski et al., 2013). AI explores the best and strengths in people and the organisations that they exist in (Cooperrider & Mcquaid, 2012). As a participatory approach, AI holds the same egalitarian values where the inputs and voices of individuals involved are equally important (Trajkovski et al., 2013).

The process of AI follows a 4-D cycle. Starting with 'Discovering', the organisation becomes involved in identifying best practices and their strengths; this could be done through interviews and deep-dive conversations. 'Dream', involves people envisioning the future based on their discovered potential. They are invited to ask *"What is the world calling us to become?"* and share these dreams. 'Design' is the phase where people create possible concepts and changes towards an ideal organisation. Lastly, 'Destiny' develops ways to sustain and grow the positive change; these ideas and actions are inspired by the discovery, dream, and design phases.

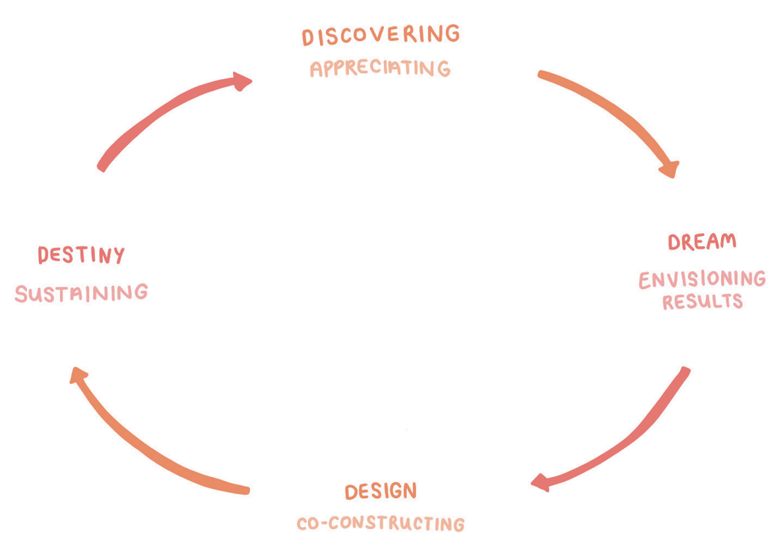
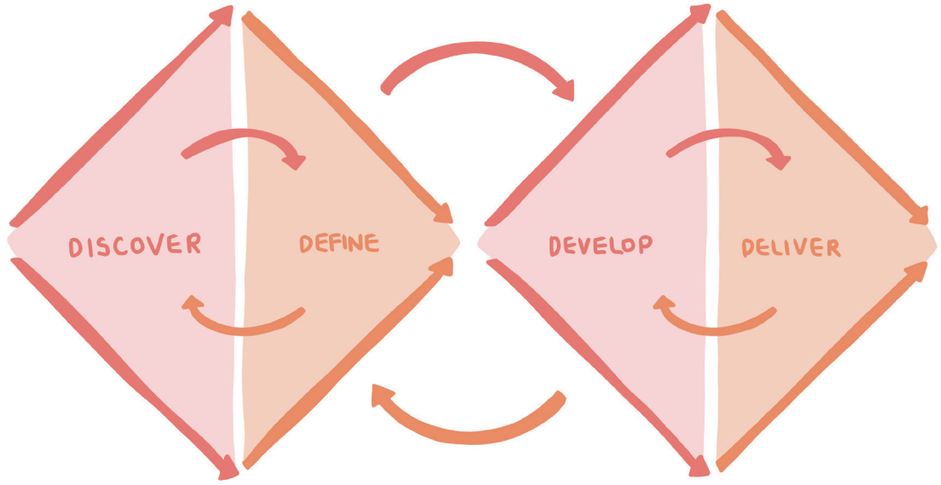


Figure 8

Cooperrider, Whitney, Stavros & Fry, (2008). Appreciative Inquiry 4-D Cycle

Figure 9

Drew, (2019). Double Diamond design model



The design process has been the subject of study and investigation for decades, although no 'holy grail' appears to have been found. In recent years, increased emphasis has been placed on the notion that there is no one-size-fits-all design process model that can be deemed 'the standard'; but instead, process models must be continually altered and adapted to the specific qualities of each brief or project (Best, 2015). Among the most commonly used models is the 'Double Diamond' (Design Council, 2007) process model that uses existing concepts of design processes, such as the divergence-convergence structure (Banathy, 1996), to denote how the thinking shifts between considering many needs and potential solutions, to converging to a small number of challenges and solutions to focus on.

In alignment with the AI 4-D cycle, the Double Diamond also has four distinct phases (see figure 9). The 'Discover' phase requires a deep dive into the problem at hand to gain understanding. The diamond then converges in the 'Define' phase where data is synthesised from the previous phase to form a problem definition. The 'Develop' phase involves prototyping, testing, and iterating (based on feedback) multiple solutions to the problem. In the 'Deliver' phase, finishing touches are made, and the final product is ready to be launched.

The Double Diamond that guided the design process in this research is comparable, but not identical, to the AI 4-D cycle that Egan conducted in its cyclic journey.

Ethical Considerations

Due to Covid-19 restrictions, conducting interviews and feedback sessions while working in the ED office space as initially planned was no longer possible and the ethics application for my research required an amendment. To quickly adapt to the changes, I transformed my research approach to mainly rely on rich secondary research (Egan, 2018) and less intrusive, contactless methods to receive participant input.

The latter involved participant(s) sharing their stories and feelings via simple, creative research kits mailed to their chosen address. This allowed the participant(s) to engage with the research in their own time and outside of their now busier-than-usual work environment.

Formal ethical approval was obtained by AUT Ethics committee (AUTEC) on 20 October 2021 (number 21/287) for the use of research kits and to seek feedback from ED workers.

This research was granted Waitematā DHB Locality Authorisation on 12 November 2021.

Timeline

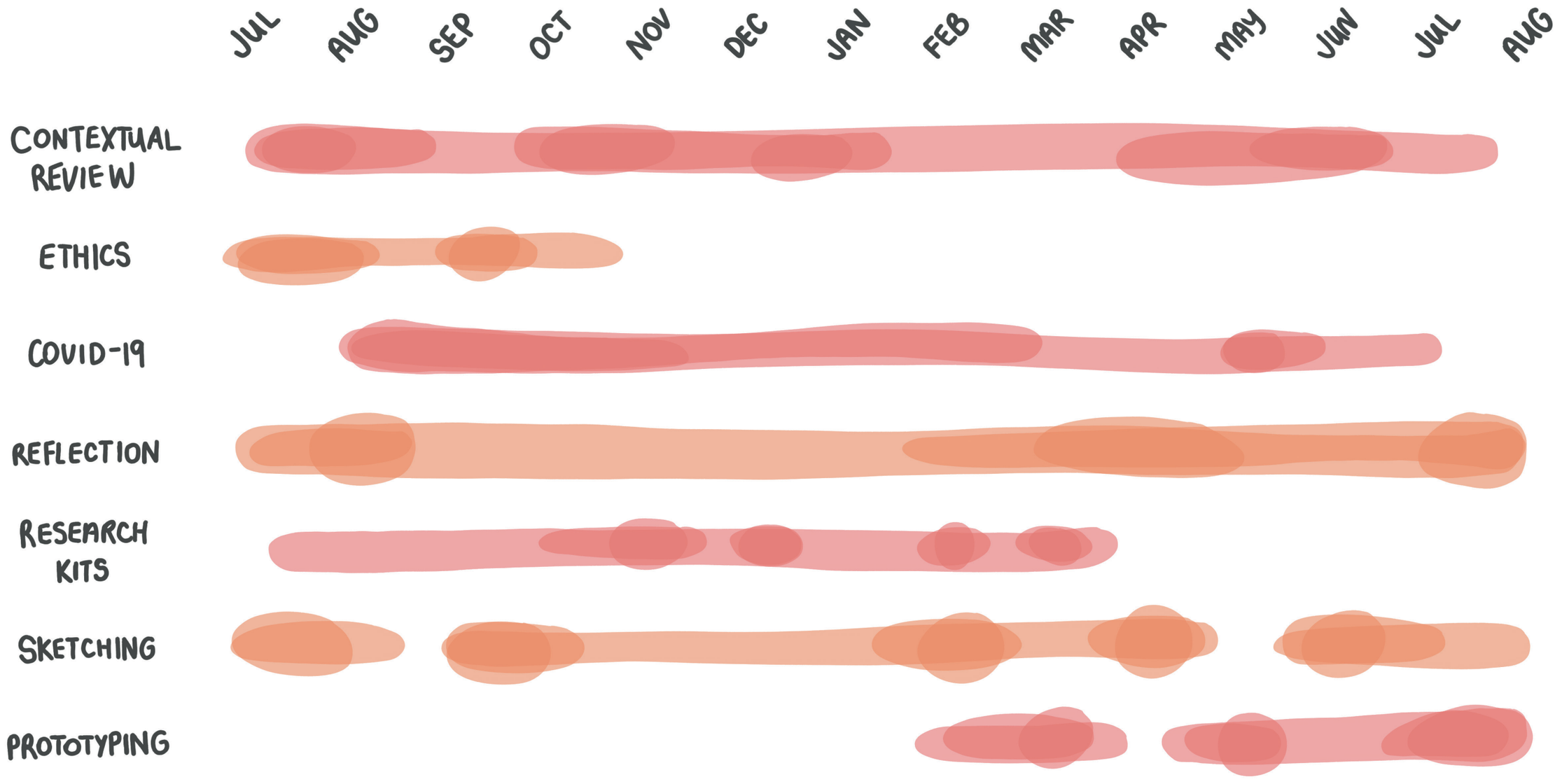
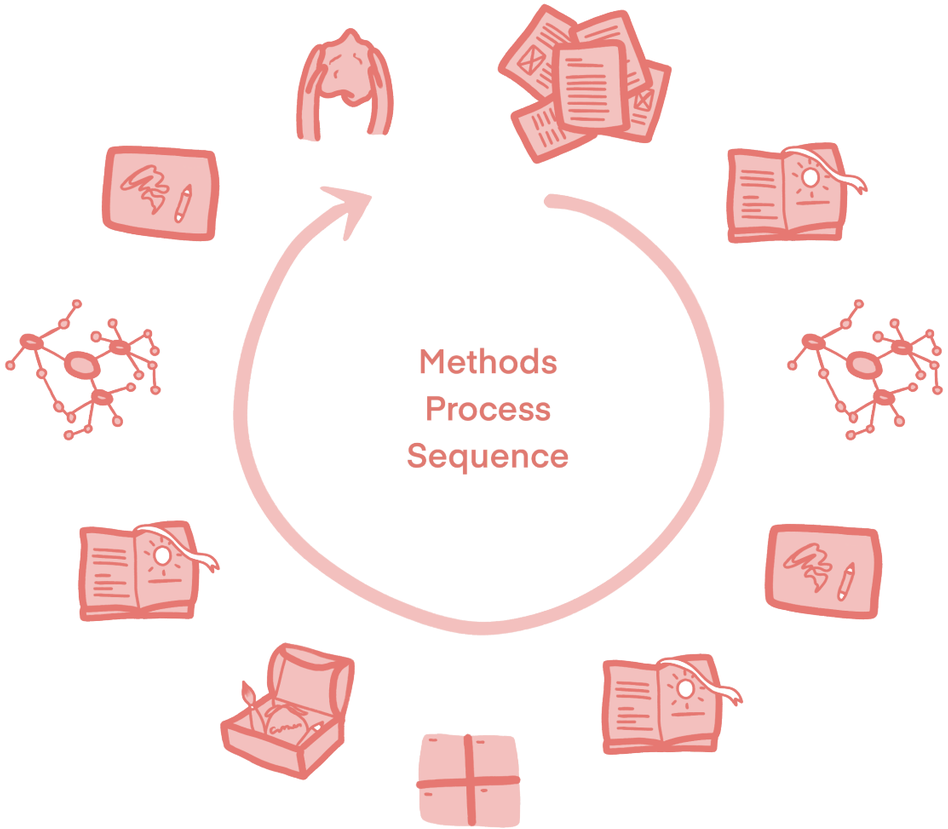


Figure 10

Research Project Timeline

Methods

Multiple methods were used for topic exploration and data collection in this research.
In this section, they are grouped into discover and design methods.



Discover Methods

Contextual Review

Reflective Journal

Research Kits

Contextual Review

A contextual review helps to define and position the research by synthesising, interpreting, and evaluating previous literature and projects; this provides background information that justifies the research question and methods (Martin & Hanington, 2017). By reviewing and extracting salient information through a breadth of literature, it better positions the researcher and they can establish the research as an addition to existing knowledge in the field (Collins, 2010).

My contextual review began through Google Scholar and various library databases. The following key search terms were used to identify relevant literature: 'burnout in the Emergency Department', 'joy' and 'meaning in healthcare/work', 'art and design in healthcare', and 'positive psychology'. As a designer with no affiliation to the ED, it was essential to gather insight into the general environment of the ED and the personal stories of ED workers. It also supported and helped my understanding of art and design in a healthcare setting, such as its use to benefit staff.

Egan's doctoral project was an integral part of the secondary research. To inform my methodology and prototyping, I reviewed her methods and summarised and collated her findings. Reviewing her transcriptions of stories from ED workers she had interviewed allowed me to garner a more authentic understanding of the clinical environment and intended user group for my research.

Figure 11

Pages from my gratitude journal

Reflective Journal

Reflective journals allow us to examine our understanding of new information and delve into our emotions to inspect and navigate our assumptions about our research topic and users (Bassot, 2020). The benefit of a reflective journal is that it captures relevant daily events and thoughts we would otherwise forget to review in the future.

I kept a physical journal for reflection throughout this master's research to capture ideas, concerns, challenges I had faced, how I navigated them, and record the feedback I had received. Writing and drawing in a reflective journal allowed my thoughts to flow freely, be captured organically, and be 'fleshed out'. In line with the research theme, I also kept a daily gratitude journal to reflect on the small and simple moments of everyday life. It includes sketches, letters, photographs, prints etc. This helped me explore how reflection and reminders can take on different forms.

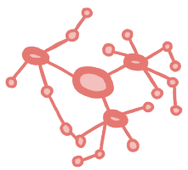
Research Kits

Research kits can vary in form and name. Cultural probe kits inspired the research kit in this research. Cultural probes were developed in the late 1990s by a group of European researchers and designers (Mattelmäki, 2006) and have since gained popularity as a method for practical research and design. This open and ambiguous method encourages new ideas and dialogue (Mattelmäki, 2006). The tools and provocations commonly include postcards, journals, stickers, imagery, and text. The provocations and exercises are intended to be completed over time to allow self-understanding and communication (Martin & Hanington, 2017).

The research kit used in this study was designed for simplicity and ease of use. It contained a welcome letter, an inspiration poster to show art and printmaking methods, a bag of arts and craft materials, two paper bags with prompts printed on them, and two blank canvases to respond to prompts on. The prompts given were '*Why do you do what you do?*' and '*Think of a moment you cherish — Can you describe it?*'. These prompts drew out participants' moments of meaning and joy. Participants had the choice to explain their artworks further by writing about them or explaining them verbally through voice recording or a video call with me.

Design Methods

Empathy Map



Mind mapping

Sketching

Prototyping

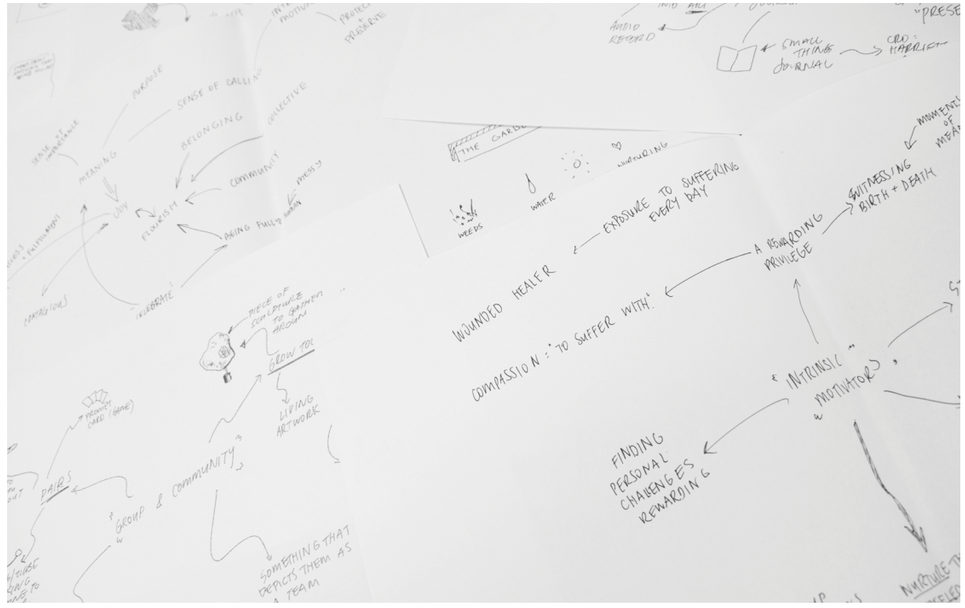
Empathy Map

An empathy map is a visualisation to help understand user needs by capturing their attitudes and behaviour (Ferreira et al., 2015). This is particularly useful for focusing on a specific context. Sections to an empathy map vary, but generally, four sections are covered: 1) Think, 2) Do, 3) Feel, and 4) Say (Tomisch & Borthwick, 2020).

Empathy mapping was first used in this research to imagine the ideal experience for a participant using the research kit. It was later used in this research to help generate a brief of the ideal experience of an ED worker interacting with the final design outcome.

Figure 12

Example of mind maps



Mind mapping

Mind mapping was developed in the 1970s as a form of structured notetaking. This method helps with recollection by visually sorting information and ideas using spatial relations (Tomisch & Borthwick, 2020).

This research used mind mapping to organise and connect ideas and themes from literature about joy and meaning. It was used at each stage of idea generation for artefacts and prototypes. A mind mapping technique called 'Lotus Blossom' (Michalko, 2006) was also used to generate concept ideas in a systematic fashion. To use this technique, the problem or opportunity is placed at the map's centre; from the centre, eight different themes are generated, and new ideas are created. This method broadens one's perspective on the topic while encouraging ideas to evolve (Michalko, 2006). In this research, I used the Lotus Blossom to create design concepts from the eight notions of thriving (Egan, 2018).

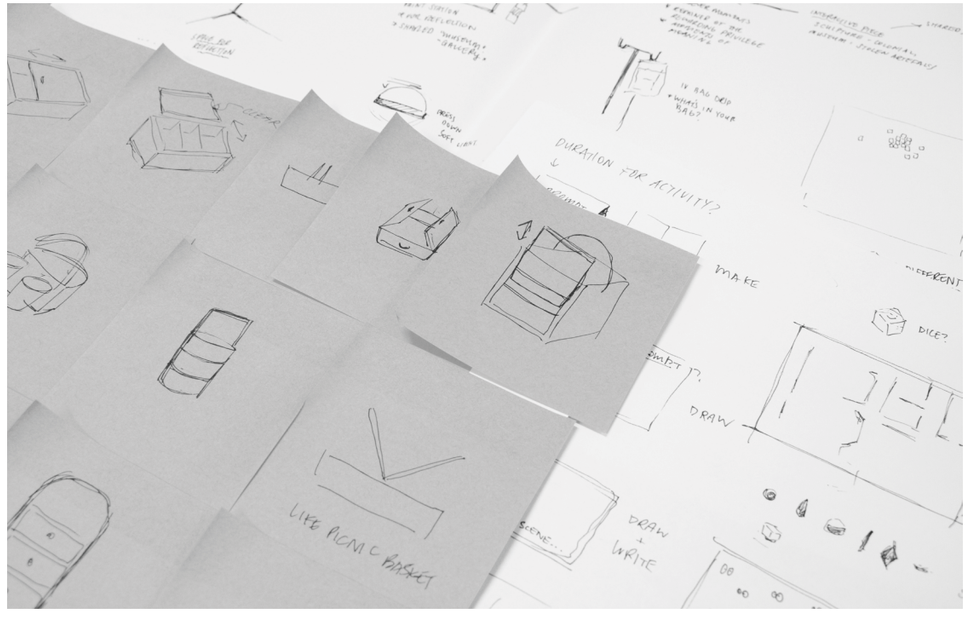
Sketching

Sketching is a tool to express an idea quickly through visual representation — this helps to present the physical aspects of an idea and generate iterations (Tomisch & Borthwick, 2020). Sketching was done consistently throughout this project; it helped communicate with clarity the imagined concepts to others.

Sketches facilitated discussions, feedback, and understanding from supervision meetings and critique sessions. This was important for determining and evaluating what aspects of the design research process were successful and to develop from. Sketching was a vital aspect before making physical prototypes because it served as a blueprint. I used sketching to develop and refine the physical form of my artefacts. Rough thumbnail sketches were often used to produce and iterate multiple artefacts. I used pen and paper as well as the Procreate application to sketch.

Figure 13

Example of sketches



Prototyping

Prototyping is to think with our hands. As an iterative making process, it allows us to be more comfortable with exploring ideas freely, failing often, and preventing attachment to one solution (Ku & Lupton, 2020).

In this project, prototyping was the next step in bringing sketched ideas into 3D form. These ideas were created and directed from the contextual review and participant's research kits. The prototypes acted as physical manifestations of stories of joy and meaning in the emergency department. A tangible model helped communicate scale, aesthetics, function, materials, and interactions during discussions and feedback from peers and supervisors. Having a tangible object allowed me to explore an idea further through iterations. Each iteration was informed by the previous one.

During this research, materials used to prototype were cardboard, paper, plastic, and clay. Through ideating and iterating, the nature of this project led to greater ceramics use. Hand building, as opposed to moulds, was the method of choice for this project as there was great significance placed on making a one-of-a-kind object. Handmade objects reflect the time and effort spent building and crafting them, from wet clay to bisque and glaze ware.

Documentation of Research

- Preliminary Explorations
- Secondary Research
- Primary Data Collection
- Designing the Outcome
- Artefact Developments
- Design Output

Preliminary Explorations

Visit to the Emergency Department

In March 2021, I met with Dr Johanne Egan to take a tour around the ED. Seeing the location that provided the context for this research was necessary and valuable in setting up a foundational understanding of this context.

During this visit, I learned the following:

- Outcomes from Egan's previous and ongoing AI work continue to be exhibited in the ED office space. This assured me that locating my research there rather than in the main clinical ED area would be most appropriate.

- ED workers were always on the move — therefore, the data collection process and the final design outcome needed to be quick and small.

During this time, many news articles were released about the burnout and under-resourced nature of healthcare in general and especially the ED. This made me think it might be problematic and tone-deaf to conduct research in this setting and at this time. However, I was assured through consultation with Egan that this research was appropriate and needed. This dilemma stuck with me throughout the research. Yet, it served as a reminder of the importance of making the existing good in the ED visible.

Critical Artefacts

As a part of the coursework required before commencing the thesis year, I took the 'Design for Health and Wellbeing' paper to educate, reflect, and situate myself as a designer proposing to work in the healthcare arena. One of our deliverables was to design critical artefacts to make visible the 'invisible' or taken-for-granted aspects of our thinking and understanding regarding our health and wellbeing focus.

I designed a series called the 'Healing Kit' that represented my position as a designer working on a healthcare project and a possible research direction. It also my depicted hopes of how healthcare can progress and flourish.

Figure 14

Development of the Healing Kit artefacts

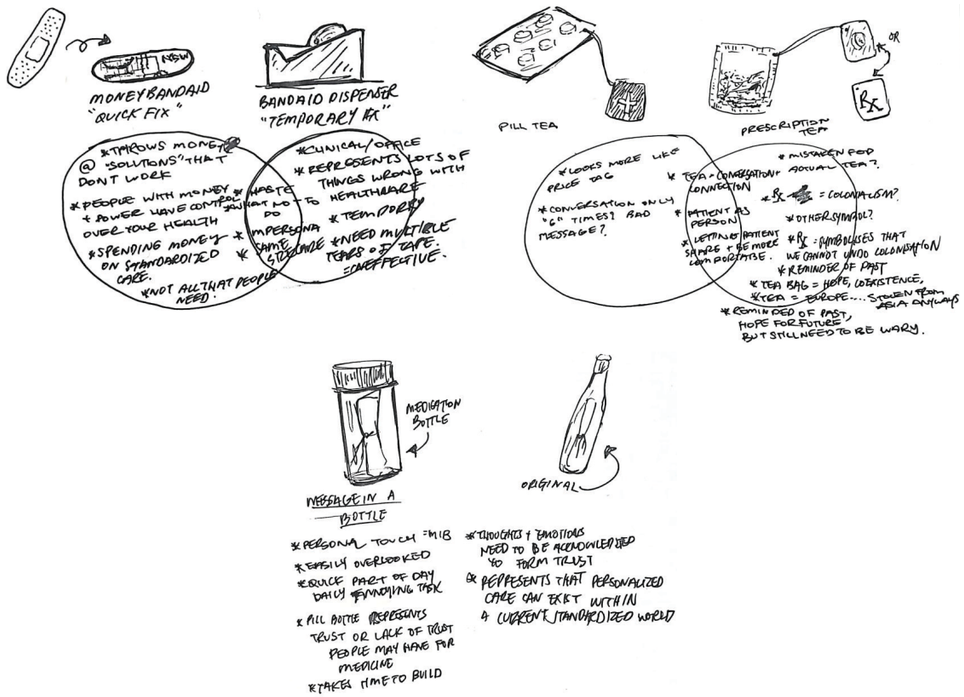


Figure 15

Closed Healing Kit

Figure 16

Healing Kit Artefacts

In the ‘Healing Kit’ there are three phases, alluding to the past, the present, and the future:

The first phase is the Bandage — *a reminder of the ‘past’*.

• The currency pattern on the bandage represents the systemic issues that determine our health issues and outcomes.

• It portrayed the standardised, underfunded, impersonal, and rushed state of healthcare.

• The bandage also demonstrated my limits as a designer. Money can help to solve many problems; but it is not something I can provide; nevertheless, what I can do is possibly the polar opposite. I can create something handmade, slow, and crafted with care.

The second phase is the Prescription Tea — *a formula for ‘present’ action*.

• The singular tea bag represents the healing nature of conversations and connections. It humanises us to slow down, share, and listen to stories.

• This also serves as a reminder of the spiritual nature of medicine as it was formerly regarded, while also providing hope for the future.

• I understood that I wanted user input in my research, so this artefact depicted how I wanted to navigate research — collaboratively.

The third phase is the Message in a Bottle — *a glimpse of the ‘future’*.

• This represents how personal touch and small moments should be treasured. The message inside contains rich unknown ideas, stories, knowledge, and emotions.

• The pill bottle emphasises the importance of perseverance.

• In this research, I would hold myself accountable to care, cherish, appreciate, and respect the stories and data from participants and users. The final output would have to reflect that too.

Egan's Appreciative Inquiry Workshop

In addition to designing critical artefacts, as part of the 'Design for Health and Wellbeing' paper, I also attended an appreciative inquiry workshop facilitated by Johanne Egan. This provided me with a hands-on understanding of the process, the thinking, and outputs this sort of method can produce.

I learned the following through participating in this workshop:

- The importance of fostering a safe environment for people to fail, learn and reflect.
- In a safe environment, sharing, discussion, and critique can be insightful and thought-provoking rather than intimidating and confrontational.
- Practising appreciation and positivity consistently is hard.
- Using arts and craft materials to express oneself allows people to feel more open with ideas and share even the most unrealistic ones. This inspired me to strive for a light and playful mood when interacting with participants in my research.
- Simple and small changes are valid; it all contributes to a greater outcome.
- There is so much existing good that is easily overlooked and forgotten.

After the workshop, I was motivated and aspired to design a product of a similar spirit to the hope and optimism I left with but adapted to the day-to-day of the ED.

Secondary Research

Egan's thesis was comprehensive and extensive. It contained transcriptions from interviews she conducted during the 'Discover' phase, and her reflections and recounts of the 'Discover' and 'Dream' workshops. I spatially organised insights and quotes from these into groups using a web-based whiteboard called InVision Freehand.

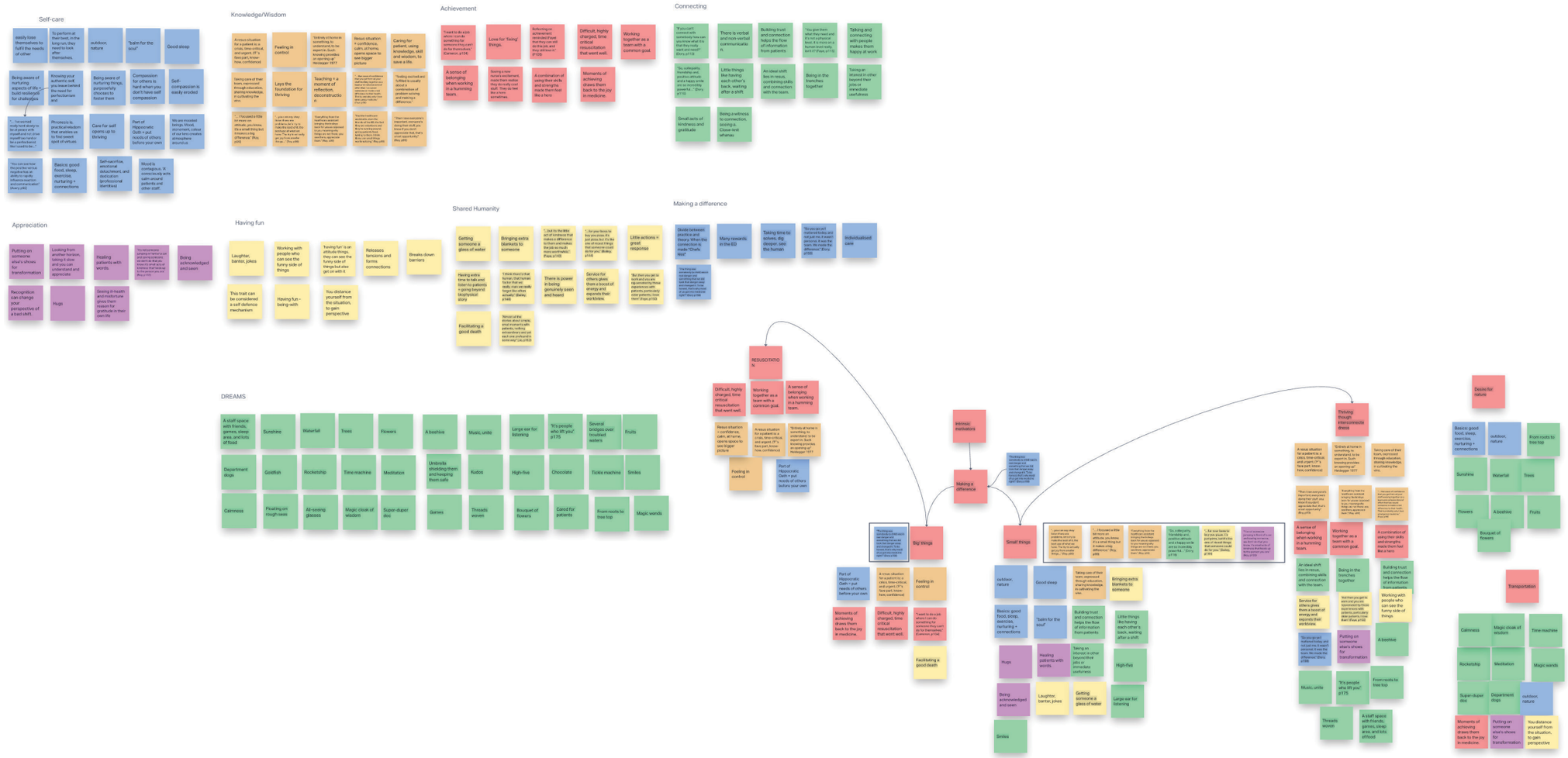
My method of choosing, sorting and categorising insights and quotes was loosely based on Braun & Clarke's (2016) Thematic Analysis. The Braun and Clarke approach is an organic method for qualitative data analysis that positive psychologists have used. The flexible and adaptable nature of thematic analysis made it suitable to follow to generate overarching themes and patterns of data of specific relevance to the aims of my study.

The following themes were constructed from the secondary data:

- Intrinsic Motivation
- Interconnection
- Invitation of Nature
- Transportation

Figure 17

Organised insights and quotes from secondary work



Intrinsic Motivation

The responses of intrinsic motivators proudly spoke about the ED workers' ability to make a difference in their patients' lives — to diagnose, care, and heal. One individual said they work in the ED because they can provide care and use their expertise for someone who cannot do it for themselves. Many recounted resuscitation events as a moment where they were vividly aware of the difference they made. When these life-or-death, time-critical, and highly-charged events went well, a sense of achievement would remind them of the joy in medicine that may have dampened over time:

> *"... somebody (a child) was in real danger and something that we did took that danger away and changed it. To be honest, that's why most of us get into emergency medicine, right?"*
>
> — Dory

Other respondents remarked on the simpler ways they made a difference, such as getting someone a glass of water, sharing laughter, and giving and receiving hugs. They described these simple actions as an acknowledgement that they see the patient and one another and that they matter.

> *"It's not someone jumping in front of a car and saving someone, we don't do that you know, it's small acts of kindness that feeds up to the person you are."*
>
> — Roy

Figure 18

Egan, (2018). Dreaming of a thriving healthcare worker

Interconnection

Many of the interviews and 'dreams' revealed the essence of the interconnection among the ED staff. Working in the ED was described as *"being in the trenches together"* and *"a beehive"*. There was a recognition and appreciation of becoming and achieving more by coming together and working towards a common goal. ED workers do not work and exist in isolation; they are influencing and being influenced by all that is around them at all times. They recognised the importance of everyone's skills and strengths and connecting as a team, allowing a sense of belonging:

"Everything from the healthcare assistant bringing the trolleys back for you as opposed to you moaning why things are not there; you see them, appreciate them"

— Roy

"... that wave of confidence that you get from all your staff working together as a team and cohesive kind of effort that has saved someone or made a real difference to their health. That is probably why I love emergency medicine."

— Faye

The interconnection also extends out to patients ED workers care for. Responses spoke of building trust and connection with patients to put them at ease and to help with the flow of information. One interviewee expressed how they are *"rejuvenated"* by lovely experiences with patients.

"It's people who lift you."

— Workshop Participant

Figure 19

Egan, (2018). Dreaming of an interconnected team

Invitation of Nature

The desire for nature was expressed in some interviews, but particularly in the 'dream' workshops. It was voiced in conjunction with basics such as good food, sleep, and exercise. The dreams communicated their desire for and connection with the outdoor, such as sunshine, trees, flowers, fruits, rainbows, etc. These aspects of nature were also used many times as metaphors. One group in a 'dream' workshop had compared the ED to a bouquet of flowers in a poem:

> *"ED is a bouquet of flowers*
> *Each flower is individual and beautiful*
> *Together they are special but required work*
> *Some flowers need support and others need something small like water*
> *Despite different backgrounds they come together as a group and become better."*

Another dream was of a vase of flowers holding all the components that come together and enable ED workers to do their job well. An interviewee emphasised the significance of nature, characterising it as a:

> *"balm for the soul".*
>
> — Faye

Figure 20

Egan, (2018). A bouquet of emergency flowers

Figure 21

Egan, (2018). Dreaming of somewhere over the rainbow

Transportation

The concept of transportation physically and metaphorically was pictured in many dreams (e.g. time machines, rocket ships, magic wands). These expressed the ED workers' wishes for a calm space to propel the healing of themselves or the team to enhance the quality of patient care. As well as transporting for rejuvenation and enhancing patient care, an interviewee spoke putting themselves in someone else's shoes by observing and listening, doing so, they gained an understanding of the silent hard work that is involved in every aspect of each role in the ED.

Figure 22

Egan, (2018). Super-duper doc

These themes guided the direction of research kits, including what the prompts would ask the participants. Later, concept generation and prototyping were informed by the themes and the quotes within them.

Primary Data Collection

Research Kits were developed for data collection. This section outlines the design of the kits, recruitment of participants, and participant responses.

Prototyping the Research Kit

The purpose of the Research Kit was to gather participant data creatively and abstractly, to allow participants to give form to their ideas in the way that best suited them. Research Kits were designed following the contextual review and consultation with Egan. Empathy mapping, sketching, paper and cardboard prototyping, and digital prototyping were used to arrive at the version distributed to participants.

Different creative methods to respond to prompts were explored. However, after careful consideration, a blank canvas was selected since it was the least restrictive and provided creative freedom for participants.

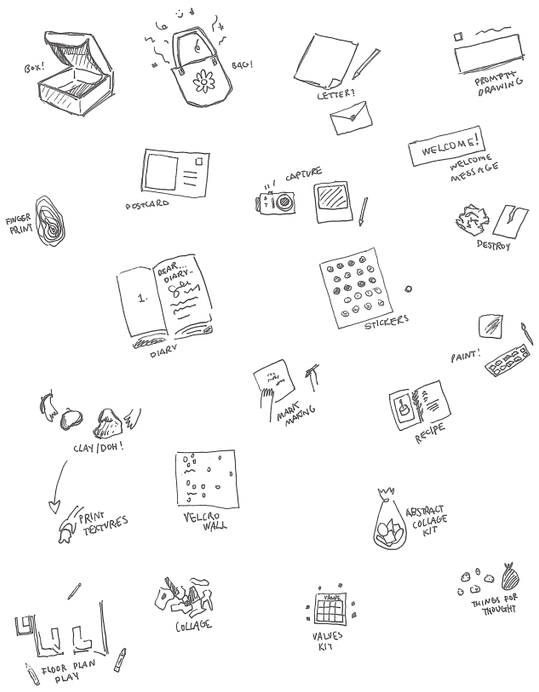


Figure 23

Sketches of different creative methods to gather responses

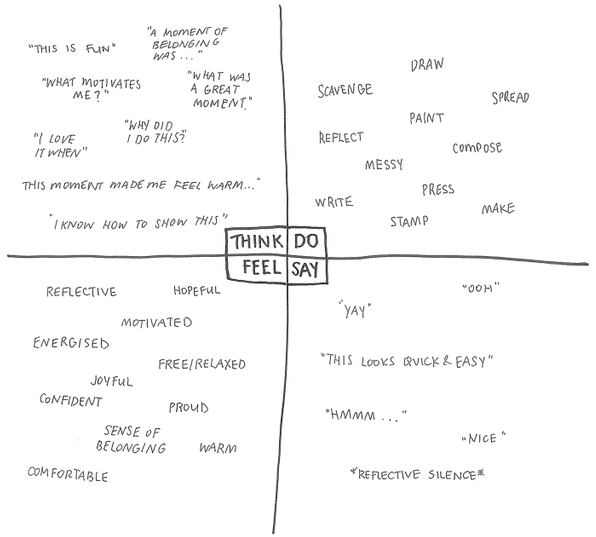


Figure 24

Empathy Map

An empathy map was generated to imagine an ideal experience for a user completing the Research Kit. It helped to break down the experience by imagining what a user might ideally feel, think, do, and say when they complete this kit.

The empathy map served as a rough design brief that generated the following requirements:

- The Research Kit had to be simple for quick and easy understanding and use.
An instruction sheet or video explanation would be needed.

- A blank canvas can be intimidating; therefore, making the user feel confident in expressing themselves with arts and craft materials was vital. This meant that the kit needed to feel easy-going and not overtly polished by being handmade with care.

- The prompts needed to trigger reflection on the user's motivations and joyful and meaningful moments in the ED.

- Various tools and materials would need to be provided in the kit to enable users to explore different methods of artistic expression.

First impressions are essential, so sketching was done to ideate and explore different ways of packaging the Research Kit and to visualise the unboxing experience quickly.

Tools and materials to prototype were limited during the lockdown, so I was restricted to paper prototyping for the packaging. However, this ended up being beneficial as it simplified the process and contents of the Research Kit to only the necessities.
In addition, a locked box to be placed in the ED office space that would collect and protect the participants' responses was required. The box size needed to be trialled physically, so the limited cardboard was used for prototyping it.

Figure 25

Research Kit packaging sketches

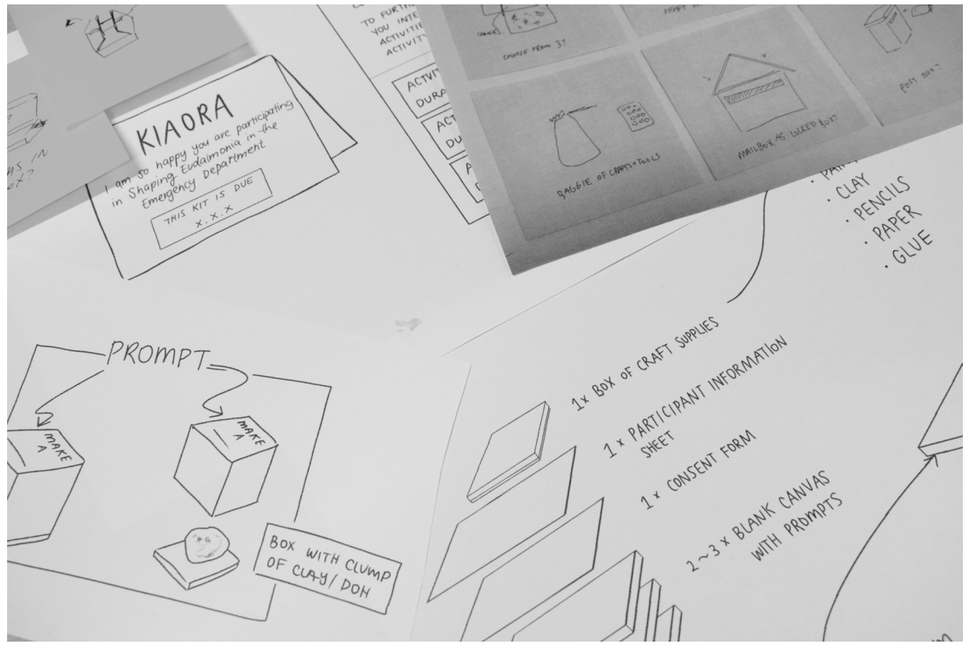
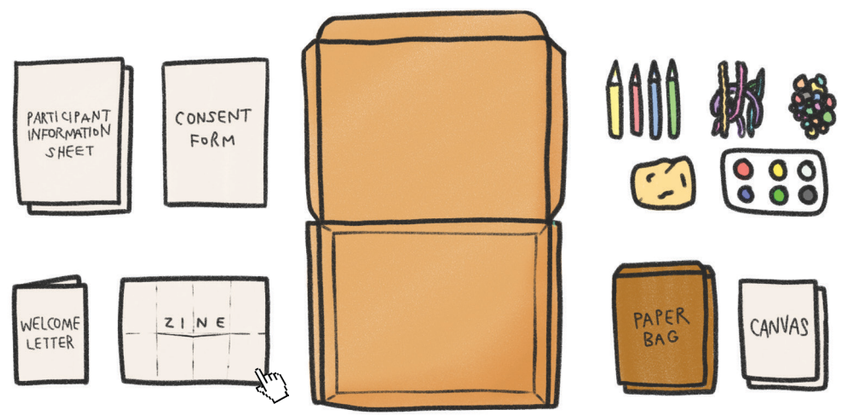


Figure 26

Making the locked box during lockdown

Figure 27

Digitised version of the Research Kit



To test out the logistics of the Research Kit, I sought peer feedback by creating digitised versions of the kit that displayed all the contents on a website. Details could be viewed by clicking specific icons.

The feedback I received was:

- To rename ‘zine’ to ‘inspiration booklet’ for broader and general understanding.

- To demonstrate methods of making more ambiguously in the inspiration booklet so as not to influence and lead the participants’ responses.

- Consider adding more methods of creating and expressing in the inspiration booklet, such as materials found in nature.

- There could be improvements to the clarity and engagement of the instruction sheet; this could be done through a comic-style instruction sheet.

Figure 28

Complete Research Kit

The final version of the Research Kit consisted of a welcome letter with instructions (see figure 33), a copy of the participant information sheet (see appendix 2), and an inspiration booklet (see figure 34). The kit included materials such as pens, coloured pencils, paint, clay, stickers, tape, glue, and miscellaneous craft materials. There were two blank canvases for them to respond on. Participants were presented with a couple of prompts printed on brown paper bags: '*Why do you do what you do?*', and '*Think of a moment you cherish — can you describe it?*'.

Figure 29

Inner lid of the Research Kit

Figure 30

Prompts stamped on brown paper bags

Figure 31

Blank canvases provided in the Research Kit

Figure 32

Arts and craft materials provided for participants

Figure 33

Welcome Letter provided in the Research Kit

Thank you for participating in this research

Let's get started!

You have 2 weeks to complete this

Enclosed in this kit are:

1x Participant Information Sheet

1x Bag of Arts + Craft goods

1x Inspiration Booklet

2x Paper bag with prompt

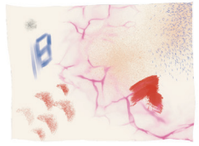
2x Blank Canvas

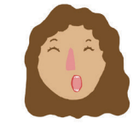
Each paper bag has a prompt printed on it.

You can respond to one or both of them on a blank canvas

If you are unsure of what to do, have a look at the Inspiration Booklet.

Take your time!





If you prefer to talk, you can audio record yourself.

If you want to make something with the clay, you can take a picture of your creation.

Upload the audio file or picture to wetransfer.com to the email xss9887@autuni.ac.nz

Once you are done, put the canvas back into the corresponding paper bag.

Return your creations to the locked box in the ED.

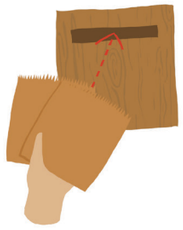
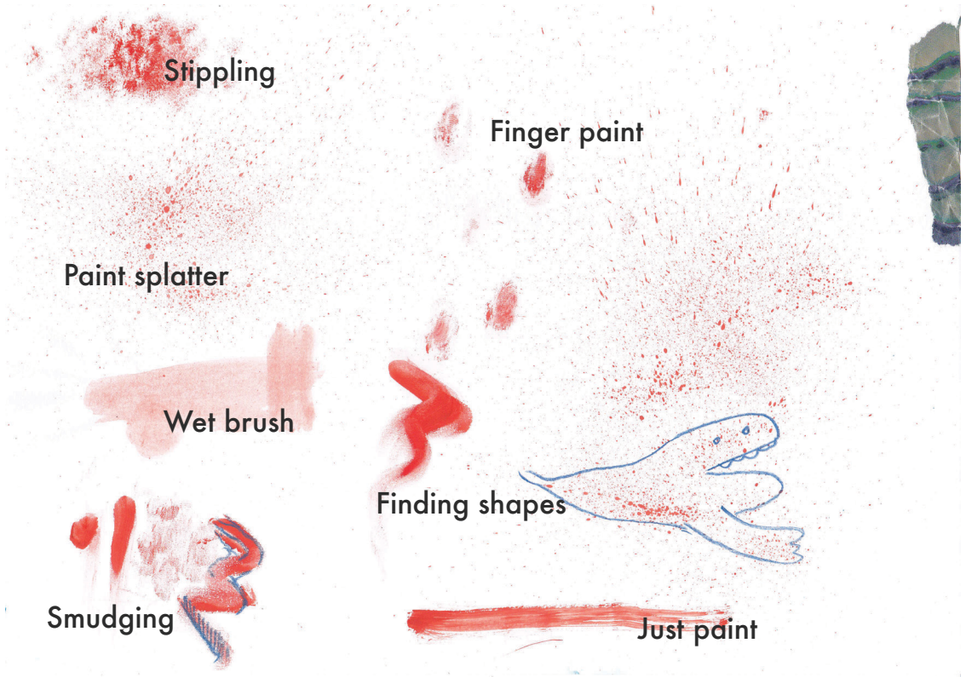


Figure 34

Inspiration Booklet pages



Participant Recruitment and Data Collection Process

Posters (see appendix 2) were put up in the North Shore Hospital ED office space for participant recruitment. Target participants were doctors, nurses, clerical staff, and healthcare assistants. Information sheets outlining the nature and purpose of the research and consent forms were also made available in the space. My email address and contact number were on the posters and information sheets. This was for potential participants to contact me directly for questions or more details and to express interest in participating. The maximum number of participants I aimed to recruit was five on a first-come-first-served basis.

After a participant had expressed interest, they completed a consent form, and a Research Kit was distributed to them through courier post for contactless delivery. Participants could respond to the prompts by drawing, writing, audio recording, model-making or any combination of preferred methods. If participants chose to respond with an audio recording, they were provided with a WeTransfer (wetransfer.com) link where they could upload their audio file to send to me. When a video call was preferred, a video call via Zoom was scheduled. The participation time for research kits activities was anticipated to be 5 – 10 minutes only. When the participants had completed the prompts in the Research Kit, they had the choice to return the kit to the locked box in the ED office space. Alternatively, they could take a picture and send it back to me digitally.

Two ED workers expressed interest, so research kits were sent out to both of them.
One participant completed their research kit and returned their response.
The participant preferred to dive deeper into the meaning behind their artworks through a video call after they had sent photos of their completed artworks. The call lasted approximately 30 minutes. The other participant did not return their research kit.

Participant Responses

The creative outputs generated by the participant using the Research Kit are shown in figures 35 and 36. Figure 35 shows the creative response to the prompt '*why do you do what you do?*'

My interpretation of the participant's response to this prompt was that they recognised that they have a lot of care and skills to give to the world. The ED is open 24 hours a day, 7 days a week, 365 days a year, without interruption. As a result, the sky's colouration struck me as them continually showing they give from dawn to dusk. They play a critical role in helping the world keep going day-by-day.

Figure 36 shows the participant's creative response to the prompt '*think of a moment you cherish — can you describe it?*' My interpretations were that they were alluding to a situation from a night-time shift where they had a moment to share their love and compassion.

During the video interview, I asked questions about the participant's motivators for pursuing a career in healthcare and how they would ground themselves during tough times in the ED (for a list of questions, see appendix 3). I also shared my interpretations of their artwork, which led to them adding further details to their stories.

Findings from the video interview were as follows:

- The participant's motivators to work in the ED were intrinsic and were initiated from a 'forever moment' — monumental and memorable moments, such as birth and death (Merriman, 2016).

- Challenging times like Covid-19 were difficult but became a motivator.

- The participant recognised the many ways they give to the world but emphasised the importance of 'little actions' such as *"listening to patients by lending an ear and giving antibiotics"*.

- There was gratitude and motivation in receiving easily overlooked gifts, such as colleagues and bosses that take time to teach and help them grow, and stories and smiles from patients.

- During challenging times, connecting with, and having conversations with patients would ground them and bring them joy.

- Despite saving lives every day, they feel small in this world in the grand scheme of things.

- Moments when things get tough, and they force each other to take their breaks shout *"you matter to me"*.

- Many ED workers' relationship with food is less than healthy despite a desire for healthy food. They consistently compromise their health to help others.

Figure 35

Participant, (2022). Participant creation in response to 'why do you do what you do?'

Figure 36

Participant, (2022). Participant creation in response to 'think of a moment you cherish — can you describe it?'

Designing the Outcome

Initial Sketching

Initial sketching was done in the early stages of this research before disseminating the Research Kits. Initial sketching comes with little pressure to deliver, enabling exploring potential ideas freely, so these sketches displayed my assumptions regarding ED workers and the design outcome.

My assumptions were that:

- ED workers would be too busy to notice a new product, so I would have to redesign existing products or spaces to embed joy and meaning reminders into the workplace.

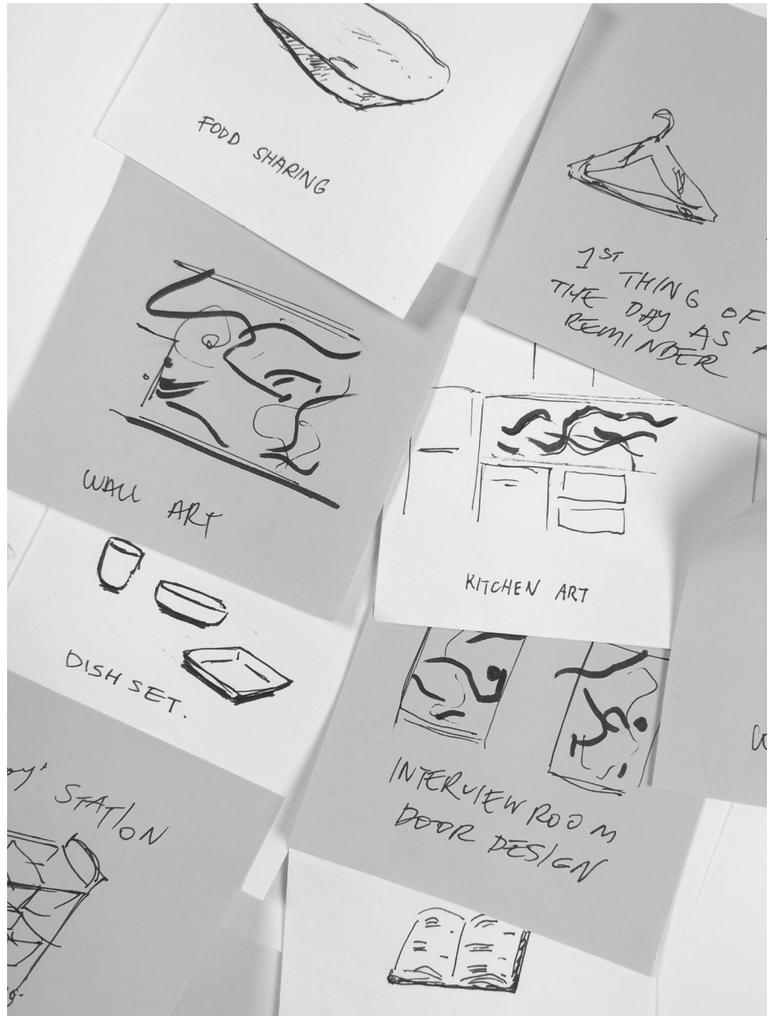
- Abstract work would not be well received in the space, so I was hesitant towards exploring artistic and imaginative ideas for the ED.

- ED workers would take little interest in other creative outputs, so I veered towards passive artwork, a common output for design for healthcare workers.

Concepts with little rationale were nonetheless done as there was a possibility for development later on. I used both pen and paper and digital drawing methods for this (see figure 37 for examples of initial sketches).

Figure 37

Example of initial sketches

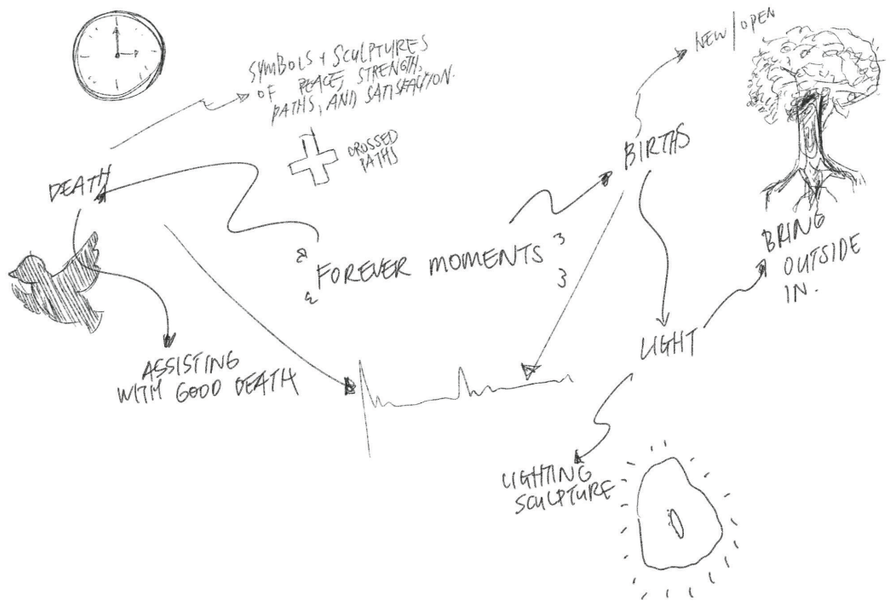


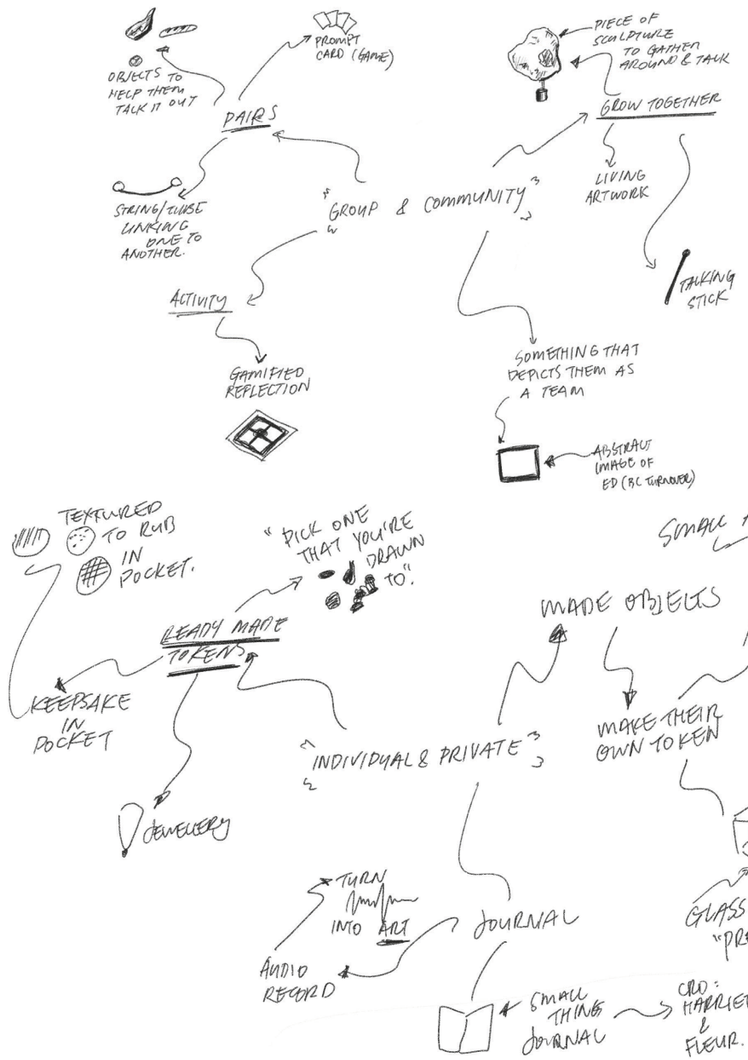
Mind maps were then created that began to incorporate more sketches as the map grew. The subjects of the three mind maps (see figure 38) were based on the three modes of reflection suggested by Serwint and Steward (2019). ‘Group reflections’ was adjusted to ‘group and community’; ‘journaling’ was represented by ‘individual and private’; and ‘forever moments’ remained unchanged.

Many concepts developed at this stage began to lean towards a sculptural theme. It was important to keep in mind that the output should not be perceived as something distant, impersonal, that stands separate from the users. A tactile and interactive product was necessary. The product would linger in someone’s mind as a result of the increased engagement.

Figure 38

Mind maps of ‘group and community’, ‘individual and private’, and ‘forever moments’.





Lotus Blossom and Sketching

A 'Lotus Blossom' (see figure 39) was completed, informed by the eight notions of thriving that Egan (2018) had articulated from participant stories. The intention was to ideate concepts quickly regardless of feasibility. From the Lotus Blossom, I hoped to find ideas that would fall under the three groups of 'group and community', 'individual and private', and 'forever moments'.

I was plagued with guilt because I had embarked on this research intending to make it participant-driven. It was hard to stay secure, given that I could not control the situation and could not have the degree of user input and involvement I would have liked. This led me to come up with concepts that would give ED workers autonomy and flexibility when using them. The majority of concepts were 'tools' for the users, for them to create artefacts that would grow and change over time, either alone or collaboratively. The dynamic aspect was intriguing, yet there was something off about it.

From the Lotus Blossom, concepts that embodied the themes while offering creative freedom for the users were developed into prototypes for clearer evaluation.

Figure 39
Lotus Blossom

Prototyping

The early prototypes took quotes and dreams made by the participants literally as part of the quick ideation process. These prototypes aimed to stop ED workers for a moment, to transport them to a 'space' for reflection. Clay, cardboard, paint, and paper were used.

The Painting Set

Egan compares the ED to a multifaceted puzzle; I liken the ED workers to strokes of paint, all contributing to a growing and evolving canvas. From afar, it appears to be a lovely and simple piece of art, but closer examination reveals the complexity in the mixtures and arrangements in the ways the strokes blend together and work to enhance a common goal. The beauty of it all lies in their unity and togetherness rather than competition.

This concept was taken literally from the strokes of paint analogy to encourage ED workers to contribute to a communal canvas. Some notions of thriving (Egan, 2018) were subtly embedded into the paint palette. The underlying purpose was to create a living canvas that represented and reminded the ED workers of the good that already exists within them.

The drawback of this concept was the quick-drying nature of paint, and the hesitance users may have to paint over one another's work. This concept does not encourage the evolution and growth of the artwork.

Figure 40

Painting set concept

Tiles

This concept had eight different coloured tiles, representing a different notion of thriving (Egan, 2018). As an ‘a line a day’ concept, it could become visual data of what goodness the team felt each day. Joy is contagious; it rubs off on others, forming a mutually reinforcing dynamic (Manion, 2003). This concept is adapted to the fast-paced work environment by being simple and quick, allowing a moment of reflection, and sharing it with one another. This flexible concept allows the users to take over and create their own rules instead of being imposed restraints. However, assigning themes to a colour may prevent users from breaking from the ‘rules’. As a growing piece of artwork, the method of use would evolve over time, depicting how as a department, they are constantly growing and thriving through their interconnectedness.

Functions like magnet blocks or connecting bricks were explored. The ability to be stacked on top of each other would add depth to the artwork. There was potential to redesign the desk dividers in the ED office space to incorporate this concept.

Figure 41

Coloured tiles concept

Make-a-Flower Kit

This concept was inspired by the desire to invite nature into the work of ED staff and by the poem comparing the ED to a bouquet of flowers. This 'Make-a-Flower Kit' would provide several petals and stems for ED workers to create flowers. Different combinations and arrangements of petals would be created to form a special bouquet. There was an opportunity for these to be gifts they could make for one another, to show their appreciation and gratitude. While making a flower, they would spend time reflecting on who for and why they are making it. There is no set meaning behind each petal; it would be up to the user's perception. In comparison with the other concepts, this one would be more abstract yet intimate. The benefit of this concept would be how it brightens up the space while being a familiar object - an object recognised as a way to say *"you matter to me"*.

The presentation of flowers is versatile due to its many components. There was potential to develop the components of this kit for further customisation and expression — for example, a dry-erase feature on the petals.

The downside of this concept would be the limited components resulting in a possibility of hesitation to rearrange one another's flowers to create their own.

Figure 42
Make-a-Flower Kit concept

The Gratitude Tree

A tree was at the core of two dreams reported in Egan's research. Peace, love, communication, and good flow through one of the trees. The other dream expressed the interconnection of the ED as flowing from the roots to the top of a tree. Starting at the base with a strong foundation of roots, the tree holds and connects the wisdom and people of the ED. This provides a strong foundation for all ED workers to flourish, grow, and rest. A bow decorates the base of the tree, representing the value and appreciation of it all.

These dreams of trees informed the exploration of the theme of 'invitation of nature'. This concept is a Gratitude Tree for recognising all the good work and kindness within the ED. Users would write or draw on strips of paper expressing their appreciation. Over time, the abundance of joyful and meaningful moments forms a fruitful tree of 'goodness'.

Figure 43

Gratitude Tree concept

Figure 44

Egan, (2018). Dreaming of the tree of life in the Emergency Department

Figure 45

Egan, (2018). Dreaming of an Emergency Department tree

Reflection

These prototypes considered the themes articulated by Egan and the themes I generated. However, seeing and touching physical prototypes amplified the sense that *'something was not right'*. Upon reflection, I found I was steering back towards the initial research route. These prototypes were superficial as they merely brushed the surface of the abundance of existing joy and in the ED. They just ticked the boxes of the eight notions of thriving but did not dig deeper than that.

I circled back to re-examine Egan's (2018) thesis. This time, I took a step back from a researcher's perspective and read the thesis as a form of storytelling. There was no intention to extract data while I read. I was able to fully immerse myself in the stories and empathise after shifting my mindset away from mining for data.

Having had a moment to reflect and approach the research from a different and more empathetic and human perspective, I realised that the prototypes were not only superficial but also not exciting. During the pandemic, it felt like constantly moving forward with the prototypes was critical; otherwise, I would fall into a deeper hole of self-doubt. However, it was the very opposite of this. Design should be iterative, not linear, and sometimes it can be a messy process (Subherwal, 2016).

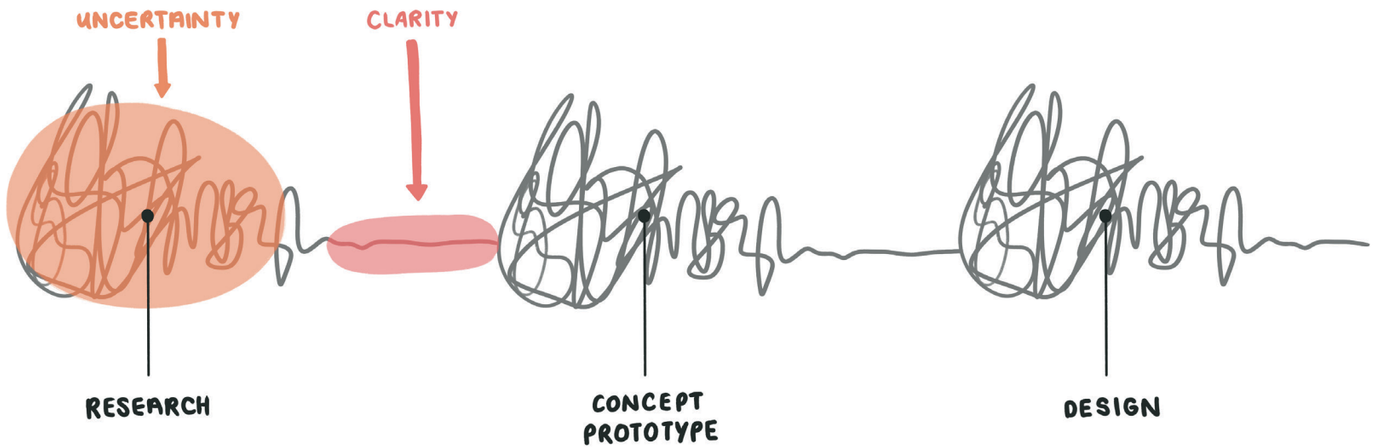


Figure 46

Subherwal, (2016). The Design Squiggle Process

I paused for a moment of reflection to locate a time in this research where things felt authentic and exciting.

It led me to return to the beginning and consider the initial sketches and ideas. While reflecting on the journey thus far, I picked up nuggets of ideas along the way, such as the critical artefacts designed before the research had begun. These ideas were formed at a surface level, but after further literature review and participant responses, I had the rationale to develop them.

Designing the brief — design considerations and objectives

I formed a list of design considerations and objectives for my design outputs. These then served as a reminder of the factors that should be considered when designing and developing artefacts within this project:

- Designing a set of artefacts to encompass many themes, as opposed to a single artefact, would be more appropriate, as the essences of joy and meaning are intertwined together yet so broad.

- The artefacts needed to highlight the precious moments and actions that easily slip away. The acts of shared humanity, such as words of kindness and warmth and small gestures that show they care about one another, are easily overshadowed by defining moments in life such as birth and death.

- Artefacts should encourage interpretation. This is to allow reflection to arise in ED workers to cultivate an environment that recognises and brings attention to the existing good at work.

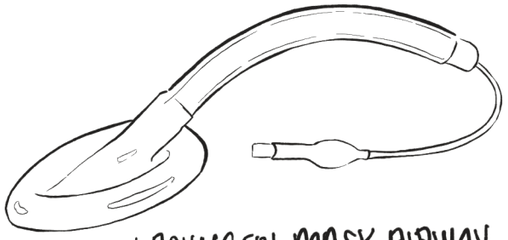
- The aesthetic of the artefacts should feel attractive, comforting, familiar, and simple. This will allow them to be more approachable to all ED workers.

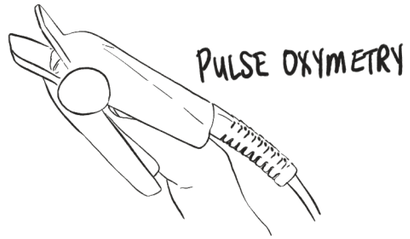
- The scale of the artefacts and their packaging needed to be non-intrusive. As they intended to exist in the ED office space, being mindful of the surroundings is essential. The artefacts combined should be around the size of a briefcase so it can be easily moved around.

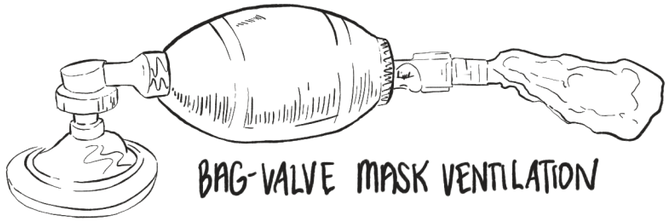
- The artefacts should be usable to an extent. Although the focal point was for the artefacts to visually embody abstract notions to trigger reflection, being interactive is important too. Being interactive and tangible will have a more significant impact and linger in the users' minds.

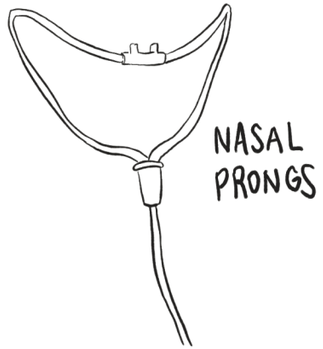
Framing the Design Direction

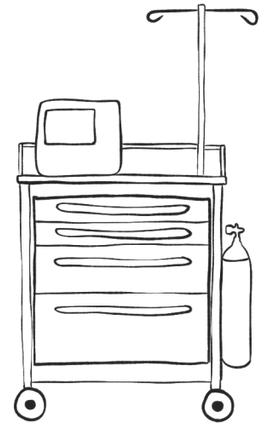
The staff resuscitation trolley concept inspired by WRaP EM (2018) had been left behind in my explorations. Yet, there was merit in developing it because it held so many small things that contribute to a larger purpose. The resuscitation trolley holds the very essence of why ED workers do what they do. Resuscitation events are stressful and time-critical crises. The trolley possesses all the tools ED workers need to do their job, so they can solely focus on the urgent goal — saving a life.

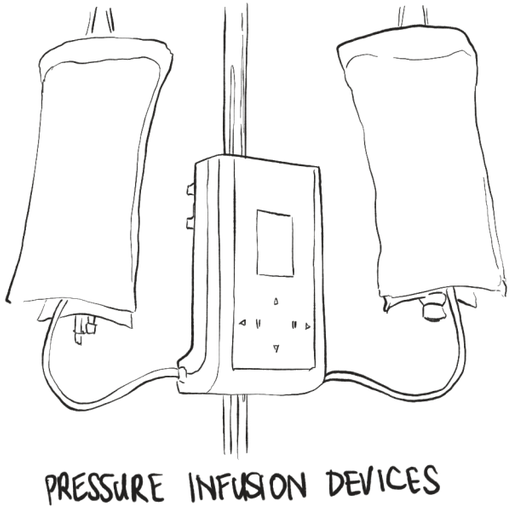












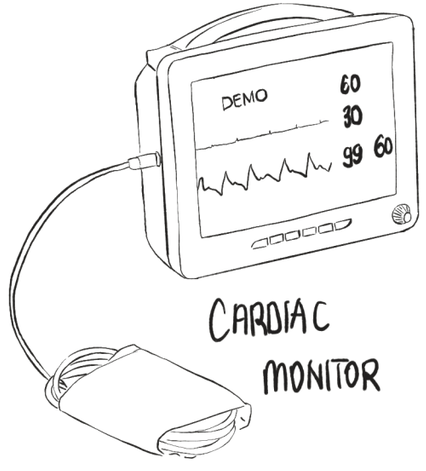


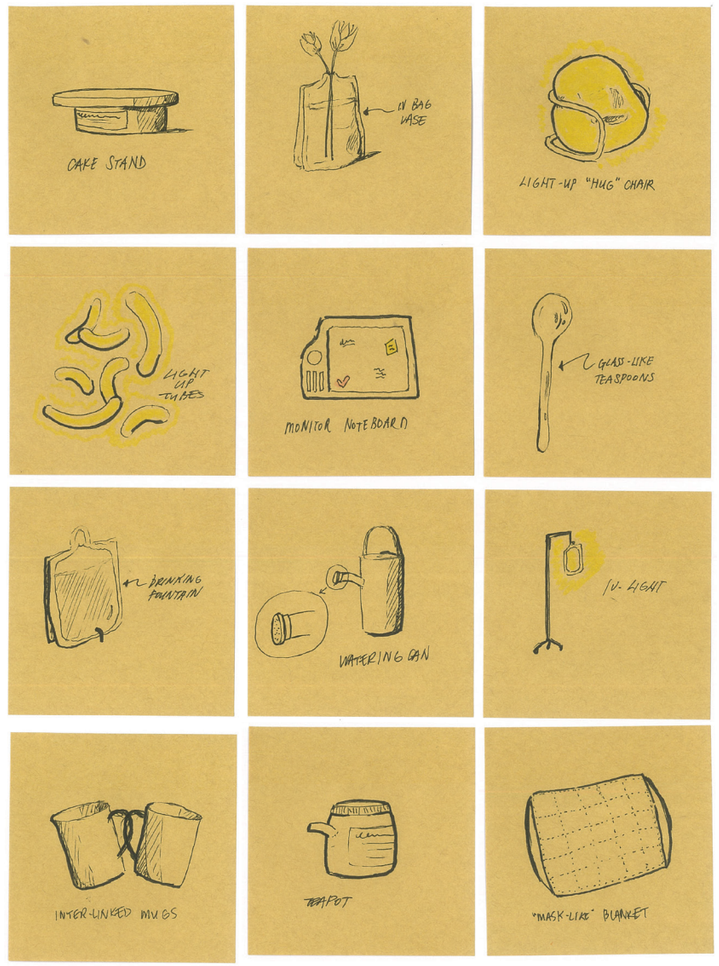
Figure 47

Resuscitation trolley equipment

I began by sketching out existing medical equipment from the resuscitation trolley and everyday products that contribute to our wellbeing to redesign and merge the two categories. The purpose of this was to take the familiar tools that enable ED workers to use their skills and save lives and blend them with ordinary items of care. This would serve as a reminder of the excellent care they do daily for patients and each other — and offer a perspective of seeing the little acts of kindness. This concept flips the focus from helping patients to helping themselves, prompting them to take time to breathe and to look after themselves and their colleagues.

Figure 48

Medical equipment crossed with wellbeing product sketches



The need for a series of artefacts resulted in an exploration of tea sets (as symbols of our everyday interactions) blended with medical equipment. This concept felt stagnated due to a weak relevance to the ED — it was important to continue to recognise the ED workers' expressed desire for nature, and consider the theme of transportation. The tea set concept consequently evolved into a picnic set. A picnic set sets a playful and comforting tone that is in distinct contrast to the sterile and clinical environment of the ED. It brings the outside in along with all the laughter, chats, relaxation, and good weather associated with it. It is also a nod to late October 2021, when Tāmaki Makaurau Auckland's Covid-19 restrictions allowed double-bubbles to gather outdoors for picnics (Williams, 2021). This was a significant stage in allowing us to reconnect and spend quality time together in-person again. The neglectful and unhealthy relationship some ED workers have with food due to little time and devotion to patient care is hinted at in the picnic set. It is a reminder to care for and nourish their bodies. This led to a focused exploration on blending the form language of picnic items with resuscitation equipment.

Figure 49

Joy of Picnics

ABCs

The ABC is a mnemonic device for the protocol to resuscitate a critically ill or injured patient:

A — Airway
B — Breathing
C — Circulation

The purpose of this systematic approach is to save lives, break down a complex clinical event into manageable components, and help assess the patient's situation (Thim et al., 2012). The ABC is a vital aspect of resuscitation, and, considering the abundance of joyful and meaningful moments in the ED, emulating the ABC way of breaking down the delightfully complex, abstract, and interconnected nature of the existing good in the ED was fitting.

Consequently, the ABC protocol was recalibrated into:

A — Appreciation
B — Belonging
C — Connection

The items in a picnic set were easily adapted to fall under the new ABC, which narrowed down to three artefacts to design:

A. To represent *'Appreciation'* is a plate. It was designed to frame and appreciate all the small moments of kindness and compassion ED workers give and receive from one another at work every day. When they share something with this plate, they are saying, *'I see you, you matter to me'*. When they use the plate for themselves, they are taking a moment to acknowledge and appreciate the care and wisdom they provide. It is a *'thank you'* for their body and mind.

B. To represent *'Belonging'* is a cutlery set. The set of cutlery expresses the difference between them all; yet it is the differences that complement each other as they work towards a common goal. They were designed to remind the ED workers that they belong in this vast world and universe, no matter how small they may feel at times.

C. To represent *'Connection'* is a set of cups. The cups make ED workers' connections with one another visible and tangible. They are an invitation to share a moment with one another, and to serve as a reminder of all the connections they have already formed — from the meaningful trust that is built with patients to the confidence they have knowing they have one another's back.

Artefact Developments

As a designer, I had no prior knowledge of medical equipment. When designing artefacts, I gained a general understanding of medical equipment used in the resuscitation trolley through watching introductory videos and articles. This was to determine whether it was appropriate for this to be 'redesigned' as an artefact. Although being able to touch the real thing, see how it is used, and ask ED workers questions about the equipment was the preferred process, it was not possible at the time. However, by watching introductory videos from various EDs, I was able to narrow down the focus to the central equipment of the trolley.

Appreciation (Plate)

Plate concept sketches were done based on the form language of medical equipment observed on the resuscitation trolley. There was an exploration of incorporating tubes, medication packaging, medical equipment, and plastic packaging aesthetics.

Using a tube aesthetic allowed for greater versatility in form as it could be twisted, woven, interlinked, and sculpted into many shapes. It offered a representation of the messy interconnections and the beauty that can be created as a team. They did not, however, emulate the idea of framing for appreciation.

It was easy to pick up on the connection to medical packaging in concepts that drew inspiration from it. Despite quick recognition of the influence, compared to other concepts, this appeared to be the most unimaginative and literal translation of the form language. It did not offer the level of abstraction for conceptual imagination and reflection.

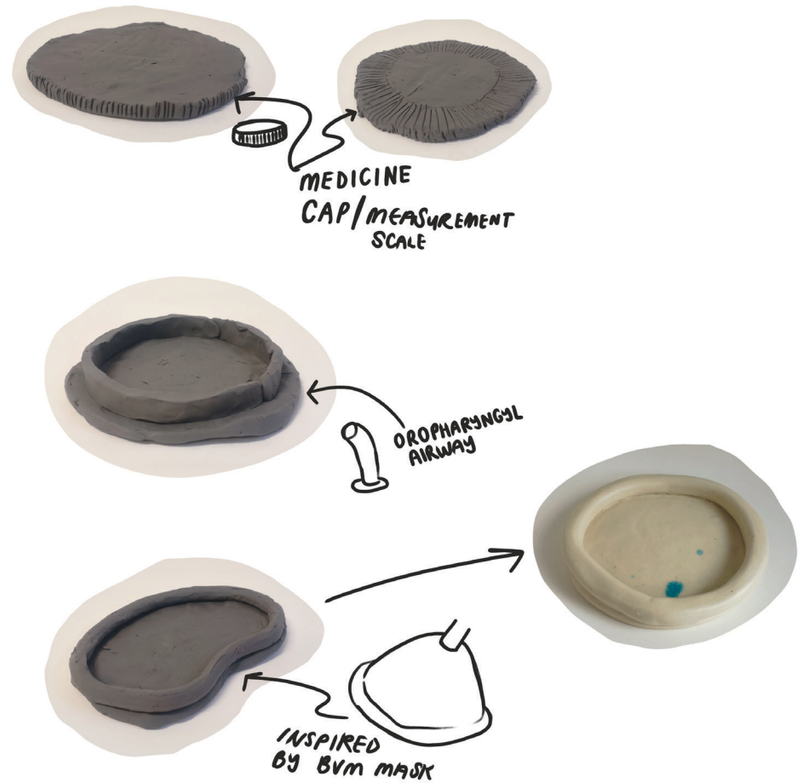
Although plastic packaging is used commonly for sanitary reasons for infection control, there are connotations attached to plastic, such as disposability and trash. These associations can easily take away from the meaning attached to the place concept. One of the criteria was having a comforting aesthetic. Imitating plastic packaging meant the materiality had to be clear and transparent, which would mean using either plastic or glass. Although they can be designed to feel comforting, these materials do not generally give off that impression.

Concepts that drew inspiration from medical equipment, such as the bag-valve mask ventilation (BVM), felt more favourable and appropriate. Their characteristics were easily manipulated not to appear overly literal, which left room for interpretation. The focus was thus narrowed down to the mask component of the BVM.

The decision to use clay as the material across the three artefacts was due to the impressionable nature of the clay. Every pinch, accidental nib, and imprint is visible — highlighting the handmade aspect of each ceramic piece. Handmade items demonstrate that effort was spent meticulously building and crafting them, from wet clay to bisque and glaze ware.

Figure 50

Appreciation x Plate development



Belonging (Cutlery Set)

The cutlery set underwent a similar exploration approach to the plate concepts but with a tighter focus on medical equipment. Out of the three artefacts, the cutlery set was the easiest to develop intricate and elaborate concepts for. The requirement for the artefacts to appear like they belong together helped keep the cutlery's design minimal so that it did not become an object of novelty and lose its' abstract element.

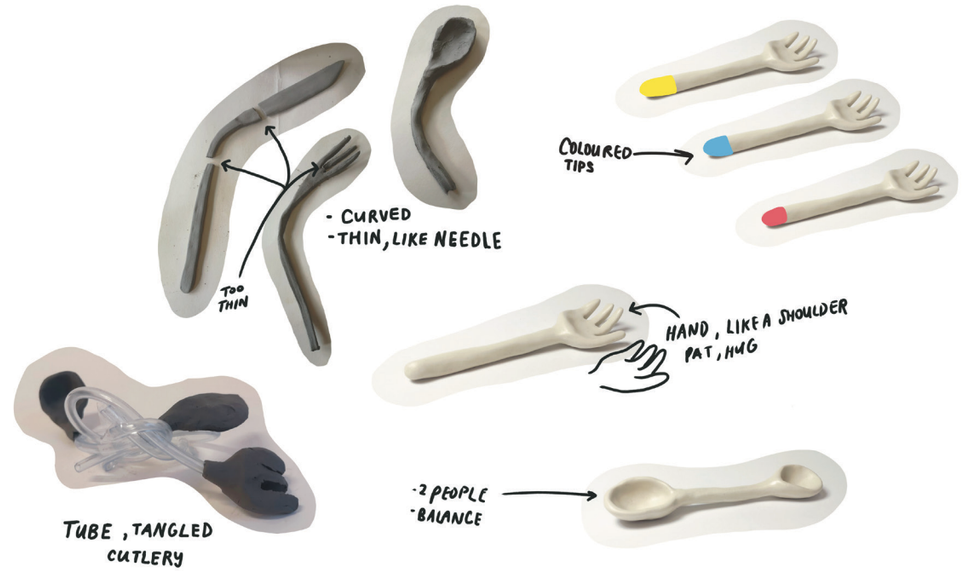
Some concepts were influenced by how various colours would be used to differentiate equipment, such as oropharyngeal airway sizes. This felt appropriate because, like the equipment, the cutlery pieces are part of a set yet still distinct from one another. The colours show their differences, yet show that they belong together, which is fitting for the belonging theme. This direction was not pursued further as it separated the cutlery set from the other artefacts.

As with the plate concepts, the form of the cutlery was initially prototyped to take on a tube aesthetic. It started as literal emulations, such as the handle being hollow and the piece being clear and transparent. The design brief asked for the aesthetic to be simple. A simple curve to the handles was a subtle yet purposeful change. It emulated many tools found on the resuscitation trolley, such as the Magill forceps, endotracheal tubes and laryngoscopes.

I made the first iteration of the spoon in the wet clay stage but skipped over the leather-hard stage to make controlled changes. As a result, the spoon was too narrow and pointy to feel comfortable to look at and hold. I played with the thickness and curvatures to achieve the desired effect. I also factored in the curves and thickness in relation to the plate concept as it needed to be a 'family' set.

Figure 51

Belonging x Cutlery Set prototypes



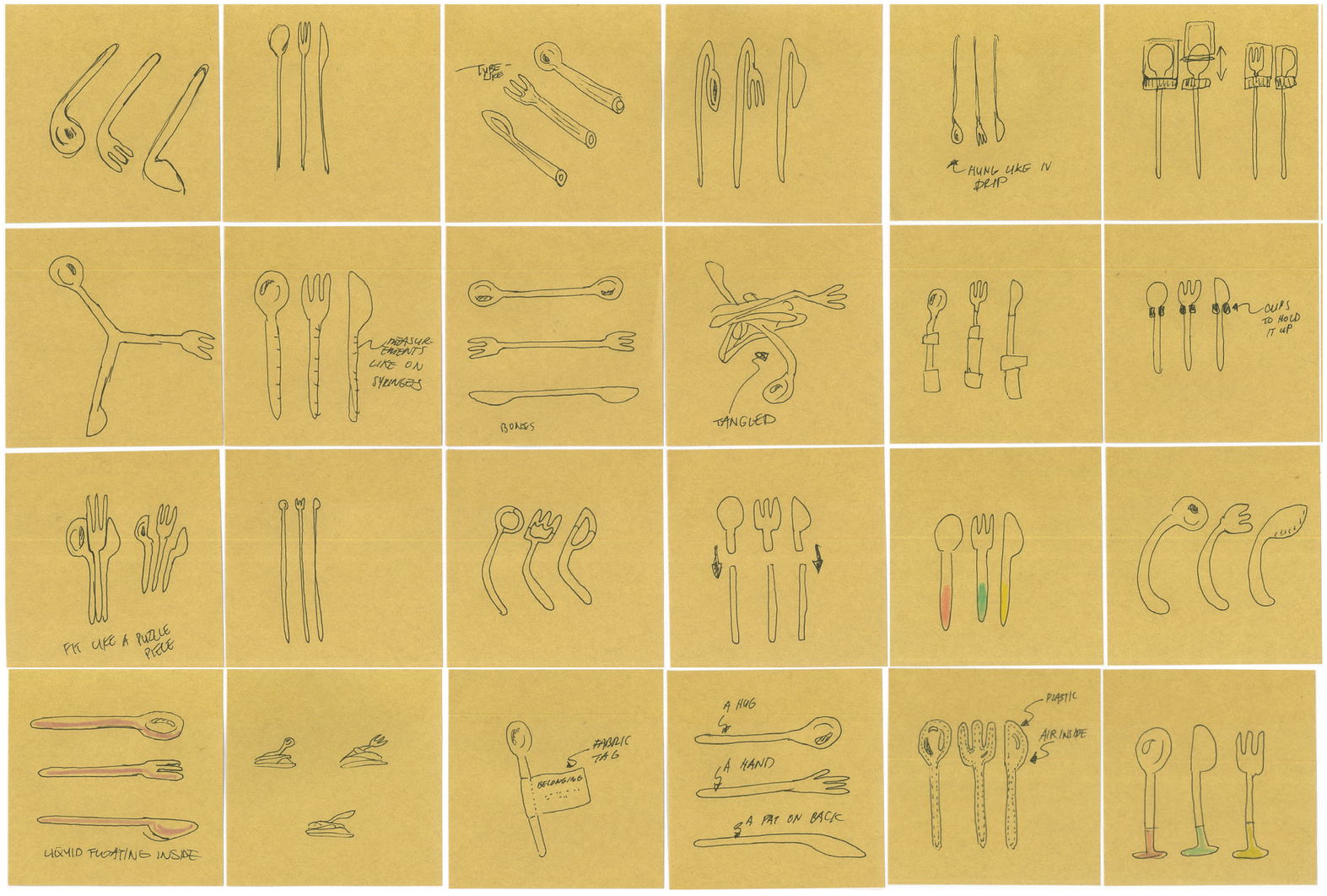


Figure 52
Belonging x Cutlery Set sketches

Connection (Cups)

The initial cup concepts took a literal route by mimicking plastic medicine cups with measurement scales. Concepts inspired by cylindrical medicine cups were basic as there are no distinctive features, making it difficult to identify the concept's relationship to medicine. The inclusion of scales within the cup was the sole distinguishing feature. Cone-shaped medicine cups are less commonly offered, but their form is more distinctive, making the association clearer. However, it can also be confused with a v60 coffee dripper. Despite being the most well-received concept among peers, it did not fit in with the form of the plate and cutlery set. Its' use is also not limited to the resuscitation trolley or ED, since anyone can utilise it.

The cup ideation also went through a similar process as the prior artefacts.
I experimented with the handle of the cups as it was a simple feature that could be altered easily and still be identified as a cup. This included taking shapes of medical equipment directly without modifications and using them as handles, and drawing inspiration from prevalent features on the resuscitation trolley such as tubes, loops, and curves. These features were explored more to construct a form relationship with the cutlery set. However, this still did not feel like the best way to navigate the task of visually connecting the three artefacts.

Unlike the cutlery set, cups were significantly harder to generate a connection to the resuscitation trolley. When experimenting with the form of the cup, I found that it would either feel like a random novelty cup or a vase. Although the plate and cutlery set concepts could be modified, it was unjustified to change two concepts that worked in order to accommodate one with a more ambiguous connection.

I referred to the plate and cutlery set design to ensure the cup would have a strong connection. This led to favouring concepts based on the BVM's self-inflating bag.
The raised rings on the bag were accentuated in the cup development to make it appear soft, friendly, and comforting. The ring detail in the plate and cups matches the curve in the cutlery handles, establishing a subtle link across the artefacts.

Figure 53
Connection x Cups sketches

Figure 54

Connection x Cups prototypes

Reflective Aid

I began by designing cards that introduce the set of artefacts and explain what each of them represents. For the copy, it needed to be simple yet personal enough for the ED workers to relate to it. The design of the cards then began to take inspiration from cognitive aids found on resuscitation trolleys to prompt and enhance cognition and best medical practice. These were suitable to take inspiration from, as the introduction to the set had to be short and to-the-point.

Through development, I found that although a reflective aid would be helpful to describe the artefacts and would be connected to the resuscitation trolley, it would not serve its purpose in a fast-paced environment. It would be inconvenient for ED workers to spend time flipping through a little booklet that existed separately to the artefacts and the case. To simplify the description process, the copy was laser-etched into the inner lid of the case. So when users open the case, everything is visible at a glance.

Figure 55

Reflective Aid sketches

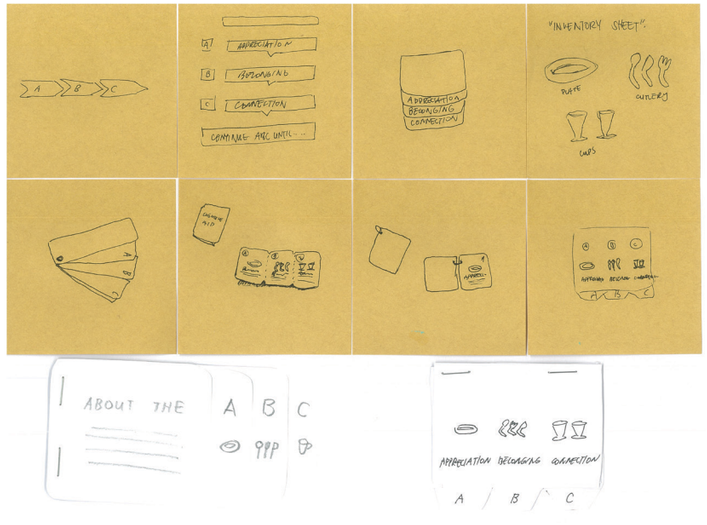


Figure 56

Reflective Aid paper prototypes

Case of Reflection

As every element of the design output needed to be a metaphorical blend of the resuscitation trolley and a picnic basket, it was critical to evaluate which direction to lean towards for each and every feature.

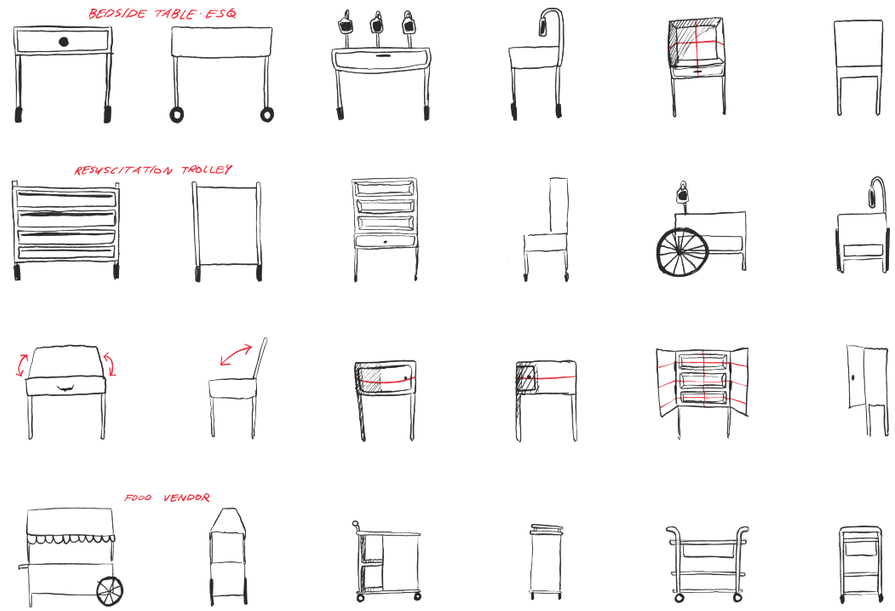
Resuscitation trolleys have drawers for different sections. I explored concepts with separation aspects; however, that increased the scale of the trolley. The redesign of the resuscitation trolley needed to be smaller as it would hold significantly fewer items than a real trolley, and for it to be non-intrusive in the space. I explored food truck vendors, domestic furniture, and pop-up stall designs for a more playful and inviting aesthetic; they were often made up of an assortment of components and colours. However, taking more of the picnic basket aesthetic was preferred as it was smaller and had greater potential to bring attention to playful and carefree moments, as opposed to the stressful life-saving situations associated with the resuscitation trolley.

Exploration was done on how to open the case, such as a drawer pull, a loose lid, a hinged single lid, and hinged double lids. A hinged single lid was chosen since it is more practical and takes up minimal space. A chain was attached to either side of the lid that keeps the lip upright to subtly resemble a picnic basket.

To determine how artefacts would be held, I mimicked ways the resuscitation trolley would hold equipment, such as sectioned off trays, using hooking mechanisms, sitting loosely, and slots cut to the form of the objects. I considered using a leather clasp, similar to what is commonly seen in a picnic basket, but ultimately, it would be an extra unnecessary step when users want to hold the artefacts. Slots carved according to the form of the objects were preferred since they not only emulated a resuscitation trolley drawer but also clearly displayed the artefacts. Carving out extra finger-sized notches would invite users to pick up and hold the artefacts. The decision to utilise foam as opposed to a denser material such as timber was made to protect the ceramic artefacts while also providing users with extra comfort due to a softer material. To enhance the connection of the case to a picnic, the foam was lined with red gingham; this pattern is also consistent with the cross symbol associated with hospitals. As a reference to the theme of interconnection, the case that held the foam used box joints to connect pieces of timber together.

Figure 57

Case of Reflection sketches



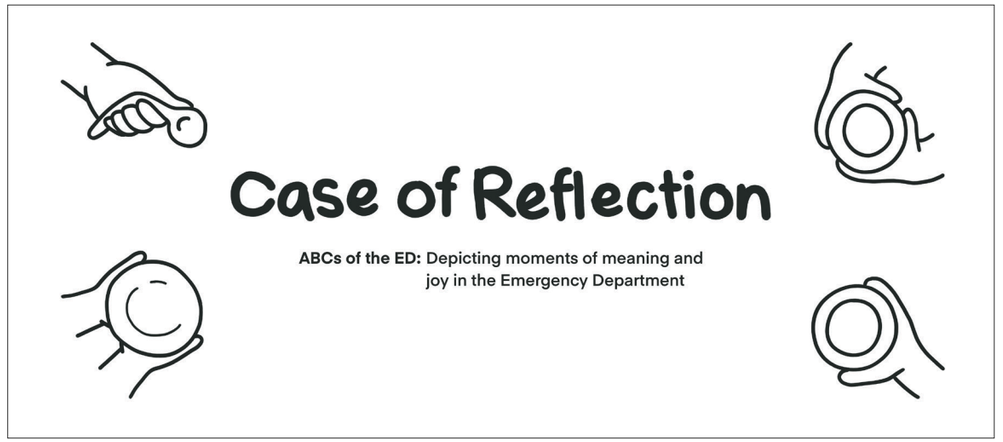


Figure 58

Case of Reflection lid designs

Figure 59

Ceramic artefacts in the kiln

Figure 60

Cardboard prototype of the Case of Reflection

Figure 61

Artefacts in laser cut foam

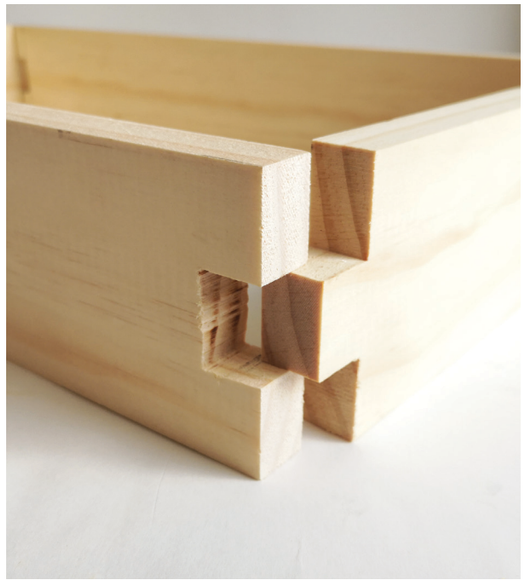


Figure 62

Box joint

Design Output

Figure 63
Final Case of Reflection lid close-up

Figure 64

Closed Case of Reflection

Figure 65

Open Case of Reflection

Figure 67
Spoon artefact being picked up

Figure 66
Close-up shot of laser etched details

Figure 68
Belonging Cups

Discussion

- The Opportunity
- Limitations of the Research
- Personal Learning
- Further Research Opportunities
- Conclusion

The Opportunity

This research used a human-centred design approach and participatory design framework to explore how ED workers' meaningful and joyful moments may be physically depicted, for them to grasp on to and evoke reflection on these easily overlooked moments during tough times. The participants' use of creative methods to express themselves in the research kit, and Egan's (2018) research that accentuated the existing positive aspects of the ED laid the foundation and guided the design direction. It provided insight into the ED workers' aspirations and motivators expressed through conceptual artworks. At the same time, the stories shared highlighted the 'soft' and abstract parts of the ED that make their day. This created the opportunity for design to encapsulate these abstract ideas in a tangible form. The findings from primary and secondary research were summarised in a design brief that prompted the outcome to be a series of artefacts that blended the form language of picnic supplies and the resuscitation trolley. Various metaphors within picnics and resuscitations were constructed and are consistent with the themes generated from secondary research.

Challenging times can spark change

EDs across Aotearoa New Zealand are stretched thin and are currently seeing record numbers of patients (Ward & Martin, 2022). Despite all the struggles; the variety, the fast-paced nature of the work, and the chance to help others attract and keep individuals coming back (Hill, 2022). The participant in this research expressed that challenging times, such as the ongoing pandemic, were difficult, but they served as a motivator. Recruitment of participants for this research took place under these challenging circumstances, and, although participation levels were suboptimal, its' objective became clear — ED workers had identified all that was good about their work prior to the pandemic (as evident from Egan's 2018 research); the outcome of this research enabled this to be physically portrayed so that during these tough times they can be reminded of what may have slipped away in the midst of it all.

The participant in this research recounted challenging times and how small shifts in pace — such as having a conversation and connecting with patients — would ground them and bring them joy. Many of the stories within Egan's (2018) research echoed this sentiment. These are evidence of how change can be silent, invisible, difficult to measure — yet, powerful.

> *"... collegiality, friendship and, positive attitude and a happy smile are so incredibly powerful..."*
>
> — Dory (Egan, 2018)

Creative methods and design can help expand and express ideas

Egan's (2018) research confirmed that creative methods are widely embraced and welcomed by ED workers. This finding informed the design and application of the research kits in this study. The research kit encouraged the use of creative methods to respond to prompts and be an enjoyable activity in itself, not only a data collection tool. When creating the artworks, the participants' decisions were intended to be small, such as *'what colour do I use?'* and *'should it be thick or thin?'*. By focusing on these low-stake decisions, the participants could unlock creative mental blocks to respond and enter a state of 'flow', which Csikszentmihalyi (1996) defines as a total immersion in an activity, where *"...ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved..."*. This process ensured that ideas and responses were not strictly defined so they could be expanded on and abstractly conveyed.

When the participant subsequently spoke about the prompts in the video interview, the artworks acted as a tool to help facilitate and draw out richer information and stories. The advantage of having the artworks as a talking point was to probe the participant about my interpretations and the process, details, and choices they made. This led to richer responses and aroused new ideas - the artwork served as a *'scaffold for conversation'* (Chamberlain & Craig, 2013). Despite only having one kit completed, the participant's artwork, engagement, and explanation served as a demonstration of how creative research methods can contribute to the richness of responses to a complex topic and as a valuable source to further understand the joy, meaning, and intrinsic motivators in one's work.

The output of this research was a series of relatively plain ceramic artefacts. The form was designed to be attractive, comforting, familiar, and simple. The simplicity flowed into the materiality and colour of the artefacts. The plain characteristic is almost a blank canvas — it invites ED workers to contribute their own moments of meaning and joy through reflection.

Limitations of the Research

Pandemic

Covid-19's comeback in Aotearoa New Zealand resulted in months of lockdowns and extended and heightened restrictions. The direction of this research had to be reframed to work around this, and access to the university workshop was limited, which impacted prototyping. In addition to the lockdowns, there were occasions when I was a close contact or household contact, which meant I had to isolate multiple times.

Ethical Challenges

Design for health researchers have often reported having no access to patients or the site itself as a barrier they faced while working in this context (Groeneveld et al., 2018). Although this was a challenge I expected, it did not prove to be an issue. Despite the need and enthusiasm for this research expressed by the ED and receiving approval from the department's operations manager and clinical director, it was the university ethics committee that proved to be a hurdle. Groeneveld et al. (2018) found that ethical considerations often restrict designers.

The process to gain ethics approval involved months of waiting and amendments. It is important to recognise that these ethical barriers are put in place to protect myself as the researcher, the participants, and the university. However, the constraints eventually placed by the ethics committee, despite the eagerness of the healthcare organisation to enable this research in their setting, raise the question of the boundaries that the ethics committees should operate within — whether they sometimes cross them and whether they should put more trust in the expertise and experience that comes from the context the research is situated in around what is possible and 'disruptive' or 'not disruptive' — especially with the support of decision-makers in that space.

Recruitment and Participation

The barriers imposed by Covid-19 meant I struggled with participant recruitment and being able to follow the participatory design framework. Groeneveld et al. (2018) found that designers are often limited by the availability of healthcare workers to collaborate with on design for health projects. I had anticipated this challenge and hoped to navigate around it by being readily available to ED workers in their office space during my research. The ED, as well as the entire healthcare system, were already overworked and under-resourced prior to the pandemic; with the resurgence of Covid-19 in the community participation in this research became unlikely. Although I had optimistically aimed for a maximum of five participants, there were two expressions of interest but only one response. I am grateful and lucky to have received a rich output from the one participant — especially during a pandemic. It demonstrated what is possible using creative methods to help people think deeper about complex things and how it supports people to express these ideas that are often hard to articulate with only words.

Not being able to engage directly with more staff, however, enabled me to focus in more depth on the existing secondary data. Egan's research was carried out in the same context as my study; her data was originally the starting point for my research. Egan has worked as a physician at the ED for over two decades. Her experience and the relationships she had formed over the years with the people in the ED could not have been matched by a designer new to this context. The interviews for her research were conducted in an existing environment of camaraderie, connection, comfort, and trust. The stories she uncovered were at a depth an outsider was unlikely to reach, giving her findings credence and richness to inspire a designer to give a physical form to.

To navigate this 'limitation', I used empathy exercises in this research to check my assumptions and ideas as a designer with those of the user. This included considering how ED workers would perceive ideas and artefacts as opposed to a designer. As I was unable to interact and engage with ED workers regularly, it is difficult to know how accurate some of these assumptions were. Nonetheless, the interview with the participant in my study helped to reaffirm the design direction by welcoming the concept of blended artefacts.

Personal Learning

This research challenged me in designing in a healthcare context, a risk-averse and often inflexible environment, with many barriers to implementing even minor changes. It was difficult to remain positive and motivated at times as the journey felt slow and stagnant. I felt a personal responsibility and obligation to prove that the design made a visible impact; however, impact in healthcare is out of the designer's control — without those in healthcare to champion design (Nakarada-Kordic et al., 2021).

As designing in a healthcare context is complex, I learned the value of being responsive to changes and hurdles that may arise at any time; obstacles are to be expected in this environment, and we must adapt to move forward. Interestingly, the first and a major obstacle to this research proved not to come from the healthcare setting my project was situated in, but from the university's ethics committee who believed that the 'risk' of conducting research in the ED would outweigh its benefits. Groeneveld et al. (2018) also found that communicating the value of design in healthcare was difficult, particularly during the project initiation stage. I experienced similar challenges, but in the university context, when trying to get approval to conduct human-centred design research in the healthcare setting. This taught me to manage my expectations as well as others' expectations around the design outcomes and implementation, having to emphasise that this was exploratory research, not a cure-all.

When working on a design for healthcare projects, there is often collaboration between individuals from different backgrounds. With diverse backgrounds come different viewpoints, jargon, and methodologies (Nakarada-Kordic et al., 2021). As an individual with no ED background, I sometimes felt out of my depth and guilty that I was not qualified enough for this research. Not being able to establish a collaborative relationship with staff in ED throughout this project directly, as initially intended, led to my 'imposter syndrome' being heightened as a result.

The nature of this research led me to keep my own form of a gratitude journal, in which I would sketch or note down positive aspects of my day. Despite struggles to fill it out on certain days, it provided a means to reflect on when things were easier and to savour those moments. I was reminded of the 'humanness' and how the impact of small reminders is not instant and drastic but rather gradual. Upon reflection, I was pessimistic and detached at the start of this research, but by undergoing my own personal journey of noticing small moments of meaning and joy, I have found myself to have improved in optimism, appreciation, and hope; there are still lows, but this journey has yet to end.

This research focused on small actions that showed the shared humanity and care between one another. I learnt to embrace the handmade aesthetic and approach, as it helped the artefacts to emulate those sentiments by preserving the little fingerprints, bumps, unevenness, and dents. These 'imperfections' exhibit the messiness of being fully human, as well as the charm of something small but handcrafted with care. Modern healthcare is built on standardisation for good reasons, such as mitigating the risk of errors, increasing patient safety, and reducing costs (Lightner & Bagian, 2021). However, when dealing with complexities like our emotions and thoughts, it is not black and white; we are different and are not cloned, just as there is only one of these handmade artefacts.

Future Research Opportunities

This research was only a small step in exploring how design can benefit the wellbeing of ED workers. Without ethical, public health, and time constraints, I would have liked to have explored these artefacts further by seeking feedback from ED workers. I have identified further opportunities to expand on this exploratory research for the ED workers as well as the wider healthcare staff workforce.

Soliciting feedback from ED workers regarding these artefacts would need to be immediate, simple, and quick. One approach may be to provide a QR code with the designed set that directs people to a link for online feedback. This research recognises and embraces the complexity and non-dichotomous nature of being human; therefore, seeking feedback about the artefacts should not be done through 'yes-or-no' check boxes, 'very-satisfied-to-very-dissatisfied' scales, or 'one-to-five' star ratings. Instead, the feedback link might present the respondents with a variety of emotion icons to select in response, offer them a digital blank canvas to draw on, allow them to photograph a physical response on camera, or allow them to audio record their response.

Hospitals in Aotearoa New Zealand have recognised the opportunity to build on positive aspects of their culture and to work with the staff to design solutions for problems (Counties Manukau District Health Board, 2021). This research touches on such opportunities and, in the future, its design outcome could assist to further contribute to building on the positive aspects of work by facilitating one-on-one or group conversations or workshops. One approach to use in a structured workshop may be to incorporate the artefacts in existing reflective activities in the ED, such as Schwartz Centre Rounds. Schwartz Centre Rounds are an evidence-based forum where complex emotional and psychosocial issues that staff experience are discussed in a group; it has been trialled and continued to be used across DHBs in Aotearoa New Zealand, in Auckland, Counties Manukau, Waitematā, and Hawkes Bay (The Schwartz Center, n.d.). The group reflective practice has enhanced staff empathy, improved teamwork, and increased knowledge of patient care (Shah et al., 2017).

Participants could choose an artefact they resonate with and then share, one-on-one or in a group, a small joyful and meaningful moment they are reminded of. Since the artefacts are relatively simple and plain, they serve as a blank canvas. Participants in a wellbeing workshop could, for example, temporarily personalise them using coloured markers to represent their ideas and further support their storytelling. These enhanced artefacts could serve to keep participants grounded when they generate ideas and 'solutions' to improving their wellbeing. The design presented here could be further developed by expanding the library of artefacts to assist and broaden reflection on the abundance of existing positivity in the ED.

This research process has shown that using creative methods can broaden and deepen responses when collecting qualitative data. This approach of drawing on the artefacts could be used as a tool for collecting a library of small moments of meaning and joy; participants could be presented with prompts for each artefact, such as "*show me a moment you appreciate*", "*how do you know you belong?*", and "*draw or write a message for someone special*". Similar community initiatives, such as the Museum of Broken Relationships (MBR — https://brokenships.com/) and Museum of Meaningful Moments (MMM — https://www.museumofmeaningfulmoments.com/), show how artefacts may be utilised to tell stories. People may contribute to the platforms by submitting artefacts, photos, and drawings that symbolise a breakup or responses to a prompt, along with a brief story about them. MBR has collected a significant collection of artefacts sent by participants from around the world to exhibit their breakup, demonstrating the value of having a physical object as a representation of feelings and stories.

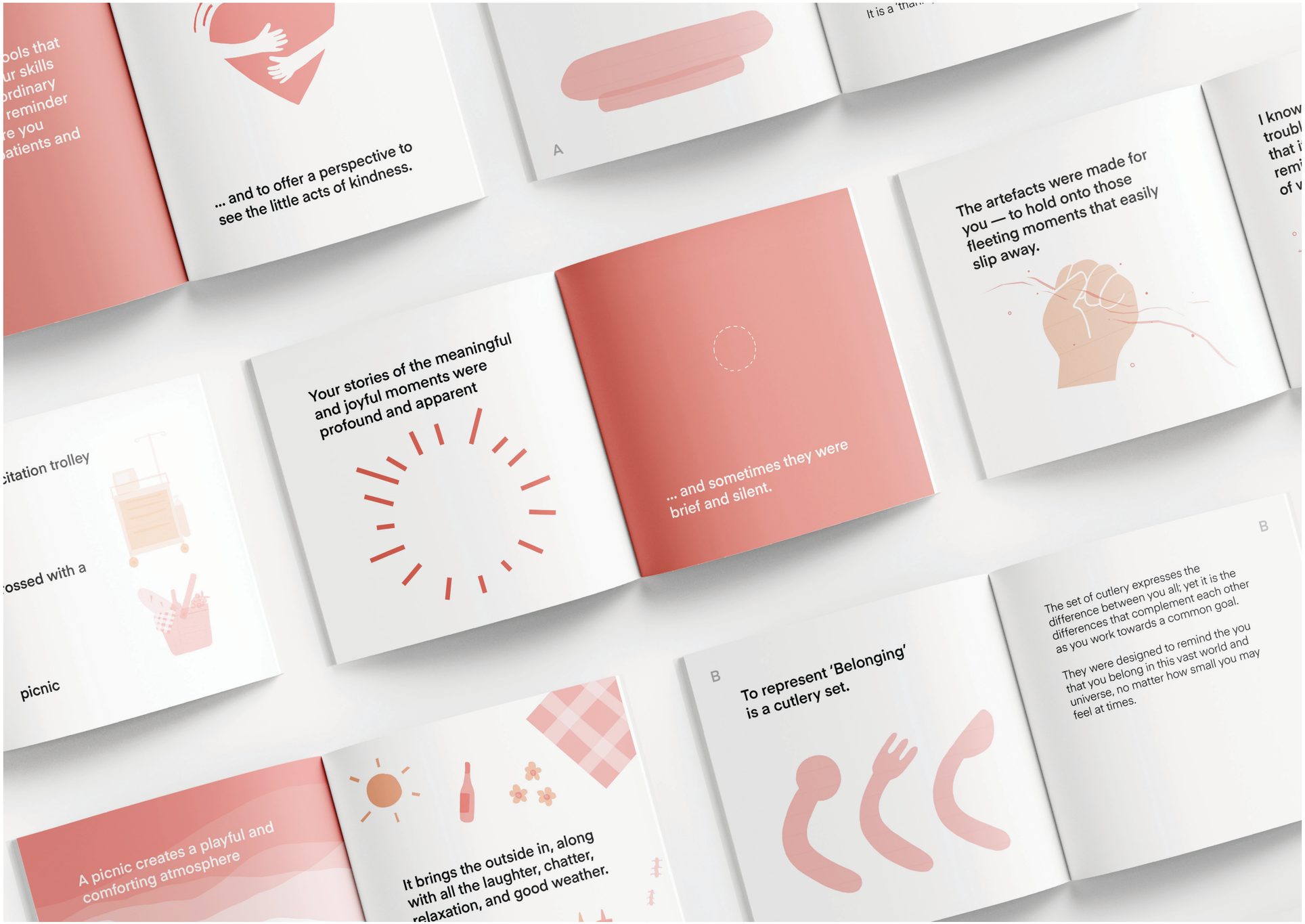
There is merit in using artefacts to physically depict precious moments in different departments within healthcare. However, as the designed outputs of this research were created for the ED context, informed by their personal stories and dreams and inspired by the resuscitation trolley, they may not be directly transferrable to other departments. There is an opportunity to undergo the process of appreciative inquiry within different departments, to work together and design artefacts that are representative of those work settings.

Conclusion

This project had no intention of causing immediate and systemic changes to ED workers' wellbeing; rather it was an exploration of the potential and benefit that design may have for improving the wellbeing of ED workers, which is largely disregarded (Huey, 2022). This research casts a pebble into the pond, intending to cause a ripple effect; the abstract nature of this research is reflected in the outcome and is likely to have a similarly abstract impact. The notions that contribute to joyful and meaningful moments are intangible; they can be hard to articulate and measure, just as there is no universally agreed-upon approach for measuring wellbeing (Huppert, 2017). Every person is unique, and the environment surrounding us constantly changes; therefore, the impacts of the artefacts designed here are intended to be unique, silent, and gradual.


A
Appreciation
B
Belonging
C
Connection


Waitemata DHB


... and to offer a perspective to see the little acts of kindness.
A
The artefacts were made for you — to hold onto those fleeting moments that easily slip away.
Your stories of the meaningful and joyful moments were profound and apparent
... and sometimes they were brief and silent.
picnic
A picnic creates a playful and comforting atmosphere
It brings the outside in, along with all the laughter, chatter, relaxation, and good weather.
B
To represent 'Belonging' is a cutlery set.
B
The set of cutlery expresses the difference between you all; yet it is the differences that complement each other as you work towards a common goal.
They were designed to remind the you that you belong in this vast world and universe, no matter how small you may feel at times.

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Appendices

Appendix 1

Ethics Application 21/287

Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

20 October 2021

Ivana Nakarada-Kordic
Faculty of Design and Creative Technologies

Dear Ivana

Ethics Application:21/287 **Depicting moments of meaning and joy in the emergency department**

We advise you that the Auckland University of Technology Ethics Committee (AUTEC) has **approved** your ethics application at its meeting of 11 October 2021.

This approval is for three years, expiring 11 October 2024.

Note: In the Information Sheet it might be helpful to give participants a guide to the amount of time required for each activity and when it needs to be returned.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.
8. AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: xss9887@autuni.ac.nz; jojessmatt@gmail.com

Waitematā DHB Locality Approval

RM15180 - Moments of Meaning and Joy in ED - Locality Authorisation

Research & Knowledge Centre <research@waitematadhb.govt.nz>
Fri 12/11/2021 10:31 AM
To: Zora Situ <xss9887@autuni.ac.nz>;Johanne Egan <johanne.egan@waitematadhb.govt.nz>

Dear Zora and Jo

The Research & Knowledge Centre has now received the relevant approvals for the following study:

Title: Depicting Moments of Meaning and Joy in the Emergency Department

Registration #: RM15180

This study now has Waitematā DHB Locality Authorisation. All substantial amendments to your study must be submitted to the Research & Knowledge Centre for review. Note that all research, audit and related activity must meet ethical standards in relation to the safe storage, retention and disposal of research data.

At the conclusion of this study a copy of any outputs, reports or publications should be forwarded to research@waitematadhb.govt.nz

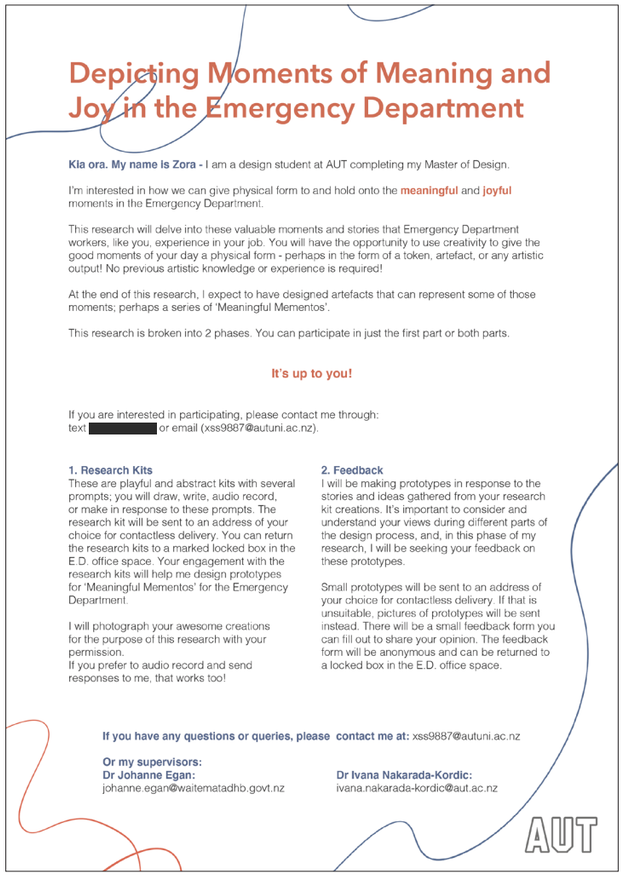
Good luck with your study.

Regards
Research & Knowledge Centre
Waitematā DHB

research@waitematadhb.govt.nz
ph. (09) 486 8920 ext 42071

Appendix 2

Recruitment poster displayed in the Emergency Department



Depicting Moments of Meaning and Joy in the Emergency Department

Kia ora. My name is Zora - I am a design student at AUT completing my Master of Design.

I'm interested in how we can give physical form to and hold onto the **meaningful** and **joyful** moments in the Emergency Department.

This research will delve into these valuable moments and stories that Emergency Department workers, like you, experience in your job. You will have the opportunity to use creativity to give the good moments of your day a physical form - perhaps in the form of a token, artefact, or any artistic output! No previous artistic knowledge or experience is required!

At the end of this research, I expect to have designed artefacts that can represent some of those moments; perhaps a series of 'Meaningful Mementos'.

This research is broken into 2 phases. You can participate in just the first part or both parts.

It's up to you!

If you are interested in participating, please contact me through:
text [redacted] or email (xss9887@autuni.ac.nz).

1. Research Kits
These are playful and abstract kits with several prompts; you will draw, write, audio record, or make in response to these prompts. The research kit will be sent to an address of your choice for contactless delivery. You can return the research kits to a marked locked box in the E.D. office space. Your engagement with the research kits will help me design prototypes for 'Meaningful Mementos' for the Emergency Department.

I will photograph your awesome creations for the purpose of this research with your permission.
If you prefer to audio record and send responses to me, that works too!

2. Feedback
I will be making prototypes in response to the stories and ideas gathered from your research kit creations. It's important to consider and understand your views during different parts of the design process, and, in this phase of my research, I will be seeking your feedback on these prototypes.

Small prototypes will be sent to an address of your choice for contactless delivery. If that is unsuitable, pictures of prototypes will be sent instead. There will be a small feedback form you can fill out to share your opinion. The feedback form will be anonymous and can be returned to a locked box in the E.D. office space.

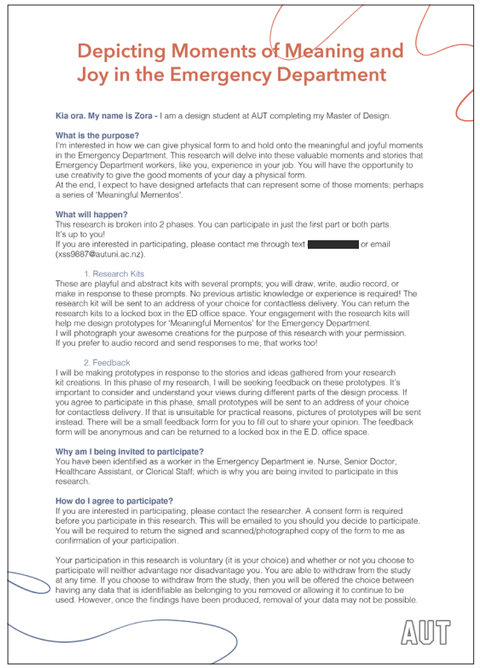
If you have any questions or queries, please contact me at: xss9887@autuni.ac.nz

Or my supervisors:
Dr Johanne Egan:
johanne.egan@waitematadhb.govt.nz

Dr Ivana Nakarada-Kordic:
ivana.nakarada-kordic@aut.ac.nz

AUT

Participant Information Sheet



Depicting Moments of Meaning and Joy in the Emergency Department

Kia ora. My name is Zora - I am a design student at AUT completing my Master of Design.

What is the purpose?
I'm interested in how we can give physical form to and hold onto the meaningful and joyful moments in the Emergency Department. This research will delve into these valuable moments and stories that Emergency Department workers, like you, experience in your job. You will have the opportunity to use creativity to give the good moments of your day a physical form.
At the end, I expect to have designed artefacts that can represent some of those moments; perhaps a series of 'Meaningful Mementos'.

What will happen?
This research is broken into 2 phases. You can participate in just the first part or both parts.
It's up to you!
If you are interested in participating, please contact me through text [redacted] or email (xss9687@autuni.ac.nz).

1. Research Kits
These are playful and abstract kits with several prompts; you will draw, write, audio record, or make in response to these prompts. No previous artistic knowledge or experience is required! The research kit will be sent to an address of your choice for contactless delivery. You can return the research kits to a locked box in the ED office space. Your engagement with the research kits will help me design prototypes for 'Meaningful Mementos' for the Emergency Department.
I will photograph your awesome creations for the purpose of this research with your permission.
If you prefer to audio record and send responses to me, that works too!

2. Feedback
I will be making prototypes in response to the stories and ideas gathered from your research kit creations. In this phase of my research, I will be seeking feedback on these prototypes. It's important to consider and understand your views during different parts of the design process. If you agree to participate in this phase, small prototypes will be sent to an address of your choice for contactless delivery. If that is unsuitable for practical reasons, pictures of prototypes will be sent instead. There will be a small feedback form for you to fill out to share your opinion. The feedback form will be anonymous and can be returned to a locked box in the E.D. office space.

Why am I being invited to participate?
You have been identified as a worker in the Emergency Department ie. Nurse, Senior Doctor, Healthcare Assistant, or Clerical Staff; which is why you are being invited to participate in this research.

How do I agree to participate?
If you are interested in participating, please contact the researcher. A consent form is required before you participate in this research. This will be emailed to you should you decide to participate. You will be required to return the signed and scanned/photographed copy of the form to me as confirmation of your participation.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

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What are the discomforts and risks?
There is minimal discomfort and risk anticipated with this research. However, should you experience any discomfort, you may withdraw at any point.

What are the benefits?
There is an opportunity for you to share your valued perspective on joyful and meaningful moments as an Emergency Department worker. I have the fortunate chance to research how we can preserve these moments through materialising them. Design for health research has been patient-focused, this research is a step in a design for healthcare workers path.

As Emergency Department workers, you will provide me with invaluable information and insight towards my design research. In return, I hope the artefacts I design as a response provide physical representations and reminders of moments that boost energy, inspire a sense of meaning, or bring joy in the Emergency Department.

How will my privacy be protected?
You will be known to myself (the researcher) but you will not be identified in the research outputs. Any identifying information will be removed and your identity and information will remain confidential. If you have consented and sent an audio-recording, it will be destroyed upon transcription to maintain your anonymity.

What are the costs of participating in this research?
The cost of participating will be your time to provide written, drawn, built, and/or verbal responses.

What opportunity do I have to consider this invitation?
You should take up to two weeks to consider this invitation.

Will I receive feedback on the results of this research?
At the completion of the research, I can provide you with a summary of the research findings if you would like me to do so. This can be indicated on your consent form.

The findings of this research may also be used for academic publications and presentations.

What do I do if I have concerns about this research?
Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisors,

Dr Johanne Egan: johanne.egan@waitematadhb.govt.nz

Dr Ivana Nakarada-Kordic: ivana.nakarada-kordic@aut.ac.nz

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, ethics@aut.ac.nz , (+649) 921 9999 ext 6038.

Whom do I contact for further information about this research?
Please keep this Information Sheet for your future reference. You are also able to contact the research team as follows:

Researcher Zora Situ: xss9887@autuni.ac.nz

Project Supervisor Dr Johanne Egan: Johanne.egan@waitematadhb.govt.nz

Project Supervisor Dr Ivana Nakarada-Kordic: ivana.nakarada-kordic@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 11/10/21, AUTEC Reference number 21/287

Appendix 3

Video interview questions

- Can you walk me through your journey to a career in the ED?
- How have your motivators deviated since you began working at the ED?
- Could you describe an ideal break at work?
- Can you talk me through the artwork for *'why do you do what you do'* and *'a cherished moment'*?