Social Vulnerability in Disasters:

Accessibility to the Needle Exchange Programme for People Who Inject Drugs

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ABSTRACT

Disasters can create and exacerbate existing health disparities. This thesis foregrounds the marginalised voices of people who inject drugs (PWID) on the West Coast of the South Island, Aotearoa New Zealand, to afford critical insight into the social elements that uphold and reinforce disproportionate health care accessibility in disaster settings. Specifically, this thesis explores accessibility to the Needle Exchange Programme (NEP), a life-enhancing social service supporting PWID to obtain clean injection products that reduce the risk of contracting blood-borne viruses (BBVs) and other harmful health effects. NEPs are peer-led and offer psychosocial support, making the service an empowering and judgement-free space for PWID. Given the importance of NEPs, the research asks: What elements enable and hinder accessibility to NEP services in disaster settings for PWID? The research particularly focused on understanding how stigma influences accessibility to NEP services during a disaster or emergency. To address these questions, interpretive phenomenological analysis and social stigma theory is applied. This methodology provides a detailed analysis of the experiences and perceptions of 14 participants, comprising of one NEP staff member and 13 PWID. The findings reveal that social vulnerability for PWID is upheld and reinforced by a complex network of psychological, social, and structural mechanisms. Accessing safe equipment in disaster situations requires PWID to adopt preparedness and proactiveness behaviours, access to psychosocial support from peers and NEP staff, and resilient social and environmental infrastructure. Prevailing barriers include the cost of injecting equipment, even though it is highly subsidised, and road networks that are vulnerable to natural hazards. Additionally, social stigma prevented PWID from feeling comfortable picking up NEP products in public locations, including NEP-based pharmacies and emergency centres. These findings substantiate earlier vulnerability research efforts foregrounding the social needs of people facing disproportionate social barriers in disasters. Moreover, these barriers reflect systems of power that ordinarily uphold social exclusion and access to health care, which continue in emergencies. This thesis reveals strategies to overcome some of these barriers by providing a strategic map to guide inclusive emergency management practices and other forms of accessibility to ensure the wellbeing of PWID in the Aotearoa New Zealand disaster landscape.

ACKNOWLEDGEMENTS

When I began this thesis in early 2020, I originally proposed to study the experiences of People Who Use Drugs (PWID) during disasters. However, as the COVID-19 pandemic evolved, it quickly became apparent that this human-induced disaster was more severe than expected. Naturally, COVID-19 was integrated into this thesis, and throughout the last year and a half, the world has undergone enormous changes. Whilst equity is always important, particularly in times like these, it is important to make sure no one is left behind, especially those with less social and relational power. To the following people, I am very grateful for their contributions, support, and love throughout this process:

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ABBREVIATIONS

CDEM	Civil Defence Emergency Management
CHP	Critical Health Psychology
COVID-19	*C*oronavirus Disease 2019
HBV	Hepatitis B
HCV	Hepatitis C
HIV/AIDs	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
HP	Health Psychology
IPA	Interpretive Phenomenological Analysis
OST	Opioid Substitution Treatment
NDRS	National Disaster Resilience Strategy
NICHE	Nelson Injecting Community Health Enterprise
NEMA	National Emergency Management Agency
NEP	Needle Exchange Programme
NZNEP	New Zealand Needle Exchange Programme
PWID	People/Person Who Inject(s) Drugs
PWUD	People/Person Who Inject(s) Drugs
PWUDs	People/persons who use drugs

OUTLINE

Continued accessibility to sterile injecting equipment and other services offered by the Aotearoa New Zealand Needle Exchange Programme (NEP) ensures the reduction of harm associated with injection use and a place where People/Person who inject(s) drugs (PWID) [1] feel accepted. This thesis explores the social elements that uphold and reinforce disproportionate health care accessibility in disaster settings. In doing so, the research asks: What elements enable and hinder accessibility to NEP services in disaster settings for PWID? Moreover, is stigma perceived as having a role in NEP service accessibility in disasters for PWID? The following chapters set out to answer these questions:

Chapter 1- Chapter 1 provides the background and rationale for the study, identifying people with less social and financial resources in society as disproportionately vulnerable to harm in disaster settings compared to people with more social power; thereby potentially further preventing PWID from accessing necessary health-sustaining resources, such as clean injecting equipment.

Chapter 2- Explores the environmental and human-generated risks on the West Coast of the South Island, Aotearoa New Zealand, including flooding and COVID-19. The second half of the chapter also introduces the social vulnerability, risk, and elements that can disproportionately affect PWID during disasters and potentially threaten accessibility to NEP services.

Chapter 3- Introduces the research methodology, Interpretive Phenomenological Analysis (IPA). IPA allows the researcher to engage in a deeper level of analysis beyond surface-level descriptions, and meaningful insight into the social elements that are relevant to accessibility for PWID, including social stigma. Social stigma theory is explained due to its key role in the knowledge produced in this thesis. Researcher reflexivity and considerations are also discussed.

Chapter 4 and 5- Represent the analytical body of the thesis. This section provides an in-depth exploration of PWID experiences of accessing NEP products, such as sterile injecting equipment in a disaster. It analyses various social areas as represented at different scales: psychological, social, and structural levels.

Chapter 6- Contextualises the findings identified in the analysis and links them to previous literature. It includes a discussion about the social aspects relating to risk vulnerability for PWID, and ways to rectify access inequalities in order to move toward equity in health and disaster care for all.

[1] Whilst some controversy exists around the use of this label, it is used in this text with the utmost respectful intentions in place of more pejorative labels (e.g. druggie or addict) (White, 2001).

CHAPTER 1 - DISASTER VULNERABILITY AND HEALTH ACCESSIBILITY

LOCATING THE STUDY

This study sits at the intersection between access to health care, such as needle exchange services, marginalised groups like PWID and disasters settings, including earthquakes, floods, and pandemics. As such, it is necessary to trace the many and diverse social and political elements that contribute to the social determinates of health for PWID, as outlined in this study and beyond. This chapter begins by outlining health accessibility and its relationship to social vulnerability in disasters. It then outlines PWID and the importance of needle exchange services to health and wellbeing.

SOCIAL VULNERABILITY AND HEALTH ACCESSIBILITY

Accessibility to health care is a human right (The United Nations, 1948), yet people on the margins of society are likely to face more barriers to accessing health care services caused by social, political, material, psychological and structural vulnerabilities. This includes PWID. Natural hazards and human-initiated disasters and emergencies can exaggerate people's daily hardships and disproportionately amplify health disparities, especially for minority groups like PWID (Bolin & Kurtz, 2018; Hoffman, 2008; Krol et al., 2007; Mack et al., 2007; Mensah et al., 2005; Phifer, 1990; Shultz et al., 2005; Straker & Finister, 2007; Zakour & Harrell, 2004). Health accessibility in this research refers to the inclusion of people who are disadvantaged and have reduced ability to "reach and obtain appropriate health care services in situations of perceived need for care" (Levieque et al., 2012, p. 4). Health accessibility is influenced by the contextual surroundings of a person, including their material or financial deficits; this is also understood as social vulnerability (Penchansky & Thomas, 1981).

Social vulnerability can materialise in many forms, for example, social stigma, unstable housing, poverty, discrimination, and the absence of political voice (Miller-Lloyd et al., 2020; Penchansky & Thomas, 1981; Whitehead & Dahlgren, 2006). Whilst broadly recognised as social vulnerability, the relationship between minority groups, stigma and a lack of social resources is controversial since not all marginalised people who use drugs lack material resources (Room, 2005). This is also true the other way; not all who are poor experience stigma or marginalisation (Room, 2005). Furthermore, there is not necessarily a relationship between people who use substances and stigmatisa or marginalisation. Nevertheless, it is broadly accepted that minority groups have fewer social resources than those more powerful in

society, representing an unequal distribution of power (Cullen & Pretes, 2000). To illustrate, in Aotearoa New Zealand, minorities groups, including ethnic minorities (i.e., people of Māori and Pasifika ethnicities) (Hikaka et al., 2021; Lawson-Te Aho et al., 2019; Mulholland & McIntosh, 2011), and PWID often face disproportionate barriers to accessing health care in society and are commonly attributed to stigma, discrimination, and poverty (Lancaster et al., 2020; Gibson, 2016; Motavalli, 2021; Miller-Lloyd et al., 2020). Vulnerability needs to be recognised as layers that can be added and removed. Different groups of people have divergent access to resources, even within minority groups.

In a disaster or emergency context, the distribution of resources is often prioritised for those who already have more resources, which makes it more difficult for people with pre-existing (e.g. social, material and political) vulnerabilities to prepare, be resilient to, and recover from emergencies (Aldrich, 2012). These sorts of practices further trap people with vulnerabilities into cycles of poverty (Azaridis & Stachurski, 2005). Furthermore, people who are politically marginalised often lack recognition, representation, and social security (Walters & Gaillard, 2014), which can be reflected in the distribution of resources for disaster preparedness messaging, and relief (Cuny, 1994; Middleton & O'Keefe, 1998). The specific social vulnerabilities that pertain to PWID are elaborated on in Chapter 2.

REFRAMING DISASTERS

Considering that sociocultural elements, such as the distribution of resources, can significantly influence risk vulnerability, scholars should frame disaster risk as more than accidents or purely environmental phenomena that occur beyond society's usual functioning (Cardona, 2011; Hewitt, 1983; Wisner & Luce, 1993). For example, Brauch and colleagues (2011, p.114) astutely contend that vulnerability to the impact of disasters is related to one's resources from society and the environment:

> *Vulnerability of human settlements and ecosystems [are] intrinsically tied to different sociocultural and environmental processes, but it is also related to the fragility, the susceptibility or the lack of resilience of the exposed elements, both from society and environment […] Thus, degradation, poverty, and disasters are all expressions of environmental problems and their materialisation is a result of the social construction of risk*

By conceptualising disaster vulnerability as a social phenomenon, vulnerability to the effects of disasters, can be broken down into three elements: the disaster itself, resilience, and social fragility. The disaster itself refers to the link between vulnerability and exposure to the disasters event and the susceptibility of being affected by it (physical fragility of the individual). Lack of resilience implies that people might have an inability to cope and may struggle to adapt and respond to the

socioecological and economic impact of the event because of limitations in accessing resources (Cardona, 2011). This includes the potential inability of PWID to access health care services. Social fragility refers to the predisposed harm people may suffer due to relatively disadvantageous conditions or social injustice and vulnerability. Cardona (2011 p.10) stated that to analyse vulnerability as part of larger patterns in society, it is important to "identify the deep rooted and underlying causes of disaster vulnerability and the mechanisms and dynamic processes that transform these into insecure conditions". Cardona (2011) championed the need to deconstruct vulnerability to allow a more holistic approach to vulnerability based on earlier holistic approaches to evaluating risk (e.g. Wilches-Chaux, 1989). In other words, a deconstructive approach allows us to recognise the underlying mechanisms that transform social conditions into insecure conditions during disasters by for instance, hindering access to health care through the distribution of resources among different groups of people.

Considering this thesis is focused on PWID because of their unique and specific health needs during a disaster, the following section introduces the harm-reduction health service, the Needle Exchange Programme (NEP) as a necessary service for PWID health and wellbeing. NEP is a highly successful harm reduction programme that supports the empowerment of PIWDs, meeting them where they are in their lives, non-judgementally and with care.

THE NEEDLE EXCHANGE PROGRAMME

NEPs in Aotearoa New Zealand, offer a judgement-free space for PWID to receive health care to reduce the immediate and long-term health and social implications of injecting drug use. Access to this service is considered essential for the wellbeing of PWID (World Health Organisation [WHO], 2009). NEPs aim to reduce blood-borne viruses, injection-related injuries and to provide social support (Aitkin, 2002). NEPs provide a place for people to buy sterile injecting equipment at little or no cost, and also provide a place for people to discard used equipment in a safe and risk-free manner. A large part of the NEP involves providing social services that are free from judgment and that are empowering and supportive of clients' needs. This includes information on the safe use of drug injecting equipment and referrals to other health services (i.e. doctor or alcohol and drug services). NEPs principles are broadly based on Ottawa Charter of Health Promotion, which is a 1986 multi-nation agreement organised by the World Health Organisation (World Health Organisation [WHO], 1986). The Charter aimed to raise public health standards, including creating anti-oppressive processes, including enhancing community participation and empowerment (WHO, 1986).

The first NEPs emerged in Europe during the 1980s to control emerging blood-borne virus outbreaks, such as Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDs) (Vlahov et al., 2001). The success of these initial NEPs, in actually reducing blood-borne virus rates, stimulated the rapid global adoption of NEPs (Vlahov et al., 2001). For instance, in 1986, both Britain (Torrance, 2009), Sweden and Australia (Rhodes, 2009) started NEP based harm-reduction programmes. The following year (1987), Aotearoa New Zealand followed this trend by passing a law legalising the public sale of needles and syringes by authorised representatives (e.g. pharmacies and medical practitioners). This law was called the Health (Needles and Syringes) Regulations 1987 (later replaced by the Health Needles and Syringes Regulations 1998) (Aitken, 2002; Sheridan et al., 2005). This law and the blood-borne virus threats (HIV/AIDs) drove Aotearoa New Zealand to open their first NEP in 1987, which turned into five in 1988: one each in Auckland, Christchurch, Palmerston North, Dunedin, and Wellington (Aitken, 2002). Over the years, the NEP client numbers have increased significantly. In 1988, NEP sold approximately 100,000 needles per year, compared to 2020, when NEPs distributed roughly 3 million needles per year. Along with client increases, the outlets have expanded too: as of 2021, there are 21 stationary exchanges, 197 pharmacy-based NEPs, alternate outlets and two mobile exchange programmes (New Zealand Needle Exchange Programme [NZNEP], 2021).

STERILE EQUIPMENT

Arguably, one of the NEPs most vital services is the provision of sterile injecting equipment. The range of equipment offered (see Figure 1 to 4) varies between outlets, but frequently offered items include needle ends, syringes, butterflies, and wheel filters (NZNEP, 2021a). Wheel filters attach to the end of syringes and purify liquids such as methadone, by removing harmful particles (including bacteria) that could serious health issues (Keijzer & Imbert, 2011). Other important equipment items are butterfly needles, which are designed to access superficial veins near the surface of the skin and are thereby less likely to cause nerve injury or vein collapse (Ohnishi et al., 2012). Commonly purchased items include sterile water, alcohol wipes, filters, condoms, and swabs (Sheridan et al., 2005; Needle Exchange Services Trust, 2009). NEPs are 80% funded by the Aotearoa New Zealand government (the Ministry of Health), who allocate 5.1 million dollars per year to the subsidising of equipment (NZNEP, 2021). Most equipment costs between one and four NZD (see Figures 1 to 4 below for examples of equipment). There are also items available for free as part of the one-for-one initiative. One-for-one allows clients to access a free 3ml syringe (and most needles) for every returned used needle and syringe (Anderton, 2004). One-for-one is available in all NEP outlets, not just stationary ones (roughly 80% of outlets participate) (Lauzon, 2010). The one-for-one

scheme seems to be working given the associated increases in equipment distribution and decreases in equipment re-use (Aitken, 2002).

Figure 1

Needle 27 ½ Gauge

Note. 27 guage x 1 1/2 inch needle. Sold on the NZNEP website for 0.10 NZD

Figure 2

5ml Syringe

Note. BD 3ml Syringe. Sold on the NZNEP website for 0.40 NZD

Figure 3

Blue Wheel Filter

Note. 0.2 Micron filter (Blue). Sold on the NZNEP website for 1.50 NZD

Figure 4

Butterfly

Note. 25 guage x 3/4 inch Butterfly Sold on the NZNEP website for 1.00 NZD

Access to sterile equipment is beneficial for PWID as it reduces the likelihood of PWID sharing or reusing drug injecting equipment both of which behaviours are associated with damaging physiological illnesses/diseases. Reusing drug injecting equipment can cause needles to go blunt and increase the risk of injection-related injuries and infections, such as abscesses, septicaemia, nerve damage, lumps/swelling, ulcers, track marks/bruising, and soft tissue injuries (Neale, 2002). Furthermore, sharing equipment can transmit contaminated blood and pass on blood-borne viruses that can cause critical health conditions. These include Hepatitis B (HBV), Hepatitis C (HCV), and Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDs). Both HBV and HCV, when acquired, can slowly damage the liver over many years, often progressing from inflammation to permanent and irreversible scarring (cirrhosis) (Calvaruso et al., 2018; Chu & Liaw, 2006). Both HBV and HCV can develop into more fatal conditions, including liver cancer and liver failure and mortality (Chu et al., 2006; Westin et al., 2020).

The other blood-borne virus NEPs aim to prevent is Human Immunodeficiency Virus (HIV). Global HIV infection rates have dropped significantly in the last 30 years due partly to NEPs (Aitken, 2002; Davis et al., 2017). HIV is significant because patients infected with HIV can develop AIDs, a chronic, potentially life-threatening condition that attacks the immune system (Kirch, 2008; Sepkowitz, 2001). No cure exists for HIV, but strict adherence to antiretroviral regimens (ARVs) can slow the disease's progress and prevent secondary infections and complications (Benson et al., 2009). The literature shows that NEPs effectively reduce the prevalence and incidences of HIV infections among PWID as the provision of clean injecting equipment reduces the risk factors for sharing used equipment, and thereby blood-borne viruses (Aitken, 2002; Davis et al., 2017; Fernandes et al., 2017; Raboud et al., 2003).

PEER SUPPORT

Besides equipment, NEPs provide social support for PWID. This social support is founded on the philosophy of empowering PIWD and meeting them where they are in their lives in non-judgemental and caring ways. NEP staff offer advice and information on safe injection practices, sexual health, unsafe equipment disposal, and overdose (and strategies to prevent it). Additionally, staff offer information to improve injection and vein care, encouragement of General Practitioner (GP) visits and health checks and transferring clients to other health services where necessary, such as alcohol and drug services (AOD) or Opioid Substitution Treatment (OST). Integral to the social arm of NEPs are the peer-based workers, which means as a peer-based service, NEP staff mostly have experience with injecting or using drugs. Advice and support from people with lived experience encourages an unconditional and stigma-free environment. The peer-based approach to NEPs is associated with a sense of trust within the organisation, lower levels of depression and anxiety scores,

greater satisfaction with life, and higher health-related information exchange between service providers (Hay et al., 2017).

Another key part of the NEP practices and principles, is that service use is confidential. The New Zealand Needle Exchange Programme (NZNEP), the national body overseeing the NEPs, takes the privacy of clients seriously by respecting clients' personal information as dictated by the Privacy Act (1993, 2019). NEP adheres to these privacy principles in relation to holding, using, disclosing, and destroying clients' personal information (NZNEP, 2021c). All the equipment is packaged to be discreet and has no signage; there is no branding on any outreach vans or online orders and deliveries. Anonymity is prioritised in all NEP distribution services, including the online website, which allows people to make anonymous online orders without the need to register an account and uses discreet billing references on bank transactions, for example: 'Shop18a'. The website or online webstore was opened during the COVID-19 pandemic, allowing people to have stock orders couriered to minimise or avoid human interaction (Fuseworks, 2020). As mentioned, there are different types of outlets; the difference between these outlets is briefly described in the following section.

OUTLETS

The stationary NEP exchanges (aka dedicated needle exchange services) mostly offer a full range of drug injecting equipment: including different syringe and needle sizes, butterflies, sterile water; most items cost less than five dollars. However, there is also a free range of equipment as part of an initiative called one-for-one. Stationary outlets are mostly staffed by peer-support workers or people who are knowledgeable about drug use and offer advice and referrals to other health services (Fuseworks, 2020). These exchanges are located in larger towns or cities. All stationary exchanges also offer courier delivery of injection products throughout Aotearoa New Zealand. Users pay for the items, although postage is free and accompanied by printed educational material (Aitken, 2002). Pharmacies also act as exchanges by providing NEP coverage, but often on a smaller scale. There are 197 pharmacy-based NEPs throughout Aotearoa New Zealand, that are particularly essential to providing NEP coverage in the smaller centres and rural communities that do not have stationary exchanges (Heller & Paone, 2011).

Alternate outlets are where NEP services are offered by commentary health-based community services, for example, sexual health centres or the NZPC: Aotearoa New Zealand Sex Workers' Collective (formerly known as the New Zealand Prostitutes' Collective) (NZNEP, 2021). Mobile outreach services (outreach services) are van-based exchanges that cater to rural communities and deliver equipment to people's homes. The outreach service is particularly relevant to this research as the people interviewed for this research primarily use the outreach service to access their drug-using equipment. The outreach service is discussed in more detail in the

following chapter. PWID can also make use of the online store (www.nznep.org.nz), which launched in response to the COVID-19 level 4 lockdown. The store enables PWID to virtually purchase equipment whilst adhering to distancing policies (Fuseworks, 2020).

THE NEP CLIENTELE

NEPs are available to anyone over the age of 16 and sell more than 3 million needles in total (NZNEPb, 2021). Needles are used for both recreational drug use as well as medicinal drug use, such as methadone. Injecting equipment is most commonly used for methamphetamine (30%), methadone (24 %), morphine (18%), methylphenidate (14%), performing enhancing drugs (8%), and other drugs (6%) (C. Brough, personal communication, February 20, 2021).

NEP ON THE WEST COAST

The case-specific area for this research is the West Coast of the South Island, Aotearoa New Zealand. The West Coast region is situated to the west of the Southern Alps. Principal towns on the West Coast are Hokitika, Greymouth, and Westport. This region is one of the most remote and sparsely populated areas of Aotearoa New Zealand, with an estimated population of 32,400 as of June 2020: Hokitika (2,920), Greymouth (8,170), and West Port (4380) (Statistics New Zealand [Stats NZ], 2020). Overall, the West Coast population is a mere 0.6% of Aotearoa New Zealand's overall population (Stats NZ, 2020). As a sparsely populated region, the West Coast does not have a stationary NEP exchange. Instead, people living on the West Coast can access NEP equipment via the two NEP-participating pharmacies and the outreach service. One pharmacy is based in Westport, and the other in Greymouth both of which, as mentioned, offer a small range of injecting equipment. Both participate in the one-for-one initiative and thereby provide West Coast PWID an opportunity to drop off used NEP products in exchange for new equipment (NZNEP, 2021).

The outreach service operates from a stationary exchange based in Nelson, called the Nelson Injecting Community Health Enterprise (NICHE). The outreach service travels from Nelson once per month to deliver injecting equipment to Westport, Greymouth and Hokitika, over two days. Typically, on Tuesdays, NEP staff send NEP service users a text to alert them that the outreach van will be in town on Thursday and asks them to express interest if they need equipment. Typically, around thirty clients reply asking for equipment. Then, on Wednesday afternoon, the outreach service travels from Nelson to Westport to begin the run in Westport on Thursday morning. The following day (Friday), the outreach service delivers equipment to clients in Greymouth and Hokitika. The outreach service offers service users the same resources as in a stationary outlet. These resources include safe disposal of used equipment (brought back to Nelson for destruction), one-for-one exchange of 3ml syringes and most needles, as well as purchasable items. The

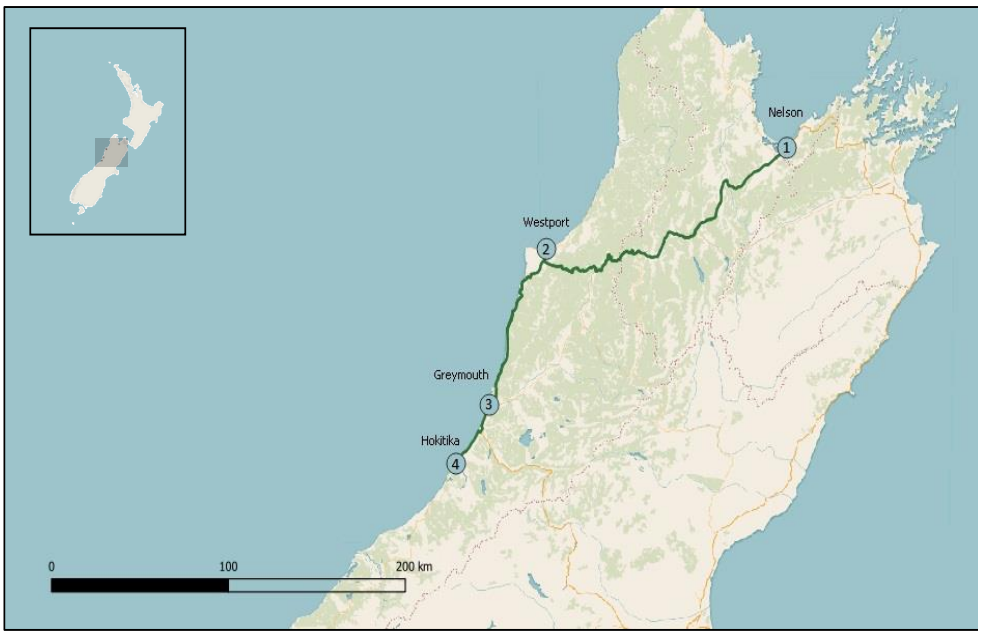
outreach service also offers support, advice, and referrals to the appropriate, relevant services, including up-to-date information and education on safer drug use, and information on blood-borne viruses (Hepatitis B, C and HIV).

SECONDARY SERVICES ON THE WEST COAST

Besides the outreach service and NEP-participating pharmacies, secondary NEP distribution systems are also available to NEP clients living on the West Coast, including a key contact system, a courier service, and an online store. PWID living in the Westport regions can also access NEP products via the key contact system, a social network-based distribution system, whereby a few designated PWID are given equipment to distribute around their community (Dechman, 2015; Parker et al., 2012). Key contact systems can complement outreach services as they can reach wider networks than the outreach service, thereby effectively catering to hard-to-reach PWID (Dechman et al., 2015; Parker et al., 2012). In Aotearoa New Zealand, the West Coast region has the only key contact system. Key contact distributers are supplied with free one-for-one equipment by the outreach service staff; this includes 3ml syringes and a range of needles distributed from their homes (C. Brough, personal communication, April 20, 2020). As previously mentioned, the courier service is another way this community can access equipment. West Coast clients can order gear from the Nelson-based NEP (NICHE), which will only charge for the product cost. Items are packaged and courier-delivered to the West Coast (Aitken, 2002; C. Brough, personal communication, April 20, 2020). Lastly, Westport clients can also use the online store (Fuseworks, 2020; NZNEP, 2021a).

Figure 5

West Coast Mobile Outreach Service Route



Note. This is a map of the South Island of Aotearoa New Zealand showing the West Coast Mobile Outreach Service Route which follows the State Highway 6 from Nelson to Westport, to Greymouth, and then to Hokitika.

CHAPTER 2 – DISASTERS

In this chapter, disasters and how they can disproportionately affect access to NEP services are explored. In the first half of this chapter, specific risks to the West Coast, such as flooding and COVID-19, are discussed. In the second half of this chapter, relevant social elements of PWID that threaten access to NEP for PWID in disasters are also presented.

DISASTER RISK IN AOTEAROA NEW ZEALAND

Disasters, in this thesis, refers to both natural hazards (i.e. earthquakes, tsunamis, floods, landslides, storms, volcanic activity, and pandemics) and human-generated disasters (i.e. terrorist attacks, oil-spills, disposal of toxic waste and pandemics). Aotearoa New Zealand is highly vulnerable to natural hazards due to its geographical location. Both the North and South Island sit over the Ring of Fire subduction zone (where the Pacific and Australian tectonic plates subduct), which can cause increased seismic, volcanic, and hydrothermal activity (Hinga, 2015). Furthermore, the North and South Islands are positioned in the 'roaring forties' weather system. Westerly winds contribute to frequent extreme weather events: heavy rain, winds, and storms (Safaei Pirooz et al., 2019).

Flooding events are the most common natural hazard in Aotearoa New Zealand, but earthquakes and tsunamis are likely to have the most disruptive impact (King & Bell, 2006). Both these types of natural hazard events occur relatively often, in recent years, these have included the Canterbury earthquake sequence (2010-2012) (Beavan et al., 2010), the Seddon earthquake (Apr 2015), the Kaikōura earthquake (Nov 2016) (Yazdanian et al., 2020), Cyclone Debbie and the Edgecumbe floods (Apr 2017) (Cogan et al., 2018) and ex-tropical Cyclones Gita and Fehi (Feb 2018) (Clarke, 2018)[2]. Each of these events have occurred with enough intensity to cause substantial damage and, in some events, loss of life, with the most destructive being the 2011 Christchurch earthquake where 185 people lost their lives (New Zealand Police, n.d.).

The risks associated with natural hazards are expected to increase as natural hazards are increasing in frequency and intensity due to climate and environmental changes associated with anthropogenic global warming (Keiler et al., 2010). In the last decade, there have also been numerous harmful human-generated disaster emergencies, for instance, the Nelson/Marlborough Bushfires (Feb 2019), the

[2] In this thesis, I draw on grey literature for local natural-hazard and human-generated disasters such as this.

Christchurch terrorist attack (Mosque Shooting) (Mar 2019), and recently the ongoing coronavirus pandemic (COVID-19) (Feb 2020 in Aotearoa New Zealand).

EMERGENCY MANAGEMENT IN AOTEAROA NEW ZEALAND

In Aotearoa New Zealand, emergencies are largely managed by the National Emergency Management Agency (NEMA) (formally known as the Ministry of Civil Defence Emergency Management (CDEM). NEMA is a business unit that sits within the Department of Prime Minister and Cabinet. One of NEMAs roles is to distribute preparedness imperatives through a range of policies and plans. For example, the Civil Defence Emergency Plan 2015 implores non-government agencies, emergency services, as well as central and local governments to engage in harm reduction focused emergency management (Ministry of Civil Defence and Emergency Management, 2006). Another key emergency framework is the National Disaster Resilience Strategy (NDRS) (Ministry of Health, 2019). This 10-year strategy, implemented in 2019, outlines key goals and initiatives to guide Disaster Risk Reduction/Disaster Risk Management (DRR/DRM) stakeholders to achieve a resilient nation (Ministry of Civil Defence & Emergency Management, 2019). The NDRS is also based on harm-reduction philosophies and is aligned with the SENDAI framework. The SENDAI Framework for Disaster Risk Reduction (SFDRR), produced by the United Nations Disaster Risk Reduction (UNDRR, n.d.), aims to guide the multi-hazard management of disaster risk using an integrated approach to respond to and recover from disasters.

Another overarching model used to guide emergency management in Aotearoa New Zealand, is the '4Rs' of emergency management model. The 4Rs consist of four different stages of an emergency (reduction, readiness, response, and recovery) (Ministry of Civil Defence & Emergency Management, 2019). Reduction aims to minimise the long-term risks associated with human life and property from hazards, and where practicable, taking steps to eliminate these risks. Readiness involves preparedness actions by ensuring there are appropriate plans or strategies in place for emergency services and operational systems should a disaster happen. This includes response programmes for the public. In Aotearoa New Zealand, the public is encouraged to prepare emergency kits that store basic survival equipment such as torches, blankets, food, water and other gear that might maximise resilience in emergencies. Such response involve the actions taken immediately before, during or directly after an emergency. Recovery concerns the immediate, medium-term and long-term regeneration of a community after an emergency (Ministry of Civil Defence & Emergency Management, 2019). While these stages are separated to enable actions to be taken, they are complex and interrelated; that is, they do not exist in isolation and actions or processes in one stage will have implications in another

stage. Nevertheless, this research broadly focuses on the readiness or preparedness actions of PWIDs, as well as how accessible drug-using equipment is during a disaster; as such, this research involves both readiness and response-phase of an emergency.

NATURAL HAZARDS AND RISKS ON THE WEST COAST

Environmental risks associated with disasters depend on a location's specific environment and time. The West Coast region consists of low-lying plains adjacent to mountains, a large area of native bush and two large bodies of water: the Buller River and the Tasman Sea. The Buller River runs 170 kilometres from Lake Rotoiti through the Buller Gorge into the Tasman Sea and has one of the highest flows of any river in the country, which is over 14,000 cubic metres per second (Carroll, 2020). The region experiences high rainfall due to its location next to the Southern Alps and prevailing north-westerly winds (Davies et al., 2011). Moreover, the West Coast is situated near the boundary of two major tectonic plates (the Australian and the Pacific), intersected by the Alpine Faultline, creating a likelihood of earthquakes in this area (Orchiston et al., 2016). The other two main risks relevant to this study are flooding events and COVID-19. Both of these events occurred while undertaking this research.

FLOODING AND NEP IMPACT

Flooding events are particularly common on the West Coast and pose a major obstacle for PWID to access to NEPs. The compounded factors of low-lying ground, limited flooding protection, high rainfall, and being situated near two large bodies of water make flooding events and frequent coastal erosion (Carroll, 2020). In 2018, for instance, the combination of ex-cyclone Fehi and a king tide caused road slips, high winds, flash flooding, sea wall damages, power outages and evacuations throughout the West Coast (Lee, 2018). This event caused over 5.7 million dollars in damage to residential properties (Lee, 2018), and while this does not account for the social costs, it highlights the significance of the impact. Disasters, such as floods, directly and indirectly, prevent access to NEPs. The Buller River is situated next to main State Highway 6; when it floods, the main access route to the West Coast is either inaccessible or unusable. No transport can get in or out. NEP staff are unable to travel to the West Coast, and people are unable to leave once they have been flooded in. When the main arterial route is blocked, access to the pharmacy-based NEPs are also blocked. Indirect effects occur when people with little financial or material resources require extra money or incur extra expenses or care to access such health care services. How these events might prevent PWID from accessing NEPs will be discussed in Chapter 3, and as mentioned previously, the frequency and intensity of

river-bank flooding and coastal erosion are predicted to increase with climate-change-related events.

Besides natural hazards, human-generated disasters also impact NEP service users. While the initial design of this study aimed to understand the impact of flooding or other natural hazard-related disaster events for PWID access to NEPs on the West Coast while carrying out this research, the COVID-19 pandemic hit, and as a consequence, the research also explores how this pandemic affected access to safe and clean drug-using equipment. As such, an overview of COVID-19 in Aotearoa New Zealand follows.

COVID-19

COVID-19 is recognised as a human-initiated disaster that impacted Aotearoa New Zealand's "team of five million" and beyond (Anderson, 2020; Tso, 2020). COVID-19 is a viral infection that everyone is at risk of contracting, but something people with existing respiratory conditions or weaker immune systems, such as older adults and potentially PWID, are at a higher risk of (Zhu et al., 2020). COVID-19 mostly infects the airways, affecting the respiratory tract, which can cause acute lung failure. It can also cause respiratory distress, severe pneumonia, and mortality (Wu et al., 2020). It has been associated with systemic damages (also called multi-organ tropism), which harm the liver, kidney, and nervous system. However, the specific mechanisms of this are not yet known (Spuntarelli et al., 2020).

COVID-19 was first identified as a novel virus from the family of six coronaviruses that infect humans in December 2019 in China (Lai et al., 2020; Zhu et al., 2020). Infection rates grew exponentially from 9976 worldwide infections in January 2020 to over three million in April 2020. COVID-19 was declared a pandemic by WHO by March 2020.

Whilst international infection numbers were rising, Aotearoa New Zealand being an isolated island nation, did not contract its first infection until February 28, 2020. As expected, with a virulent infection, following the first infection, numbers steadily increased. The Aotearoa New Zealand government's response was rapid and proved effective. By 25th March 2020, an emergency epidemic notice came into effect, and a national state of emergency was announced by the NEMA (Jefferies et al., 2020). To eradicate further spread of the virus, and with the power of the national state of emergency, the government announced a four-level alert system, which enforced increasingly strict social distancing measures on the public (level 1 being less restrictive, and level 4 are more restrictive measures) (Baker et al., 2020). Alert Level four involved a nationwide lockdown. All public spaces and businesses were closed; people were told to stay at home and maintain safe physical distancing. Only businesses or services categorised as essential, and emergency services and utilities and goods transport services remained open (Biddle, 2020).

The restrictions caused various barriers to NEP service accessibility for PWID, eventhough in Aotearoa New Zealand, the NEP was regarded as an essential service which meant that NEP was able to continue operating throughout all levels, alongside other health and emergency services. Even though NEPs were declared an essential service, the West Coast outreach service was instructed (by higher management) to hold off on the outreach run by a week during the level four lockdown period (which lasted for four weeks from 25th March 2020 – 27th April 2020). Since the outreach service normally only travels to the West Coast once every four weeks, this meant that there was one week during this time where clients were unable to access equipment via the outreach service.

DISASTERS AND SOCIAL VULNERABILITIES

The first part of this chapter introduced the environmental and human-generated risks, the following section explores the social risks and elements that can disproportionately affect PWID during disasters. These social elements threaten the accessibility of NEP services. Due to the scarcity of literature directly relevant to the research questions, the literature search was broadened to include a range of people with pre-existing vulnerabilities during disasters and social vulnerabilities to health care services outside of a disaster context for PWID. These health care services include harm-reduction programmes, drug programmes, OST programmes, General Practitioner services (GPs) and hospitals.

RESOURCE SHORTAGE AND DISASTER VULNERABILITY

One way PWID are disproportionately disadvantaged in disasters is by not having the necessary resources to prepare, respond to, or recover from a disaster. A range of research has explored the impact of inequity and lack of resourcing during disasters for people who already experience limited access to social determinants of health and life-sustaining resources (for example see, Blake & Lyons, 2016; Cutter et al., 2014; Flanagan et al., 2011; Hallegatte et al., 2020; Tierney, 2014, 2019; Torstonson et al., 2021). For instance, Hallegatte and colleagues (2020) compared income losses and asset losses for poor and non-poor people in disasters across six different locations in India after flooding and storms and found that wealthier people lost more in absolute terms, while in relative terms, poor people always lost more.

Disaster vulnerability is greater for people living in unstable housing, transient or homelessness situations as they often reside in physically and geographically marginal and hazardous places and spaces (Walters & Gaillard, 2014). Stable housing not only provides structural safety due to solid foundations; it provides social safety due to the ability for people to have community support (Blake et al., 2020). People who are homeless do not have the privilege of stable housing and are known to be excluded from disaster risk reduction practices and policies (Walters & Gaillard,

2014). Living in unstable housing, transient situations or being homeless poses unique health care needs and, as such, access to health care services is extra important (Hwang, 2001; Shaw, 2004).

Research on material vulnerabilities for those who experience homelessness mainly explores access to essential resources, including appropriate diet, education, and health care (Vlahov et al., 2001; Walters & Gaillard, 2014; Wright & Tompkins, 2006). Since homelessness is on the rise, and the homeless tend to have increased difficulty accessing health resources (Baggett et al., 2010; Gelberg et al., 2000; Rabiner & Weiner, 2012; Smith et al., 2000); it likely follows that people in Aotearoa New Zealand (including PWID) will have trouble accessing health services like NEPs. It is widely recognised that problematic drug use can be a pathway to homelessness (Boydell et al., 2000; Iheanacho et al., 2018). The statistics on PWID who are transient or homeless in Aotearoa New Zealand is sparse, however, homelessness among the general population is increasing (9% increase between 2001 and 2009, and more recently: by 15% between 2006 and 2013 (Amore, 2016). Homelessness or poor housing conditions are fuelled by an ongoing housing crisis in which there is greater demand for housing than availability making housing unaffordable (Smith, 2017; Wilson, 2020). In Aotearoa New Zealand, an estimated two-thirds of the housing stock is of poor quality (damp, mouldy, uninsulated, and inadequately heated (Telfar-Barnard et al., 2019). Such social pressures can increase vulnerability when faced with additional stressors, such as, COVID-19.

The level four COVID-19 lockdown period (Mar-Apr 2020) was a stressful experience for many people as it reduced social contact, created limited opportunities for recreational activities and created financial pressures for many (Every-Palmer et al., 2020). As only essential services were able to continue operating (including NEP), many businesses experienced financial pressures causing people to be laid off work. There is evidence to indicate that the financial pressures of COVID-19 were especially difficult for people on the margins of society. Marginality shaped by social class, citizenship status, ethnicity, and geographical living area is evident amongst people in Aotearoa New Zealand (Mulholland & McIntosh, 2011; Easton, 2013).

During the level four COVID-19 lockdown period, the Aotearoa New Zealand government attempted to cater to those who were unduly impacted by the loss of income or precarity. This included providing safe housing, more flexible laws around renting, temporary Income Relief Payments of NZ$490 per week for those fired during this period, and the support of not-for-profit organisations (Inland Revenue [IRD, 2020). However, despite these forms of social support, the number of people needing support, through, for instance, food packages indicated the number of people who had been living in hardship and had already “fallen through the cracks” (Elers et al., 2021). As such, any potential financial stress experienced during the

lockdown period could have negatively impacted or exacerbated vulnerability to harm and risk for people already living marginalised lives. This includes access to sterile drug-using equipment, particularly considering the cost of health care services is one of the most cited threats to health for PWID in non-disaster situations (Islam et al., 2012; Miller-Lloyd et al., 2020; Room, 2005). Sarang and colleagues (2008) found that lowering the cost of injecting equipment in pharmacy-based NEPs effectively increased PWID accessibility to equipment. Increased financial pressures in emergencies need to be considered as it not only serves as a direct barrier for PWID to health services (through for example equipment costs), but can also carry indirect access costs, for example, travel costs (Rowe, 2004). It is particularly important because studies indicate that people who face existing financial pressures (people on a low income or of lower socioeconomic status (SES)), are the ones most likely to experience additional pressures during an emergency.

COMPROMISED PREPAREDNESS

There is evidence to suggest PWID are less likely to prepare for emergencies, thereby disproportionately compromising their resilience in emergencies; this may also affect their ability to use clean injecting equipment in disasters. Preparedness for PWID refers to making sure they have enough sterile injecting equipment to last throughout the emergency, which can require buying more than one month's worth of equipment or enough equipment to sustain safe use until NEP staff can make the next "run" to the West Coast (Kohn et al., 2012). Discourses of preparedness, however, come with the assumption that people have the resources and capacity to do so (Torstonson et al., 2020). For example, preparedness requires people to have the financial resources to afford insurance to replace assets (Blake et al., 2020). Moreover, household emergency plans require people to have a range of extra resources (food, water, torches, small tent, hygiene items, petrol) that people might not have the financial resources to purchase (McClure, 2006).

While there are few studies specifically on how PWID access NEP in Aotearoa New Zealand, some international studies cite a lack of preparedness practices for PWID in disasters. For example, Dunlap and Golub (2011) interviewed 1119 PWUDs (People who use drugs) in the U.S. following Hurricane Katrina in 2005. The scholars found that PWUD admitted not to being prepared despite understanding the severity of the hazard risk; in that context, the PWUDs prioritised making money, socialising or accessing drugs to seeking shelter for the looming hurricane. There are also international studies that found the lack of prioritising to be a barrier to PWID accessing health care (Ashton, 2004; Brownie et al., 2015). This was influenced by a perceived lack of need to visit health care services (Motavalli et al., 2021), procrastination (Ashton, 2004), or simply ignoring the health issue (Miller-Lloyd et al., 2020). These studies suggest that preparing or stocking up on equipment for PWID in case of emergencies might be problematic in this study.

Disparate preparedness actions for PWID can also come from not having access to devices, such as technology through which preparedness messages are communicated (Blake et al., 2017; Blake et al., 2020). In Aotearoa New Zealand, important preparedness information for the public is accessible through phone/internet apps and websites. For instance, authorised emergency agencies can alert people through a risk warning text message if there is a threat to health, life or property (NEMA, 2020). PWID might, however, not have access to technology to receive these messages; this is especially true for people living in remote areas like the West Coast of the South Island, where there is likely to be less cell phone use and differences in internet access (lower speed connections) (Haythornthwaite et al., 2011).

STIGMA AND A 'ONE-SIZE-FITS-ALL' APPROACH TO EMERGENCY MANAGEMENT

PWID experience social stigma in health settings generally[3]. Stigma, the social positioning of being socially deviant and unacceptable, plays a role in the daily lives of PWID and particularly interferes with health care accessibility (Goffman, 1963). Day and colleagues (2003) found that PWID in the U.S. were treated as 'less than' by medical staff. Another study reported evidence that nurses would spend less time with PWID patients compared to the rest of the patient population (Australian Injecting and Illicit Drug Users League [AIVL], 2011). Van Boekel and colleagues (2013) argued that health professionals generally feel less satisfied and are less motivated when working with PWUDs, and that health professionals working with clients who actively used illicit drugs tended to spend more time on task-oriented service, offered less personal delivery, and demonstrated less empathy for clients in health care service delivery. The danger with such treatment biases is that they can affect treatment decisions and lead to practices that are unethical and unjust. (Jones et al., 2008; Lloyd, 2010; Sheridan et al., 2005). As Blake and colleagues argue (2020, p. 4), "to allow personal even unconscious bias to influence treatment is unethical and contravenes the New Zealand Medical Association Code of Ethics which calculates that treatment must not be discriminatory and must align with the Aotearoa New Zealand Human Rights Act."

While social stigma can play a prominent role in every day-life, and health care treatment for PWID, stigma is also present in discriminatory practices in emergency management. A plethora of research studies suggest that disaster aid and relief is often unfairly distributed and particularly benefits the most privileged in society (Blake et al., 2017; Cuny, 1994; Middleton & O'Keefe, 1998; Walters & Gaillard, 2014). PWID unduly suffer from neglect or ignorance towards their unique needs during disaster planning. Emergency management in Aotearoa New Zealand,

[3] Social stigma theory is discussed more in the next chapter.

provides essential services to increase preparedness, increase the response and enhance recovery. Blake and colleagues (2017) suggested that emergency discourses are not tailored to, or overlook, people who have particular vulnerabilities. For instance, protective measures during COVID-19 required access to protective equipment (facemasks, sanitiser), as well as having a safe home to weather the level four lockdown social distancing practices. There was concern, however, that people such as PWID might not have been unable to access necessary protective equipment (Blake et al., 2020).

During emergencies in Aotearoa New Zealand, people are encouraged to seek support at local Community Hubs (Civil Defence Centres). Here, people can collectively coordinate their response or recovery needs if infrastructure or networks of communication have been broken. While interviewing PWID and those receiving OST, Blake and colleagues (2017; 2020) found that people felt anxious about visiting these hubs due to internalised judgment about their drug-using status and any consequences that might evolve from such a disclosure, including loss of employment. In their 2017 study, Blake and colleagues interviewed 21 people receiving OST from four major cities in Aotearoa New Zealand. In their study, participants felt concerned that they would not be supported and would be denied any request for opioid medication or other support from authority figures. The participants also suspected that emergency professionals would not treat them well, and internalised stigma made people believe that they would be regarded in derogatory ways.

All of the factors mentioned above suggest that a 'one size fits all' approach to emergency management (whereby the same treatment is purported to be accessible to all individuals) is not working, as not everyone fits the mould or are part of the "team of 5 million". People with existing conditions that make them vulnerable might need extra support to access services like health care. Since PWID in Aotearoa New Zealand, face existing stigma and barriers to health care, social exclusion in health settings is likely to compound their access to a range of services during disasters, including clean needles and syringes. Whilst NEP is supposed to be a non-judgemental service, emergency management could still hamper PWID access to sterile equipment if the NEP staff cannot reach the West Coast in an emergency.

STIGMA AND GENDER

It is also important to mention the relationship between stigma and women, as it has been recognised that stigma tends to be worse for women who are PWUD (Springer et al., 2015; Strathdee & Vlahov, 2001; Wagner et al., 2010). Perceived or experienced stigma and discrimination in health care affect women more than men, and in some cases, prevent women from attending health appointments (Gibson, 2016; Roberts et al., 2010a). Women also experience unique challenges related to childcare responsibilities, such as concern about the consequences of their drug-

using status on their children (AIVL, 2003). Besides this, childcare responsibilities can make access to health services difficult due to the hours of operation and the service location (El-Bassel & Strathdee, 2015; Gibson, 2016; Springer et al., 2015; Wagner et al., 2010). Although PWID who identify as women are a minority or low in numbers in Aotearoa New Zealand, according to Gibson (2016), PWID who are women are likely to experience more difficulty accessing health care services than male PWID, which is likely to continue and be heightened in emergencies.

CHAPTER 1 AND 2 SUMMARY

On the grounds of the last two chapters, we arrive at the significance of disasters as a social phenomenon. Here, vulnerability during disasters is part of a larger pattern in society that consists of unjust social mechanisms and dynamic processes. This is particularly important to the study of how people already living precarious livelihoods might endure disproportionately adverse outcomes in disasters. Disasters transform existing social conditions into greater or more insecure conditions that can create or exacerbate disparities in health (Blake & Lyons, 2016; Cutter et al., 2014; Flanagan et al., 2011; Hallegatte et al., 2020; Morrow, 1999; Tierney, 2019; Torstonson et al., 2021). This study focuses on how disasters might transform PWID lives creating insecure conditions that potentially compromise their ability to access important health care services, such as the NEP. To understand how this works, we need to understand vulnerability as a social process (Cardona, 2011). This study attempts to do so by giving PWID a voice to express the social elements that might enable or hinder access to NEP for them in disasters and how stigma might influence accessibility. The following chapter introduces the methodology that I draw upon in this study.

CHAPTER 3 – METHODOLOGY AND METHOD

Research and methodological assumptions are broken down into broad philosophical stances: ontology, what constitutes as reality; epistemology, what constitutes as knowledge; methodology, the research paradigm; and the method, the research procedures (Chamberlain & Murray, 2009; Kumar, 2018; Miles & Huberman, 1984). This chapter introduces the methodological foundation underpinning this research. The first section situates the research in its disciplinary home, critical health psychology. It then introduces the methodology, outlining the research approach and its assumptions. Following that, it elaborates on other theories of relevance, such as Goffman's theory of stigma. As is required with sound research, it is situated in the assumptions of the researcher. The second half of this chapter details the method (procedural steps) that were taken in the research process, discussing the ethical principles and research considerations, such as characteristics of the design or methodology that influenced the interpretation of the findings of this research, including those of myself as a researcher.

Fundamental to the psychological inquiry is insight into patterns of human action and behaviour. However, the specific answers or knowledge gained from such inquiry depends on the questions asked. The type of questions asked is based on paradigms and an associated sets of assumptions that influence all aspects of the research process, including the methodology and methods used, the type of data collected and the types of conclusions that are drawn (Miles & Huberman, 1984; Tuffin, 2005).

CRITICAL HEALTH PSYCHOLOGY

This thesis belongs to the branch of knowledge known as critical health psychology (CHP). CHP is broadly concerned with social power and "who benefits from what we do" (Lyons & Chamberlain, 2017, p.1). CHP allows the researcher to address how power might influence health and the health care system and has a strong human rights agenda (Hepworth, 2006; Lyons & Chamberlain, 2017). Common CHP-based inquiries unpack how the various ways of knowing or applying health benefits a range of communities, particularly those of the oppressed. CHP emerged in the 1990s alongside other approaches to mainstream health psychology (MHP): public health psychology, community health psychology, and clinical health psychology (Chamberlain & Murray, 2009; Hepworth, 2006). Health psychologists can use one or more of these approaches, as they can be complementary and a tool for the health care system (Marks, 2002).

It is worth noting that CHP developed in direct contrast to MHP so as to incorporate the discipline of psychology and its theories and ideas into health and illness practices (Chamberlain & Murray, 2009; Hepworth, 2006; Marks, 2002). CHPs radical and justice orientation contrasts MHPs reductionist focus (Hepworth, 2006). Moreover, CHPs critique MHPs alignment with the traditional scientific model, where health explanations of the individual are based on a biomedical framework (and the biomedical model). The biomedical model has dominated thinking on physical and mental 'disorders' for much of the nineteenth and twentieth centuries and posits that approaches to illness (physical and psychological) are due to measurable, physiological deviations from normal, healthy functioning (Chamberlain & Murray, 2009). The main critique of the biomedical model is that it is devoid of contextual influences due to reductionism and mind-body dualism. The biomedical model assumes complex clinical phenomena are a derivative of a single cause, for example, genetics, rather than valuing the complex interplay of social, cultural, and political elements or a holistic framing in which illness is embedded (Engel, 1977).

In recent years, and in response to the biomedical critiques, health psychology practice (this includes CHP) draws on more contextually based frameworks such as the biopsychosocial model, a term coined by the psychiatrist George Engel. He argued that a good medical model should consider the patient, their social context, the medical profession, and the societal system as health and illness are affected by biological, psychological, and social factors (Engel, 1977). The biopsychosocial model is a multifactorial approach to understanding human functioning and health (Suls & Rothman, 2004). The biopsychosocial model with its multifactorial frame of reference has been applied to a range of drug-related studies in regard to health influences and outcomes. The biopsychosocial model is not, however, without its shortcomings. One common critique is the oversimplification of the social, psychological, and biological spheres (Weiner, 1994) and argue that it is not theoretically sophisticated and, therefore, is unable to be used as an explanatory theory or model. However, Marks (2002) suggests that it should not be regarded as a model, in the formal sense, rather a heuristic way of thinking about health and illness research (Suls, 2004). It is in this heuristic way that the biopsychosocial model conceptually underpins the multifactorial approach to this research. In understanding these key critiques, this research considers the influences of psychological, social, economic, and power on health care accessibility for PWID (Chamberlain & Murray, 2009; Farre & Rapley, 2017; Murray & Poland, 2006). A biopsychosocial lens works well with the Interpretive Phenological Analysis (IPA), which will be elaborated on in the next section.

METHODOLOGY IPA

CHP typically uses research methods that are qualitative (Murray, 2004). Qualitative methodologies enable researchers to specialise in producing rich, person-centred data that can be represented through language, thinking, emotions and actions. Since this research aims to prioritise the voice of PWID, a qualitative methodology seems better suited than quantitative methodologies, which tend to create numerical data and focus on the cause-effect relationship between (often decontextualised) variables (Willig, 2017). In choosing an appropriate methodology, a researcher should not attempt to find a superior methodology as there is no such thing; instead, the methodology should be chosen based on how well it can answer the research questions (Kumar, 2018). In this research, the qualitative methodology IPA, was judged as most suitable to address the research aims, assumptions, and research questions. Jonathan Smith introduced IPA in the mid-1990s as a methodology that allows researchers to capture both a qualitative and experimental dimension whilst maintaining a link to mainstream psychology (Shinebourne, 2011). IPA has an idiographic focus, which means it can offer insights into how a given person, in a given context, makes sense of a given phenomenon through open-form inquiry (Brocki & Wearden, 2006; Chamberlain & Murray, 2009; Smith et al., 2011). IPA also happens to be the most widely published methodology in health psychology research (Brocki & Wearden, 2006; Smith et al., 1999). IPA is a unique methodology; as it exists as combined theoretical framework and a method (Smith et al., 2011). It encompasses a theoretical framework and methodology and is grounded in both ontological and epistemological robustness. In the following section, these ideas are traced.

THEORETICAL BASIS OF IPA

IPA is one of several types of phenomenological-based psychologies, yet it is unique in that its theoretical foundation combines phenomenology, hermeneutics, and ideography (Alase, 2017; Dowling, 2007). The term phenomenology originates from the Greek word *phaenesthai,* which means, to show oneself or appear (Moustakas, 1994). The father of phenomenology, German philosopher Edmund Husserl, described it as the science of the essential structure of pure consciousness (Moran, 2002). In the philosophy of the unique ontological foundation of phenomenology (and IPA), Husserl distinguishes the phenomenological ontology (the phenomenological attitude) from a natural attitude. The natural attitude holds that the perceiver is independent from things and objects in the world, and these objects remain unaltered by the perceivers' consciousness. In other words, people are unreflectively immersed in a taken-for-granted world (both in science and everyday life). The phenomenological attitude, however, emphasises the importance of the experiencing subject (Luft, 2002). Husserl posits that any form of certain or objective knowledge can be attained *only* via the process of consciousness (Larkin &

Thompson, 2012). It is this phenomenological attitude in which IPA is ontologically situated.

There is one key aspect of Husserl's theory, however, that IPA does not subscribe to, which is, the interpretation process as it relates to phenomenology. For Husserl, applying this objective, phenomenological attitude is achieved through a bracketing process. Bracketing meant that researchers suspended their presuppositions and biases when considering a phenomenon (Willig & Rogers, 2017). The idea that people can successfully suspend themselves from their interpretation process was widely refuted (Heidegger, 1962; Smith & Smith, 1995; Spiegelberg, 1973, 1974). Heidegger instead proposed an alternative to Husserl notion of bracketing but maintained a loyal allegiance to the phenomenological attitude (Russell, 2011).

Heidegger argued that a researcher is unable to suspend their presuppositions from the interpretation process because interpretation is a necessary part of uncovering truth (Shinebourne, 2011). Heidegger was based in-and made these arguments from hermeneutic phenomenology, which, as the name suggests, is founded on the discipline of hermeneutics (Larkin et al., 2006; Willig & Rogers, 2017). Hermeneutics is a separate philosophical movement that has its origins in the interpretation of meaningful human interactions, and initially biblical texts, wisdom literature, and philosophical texts (Gadamer, 2008). Hermeneutic phenomenology places importance on interpretation by declaring that a researcher should uncover meaning (Laverty, 2003; Shinebourne, 2011). The incorporation of hermeneutic phenomenology into IPA is noticeable through its interpretation-centric form of inquiry. Part of IPAs theoretical make-up is that it aims to forego bias through a two-stage interpretation process that occurs between the researcher and the subject (participant), also known as a double hermeneutic (Kafle, 2011). In double hermeneutics, "the participant is trying to make sense of their personal and social world; the researcher is trying to make sense of the participant trying to make sense of their personal and social world" (Smith, 2004, p. 40).

Lastly, ideography theory also underpins IPA. Ideography is a type of evidence-based knowledge that focuses on the description and explanation of phenomena (Windelbrand, 1901/2001). IPA demonstrates its idiographic commitment through its emphasis on the particular and commitment to in-depth and detailed analysis. Shinebourne (2011) pointed out that this is not possible in nomothetic research, where data is often aggregated (collected from multiple sources and compiled). IPA values detailed experiences and analysis of specific scenarios for each person in turn and their accounts of the experience of a distinct phenomenon before making more general claims across participants (Smith, 2004), such as the PWID in this study. Commitment to an idiographic practice enables researchers to seek existential understandings about how people create meaning

which allows for depth and richness of data and is important to analysis so that variations in experience are not lost (Larkin et al., 2019). Since this research uses an interpretive-based paradigm, there is greater leniency towards the researcher's place in interpreting data and influencing the research process and outcomes. IPAs ontological foundation in the phenomenological attitude prioritises people's experiences and has been deemed useful for being able to capture the relatively complex and rapidly changing environment of disasters (e.g. see De Soir et al., 2012; Martin, 2016). In the following section the ontological, and epistemological basis of IPA, which is important for transparency between the researcher and reader is described (Tuffin, 2005).

ONTOLOGICAL FOUNDATION OF IPA

The previous section explored IPA's theoretical influences, clarifying the ontological assumptions of IPA is more challenging because they are rarely explicated in the literature (Chamberlain & Murray, 2009; Lyons & Chamberlain, 2017; Parker & Aggleton, 2003; Willig & Rogers, 2017). Chamberlain (2011) suggested this may be because IPA is used by many as a method and not considered a methodological framework. Alternatively, Noon (2018) stated the reason ontology remains unspoken is due to IPAs unclear dualistic ontological tension. IPA is committed to ideography and phenomenology (the phenomenological attitude), which is based in a realist ontology, yet simultaneously subscribes to a transferability of findings based in relativist-based ontology. This tension is reified when researchers face the seemingly incongruous research position whilst undertaking an IPA-based inquiry; when hearing people talk, researchers are simultaneously "taking peoples experiences as they are" (idiographic and phenomenological commitment), and making sense, and finding patterns in the perspective of those being interviewed. Larkin and colleagues (2006) dissolved this ontological tension by taking the undefined ontological assumptions not as an issue but as a freedom to choose and define their assumptions. Following this logic, this research takes the liberty to argue that the ontological basis of IPA is centrally situated on a spectrum between realism and relativist ontology (or soft relativist/semi-realist ontology). This argument is based on scholars who assert that IPA can be simultaneously realist and relativist. For example, Miles & Huberman (1984, p.58) claimed that "[IPA] is ready to encompass the real and the constructed". Larkin and colleagues (2006) claimed that Heidegger was positioned as a realist rather than the expected relativist and that things in the world are real and exist and would continue to do so even if humans do not; however, nothing would be revealed as anything without the encounter of human life; humans bring meaning and context to things (Larkin et al., 2006). Heidegger profoundly claimed that what exists in the world as *real* does not depend on us, rather the nature and meaning of reality (Larkin et al., 2006). This realisation allows for a softening of the phenomenological position that claims data cannot be generalisable. In this

research, such tension is navigated by demonstrating both realist and relativist frameworks in which to analyse the experience of participants and generalise data across people where appropriate.

OTHER THEORETICAL INFLUENCES

The critically based foundation of this research on accessibility is ultimately concerned with the notion of equity, both in health care and emergency management. As illustrated in the previous chapters, PWID, as people with a minority status, are less likely to have social resources in disaster situations than others, which reflects an inequitable and unequal distribution of power in society (Cullen & Pretes, 2000). In this thesis, how social stigma continues to play a role and shapes access to resources in disaster scenarios is perceived through the play of power in micro-dynamic situations, as demonstrated in Goffman's (1963, 1973) theory of social stigma.

SOCIAL STIGMA THEORY

Goffman's (1963, 1973) seminal theory of stigma conceptualises stigma as any situation where a person is disqualified from full social acceptance due to experiences of being deeply discredited. People who are stigmatised are given an enemy like status, where they are perceived as "less than" and, as a result, are discriminated against (or socially excluded) (Allman, 2013; Buchanan, 2006). According to Goffman, stigma arises when a person possesses an attribute or marker that others judge as different. These types of stigma/undesired difference can present themselves in one of three ways: abominations of the body, blemishes of individual character, and tribal stigma, e.g. ethnicity, religion. It is largely recognised that people who use or abuse substances can be subjected to stigma (Ahern et al., 2007; Luoma et al., 2007; Room, 2005). Three theoretical aspects of stigma are relevant to PWID and their ability to access NEP equipment. Firstly, public stigma concerns the negative attitudes and beliefs in the general population about a group of individuals, like PWID (Corrigan et al., 2014; Corrigan and Penn 1999). Secondly, a form of self-stigma that is closely related to public stigma. Self-stigma is when harmful public perceptions (of public stigma) are internalised (Link et al., 1989; Link & Phelan, 2001; Perlick et al., 2001). This can negatively affect the identity of a person and result in shame and worthlessness (Link & Phelan, 2001), but also anger (Corrigan & Watson, 2002). The third type of stigma of relevance to PWID is structural stigma. This is a form of stigma that is perpetuated on a macro (global) level through institutions, policies, and cultural social norms (Stringer et al., 2018). As mentioned in Chapter 2, since stigma commonly prevent PWID from accessing health care (Islam et al., 2012; Miller-Lloyd et al., 2020; Room, 2005), it is likely that stigma continues to play a role in accessibility to NEP in disasters.

FOUCAULT

Whilst Goffman's theory on social stigma provides an explanation of how stigma functions between PWID and health care and emergency professionals on a micro-scale, this thesis also draws from the work of 20th-century French philosopher Michael Foucault (Foucault, 1977, 1991). While Foucauldian theory was beyond the scope of this thesis and was therefore not explicitly used in the analysis of this work, it does, however, inform the critical lens as it allowed the conceptualisation of how systematic injustices and social mechanisms disproportionately affect access to health services (NEP) for PWID. As such, this Foucaultian theory as relevant to this study, is briefly outlined below.

Foucault sought to challenge traditional notions of truth and knowledge, especially on the functioning of power in society and how power can work as exclusion. Foucault (1982, p.777) stated in his work on power: "My objective [*sic*], has been to create a history of the different modes by which, in our culture, human beings are made subjects". Foucault's critical lens has been meaningfully applied as a conceptual tool for research into drugs (for example, see Duff, 2004, 2007; Keane, 2009). Keane (2009, p.1) suggested that Foucauldian ideas have enabled the expansion of critical inquiry: "These conceptual tools have enabled critique to expand from a consideration of problem drugs."

Foucault rejected the "repressive hypothesis" of power, in which it is always visible, marginalising, negative or repressive force (Spanos, 1990b, p. 206). Instead, Foucault asserted that power just *is;* it is co-constructed and can be productive and a positive force in society (Gaventa, 2003; Lawrence & Wiebe, 2017). Foucault argued that power operating in society in our modernity-epoch is a form of governmentality, where it no longer consists of a sovereign (monarchy) or disciplinary power alone. Power in this way is the social and political exchange of power, such as surveillance, cultural norms, persuasion, suggestion, and encouragement of certain behaviours. Power distribution in governmentality concerns techniques and procedures designed to govern the conduct of both individuals and populations at every level. It is through these forms of power people are legitimised: biopolitical technologies, as well as people take a performative role, "one that constitutes the very conditions under which legitimate subjects emerge" (Fraser, 2008, p.194). We approve and disapprove, reinforcing and redefining the standard of what we think is normal and abnormal. A major way these norms are legitimised is through social structures, such as prisons, hospitals, schools, and asylums, which contribute to and reinforce the social exclusion of stigmatised groups (Buchanan, 2006; Moore, 2008; Tupper, 2012). For instance, the "war on drugs" paradigm was a global campaign led by the U.S. government, involving a large investment in incarceration in the late 1960s with the intention of reducing the sale, distribution, and consumption of illicit drugs (Buchanan, 2006; Moore, 2008; Tupper, 2012). A punitive "war on drugs" discourse

involves policing and criminal justice interventions for drug use and the criminalising of people who use drugs.

Combining Goffman's and Foucault theories is a somewhat unexpected thing to do; whilst Foucault wrote on a range of marginalised people (homosexuals, prisoners, and the mad), he never made drug users central to his enquiry. Moreover, Foucault's work on power seems largely unconcerned with stigma. Similarly, Goffman's writing on stigma hardly mentions notions of power. However, when examined together, the two bodies of work provide theoretical evidence of "culturally constituted stigmati[s]ation" (Parker and Aggleton, 2003, p.17). Moreover, they provide a framework for understanding how PWID come to be culturally framed as medicolegal subjects and subjected to stigma in social structures, including emergency management and health services (Parker & Aggleton, 2003; Keane, 2009).

REFLEXIVITY

Reflexivity plays an important role in generating knowledge by means of qualitative research (Ahmed et al., 2011; Horsburgh, 2003; Macbeth, 2001). Reflexivity is the process of the researcher turning inward and continually practising self-evaluation and processing their internal dialogue. It involves carefully unpacking assumptions, social positions, biases, beliefs, and personal experiences that matter to and influence research (Berger, 2015). Practising reflexivity helps researchers maintain explicit awareness and, in a sense, balance between the personal and the universal (cited in Berger, 2015; Bradbury-Jones, 2007; Guillemin & Gillam, 2004; Stronach et al., 2007).

Reflexivity is particularly important and well suited to the context of this research. As this IPA-based inquiry is focused on the meaning PWID attribute to their social context, by practising reflexivity, I, as the researcher, am better able to embody a phenomenological attitude throughout the work and interpret the participants' narratives without my bias interfering as strongly. Reflexivity is also necessary for challenging any pre-existing notions around PWID. A particular assumption I became aware of during this research is that I implicitly assumed homogeneity of PWID, in that PWID are alike, and secondly, I assumed that PWID face difficulties accessing health care services. To avoid over-generalising or stereotyping PWID, I refrained from referring to them with any grouping type or terminology (e.g. referring to PWID as a group or population) and instead referred to them as individual people. The third assumption I held was that PWID do experience more social vulnerabilities than other communities in Aotearoa New Zealand, including stigma. In practising reflexivity, I was able to acknowledge any generalising patterns or lenses that might influence the findings, such that this may not be the experience of all PWID. It is through such

generalisations that researchers reproduce dominant narratives that are detrimental to PWID by, for example, positioning PWID as people who are unwilling to prioritise preparing for emergencies it perpetuates a negative stereotype of PWID as useless or lazy.

Another strategy employed in this research was being transparent about the research intentions and my pre-conceived notions and values around drug use, and my positionality towards drugs as a researcher (Sandelowski & Barroso, 2002; Underwood et al., 2010). Personally, I have never consumed illicit drugs but have been socialised by scientific and social notions about what it means to use drugs. These include narratives that communicate the harmful physical and psychological implications of drug use. Another social and stigmatising discourse in Western culture, as previously mentioned, is the negative attitude or stigma towards drug users themselves — people who are seen as being less than others. This is far from the truth. PWID are incredibly capable, intelligent, funny, and kind. It was a privilege to have my taken-for-granted privilege and bias challenged.

Understanding my preconceived believes and attitudes towards PWID and drugs meant that I consciously separated myself from them and took up a phenomenological attitude in that I engaged with PWID in this study and beyond as they were, where they were, without judgement. Health-based binary judgements of 'good' and 'bad' are socially constructed and constrain individuals, both those who judge and those being judged (Balog, 2005; Cowen, 1994).

My ability to act with non-judgemental positive regard and the value of openness has perhaps been influenced by my upbringing, where I experienced first-hand being an Other. When I was 11, my parent, brother, sister and I immigrated to Aotearoa New Zealand, from the Netherlands. We relocated here, not having any wider family or friends. Furthermore, my apparent strong Dutch accent and my parent's divorce enhanced my feelings of separation and differentness. However, while I get a sense of living 'difference' and can have an 'understanding attitude' towards PWID, I cannot claim to understand stigma and marginalisation as I have been sheltered by my white hegemonic, middle-class privilege. Since I cannot claim to understand stigma and marginalisation, nor do I belong to any in-group of PWID, the most appropriate position for me to take is that of an 'outsider'. A challenge with this position is that an outsider-based researcher can be perceived as "looking at people" (de Laine, 2000). The challenge here is that interviewees might interpret this as a 'dispassionate' or even judgemental stance (de Laine, 2000, p. 20). To overcome this, I integrated moral intentionality as a researcher, which helped to bridge the gap between "looking at people" and instead "being in the world with the other" (de Laine, 2000, p.18). Moral intentionality involves continually engaging in reflective practice and being caring, sharing, nurturing, and showing empathy. Furthermore, throughout the entire research process, I received great support from Dr Denise

Blake (primary supervisor), who has intimate knowledge and experience of working in PWID communities and was able to offer support for how to engage with marginalised communities appropriately and practically. I think that I was able to build trust and add something of value to the NEP-based community. I was open to learning, and reflexive practice is something I will be taking into the future.

CONSIDERATIONS

While this work does not subscribe to positivistic assertions about traditional research limitations, as a critical qualitative researcher, it is necessary to discuss gaps or limits in research. This is not only to highlight the multiple forms of knowledge production but to demonstrate further the critical lens that is applied in this research. As previously, stated IPA is a valued methodology that offers important insights into people's experiences and lived worlds. However, there was initial hesitation in applying this approach due to its ontological and epistemological ambiguities and lack of any form of 'standardisation'. This is a common concern among researchers (e.g. Giorgi, 2010) that have been constructed in academic institutions that uphold positivistic science as the gold standard. Arguments (for example, see Tuffour, 2017) that state IPA is a more descriptive (realist) rather than interpretive (relativist) approach was a concern in regard to how it would fit within a critical health paradigm. Since this field of study is naturally concerned with power and macro-social processes in health and illness, concerns have been raised over the adaptability of IPA as an approach (Chamberlain & Murray, 2009). For example, Langdridge (2008) points out that whilst there is information on the power of phenomenology within a critical paradigm, phenomenology may even be powerful within a critical paradigm, able to capture, respect, and promote the voices of research participants, especially those who may be excluded, marginalised, or deprived. Although the findings of IPA, such as those found in this study, have merit and may potentially be generalisable information, this is not implied.

METHOD

The methodology that was outlined in the first half of this chapter informed the research design and the analysis described in the following section. This section begins with a discussion of the ethical processes and considerations that guides this research. It then details the research process involved in initially speaking to a NEP staff member and the subsequent interviewing of a further 13 PWID over the course of two weeks. Following this, the method involved applying IPA tools to identify superordinate and subordinate themes.

ETHICAL CONSIDERATIONS

Throughout all stages of the research, the highest priority was given to prevent any potential harm to participants and their communities. The research aimed to benefit all people involved, including PWID, NEP staff and the health service on a larger scale. Dr Denise Blake, Chris Brough and I were in correspondence throughout this entire project to ensure that it was community-driven and relationally ethical (Hodgetts et al., 2021). Moreover, it was important to ensure that the research was beneficial to the outreach service and that it met the needs of both NEP clients and the NEP service. Since Chris Brough was the one who initially identified that disaster preparedness was a need for the NEP service, the interviews were about giving PWID a platform to openly voice their opinions and needs so that this research could ultimately be of benefit.

A high level of ethical conduct was employed during this research as informed by Massey University's Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants as a guide (Massey University, 2017). Ethical approval was sought and granted by the Massey University Human Ethics Committee. The application covered several important potential risks to ensure safety and care for all, so by following steps, thorough preparation and practice was used when interviewing people as is needed with sensitive topics (e.g. drug dependency, effects of disasters, fears). Safety plans were also set in case any concerns or problems arose, such as a recording not working, safety or a room not being available. As with any research, this is crucial to research design. Ethical approval granted by the Massey University Human Ethics Committee: Northern, Application NOR 20/27.

Other practical steps were taken to ensure ethical research practice, such as maintaining the confidentiality of participants. This involved the use of a Transcript Release Form (Appendix D), which provided the participants with the opportunity to read over their transcript and amend anything they wished. All participants' names

were coded, anonymised, and all identifiable information from the transcripts was removed to the best of my ability.

INITIAL CONVERSATIONS

This research was a community-driven process; collaborators from the NEP drove the research questions and design. In early 2019, Dr Denise Blake (the supervisor), who at the time was a Senior Lecturer for the Joint Centre for Disaster Research within the School of Psychology at Massey University, was contacted by the NEP manager of NICHE, Chris Brough[4] , about this project. Chris was advised to contact Dr Denise Blake because of earlier research she and others had done on access to OST during disasters (for example, see Blake and Lyons, 2016; Blake, 2018). Chris voiced his concerns about the potential inaccessibility of NEP gear for outreach service clients living on the West Coast of the South Island, Aotearoa New Zealand in the event a natural hazard or disaster blocked road access for the outreach service. As described earlier, the West Coast experiences frequent flooding events on State Highway 6, which can block van accessibility. State Highway 6 (a three to four-hour drive between Nelson and Westport) is the primary, and fastest route for direct access to Westport. There is an alternative route, but that would take much longer and might also be susceptible to similar road closures. Dr Denise Blake agreed to take the project on and spoke to the National Manager of the Needle Exchange Programme, as well as the Regional Manager of NICHE, to establish relationships and boundaries around the project, as should happen with all research projects with marginalised communities (Hodgetts et al., 2021). Shortly after this, prior to any interviews, the COVID-19 pandemic began to affect the people of Aotearoa New Zealand more seriously. Considering the disaster focus of this research, COVID-19 was naturally integrated as a topic of interest within this research.

SAMPLING AND RECRUITMENT

In total, 14 people were interviewed: one NEP staff member, and 13 PWID, all of whom were selectively sampled. Selective sampling (which involves choosing participants instead of randomly selecting them as with random sampling), is a typical way for IPA-based studies to sample participants. IPA uses comparatively fewer subjects than nomothetic approaches (where data is used to generalise). Nomothetic approaches assume to minimise bias and therefore use random sampling techniques. In IPA, however, the aim is not to generalise. Rather, selective sampling allows the researcher to pick out subjects that can best answer the research questions (Smith & Shinebourne, 2012).

[4] Chris Brough has permitted the use of this name in in this document.

The NEP staff member was the first to be interviewed on 8th April 2020. He was picked to represent NEP staff as he had worked for NEP the longest, including in managerial positions. After this initial interview, 13 other PWID were recruited by the NICHE manager, Chris, who allowed the project to be community-driven. Chris gave out an information sheet about the project to PWID that had previously expressed interest in talking about the issue of NEP accessibility in disasters. Closer to the interviews, Chris sent them a letter to confirm if they were still interested and to introduce me, as the researcher. He then emailed me a list of their contact details. In mid-September 2020, all PWID were contacted to establish an interview date at mutually agreed-upon locations. A week later, on the 24th and 25th September 2020, seven PWID were interviewed face-to-face in a booked room at the Westport Salvation Army. Because six members were unable to meet in person, interviews were conducted via phone between 29th September and the 1st of October 2020. Two of the interviewees were from Westport, two from Greymouth and two from Hokitika. Out of the nine people who intended to be interviewed in person, two people could not make it at the last minute, and as a result, only seven people on the West Coast were interviewed in person.

DATA-COLLECTION

THE INTERVIEWS

In all the face-to-face interviews, participants were given an Information Sheet (Appendix B), Consent Form (Appendix C) as well as a Transcript Release Form (Appendix D). For the interviews that took place over the phone, the Information Sheet had been given in person (prior to the interview), but the content of all three forms was verbally recited at the start of the interview. All interviewees were reminded that the interviews would be audio-recorded but that the recording devices could be turned off at any point. It was also re-iterated that anything they chose to disclose would remain confidential, and any identifiable information such as names would be anonymised in future documentation. In addition, interviewees could ask any questions or ask for clarification at any point. Depending on the type of interview, written or verbal consent was obtained. All participants meet the interview criteria, including working for or being a client of the West Coast outreach service, being over the age of 16 years, and being able to give informed consent. The interviews were semi-structured, where a list of questions was predetermined (Appendix A). Semi-structured interviews are flexible-data collection instruments, so questions can be modified according to the responses of interviewees. This type of interview structure allows for the researcher to dive into interesting and important areas in the research. Semi-structured interviews are typically used in IPA as they allow participant perceptions to be analysed in detail (Smith & Shinebourne, 2012), and whilst questions were used as a guide, a non-directive approach allowed

meaning to emerge naturally (Longhurst, 2003). Each interview was up to an hour-long.

DEMOGRAPHIC INFORMATION

Overall, 14 research participants were interviewed, including the Regional Manager of NICHE and nine clients in West Port, two in Greymouth, and two in Hokitika. All participants were over thirty years of age: the youngest 30 and the oldest 51. Ethnicity data was not collected. All participants were receiving treatment on an OST programme and used NEP in differing ways. Some accessed the range of free equipment, and some paid for NEP equipment.

DATA-ANALYSIS

Nine transcripts were produced between November and December 2020, after which analysis was applied. As is the case with many qualitative-based approaches, there is no single prescribed IPA method of analysis (Larkin & Thompson, 2012; Larkin et al., 2006). This is because IPA was intentionally made to be adaptable to suit the complexity and diversity of people in different research projects (Shinebourne, 2011). The analysis style drawn on for this study was based on interpretation outlined by Smith and Osborne, who emphasised that analysis is ultimately a personal process and researchers will have their own way of working (Smith & Osborne, 2012). There were, however, some conventions to follow, which are outlined below.

In the first stage of analysis, the transcripts were read and reread so that the text became familiar and the essence of what the interviewees were saying became clear. During these read-throughs, sections were highlighted, and anything that was significant and/or interesting in a participant's narrative was noted in the left-hand margin of the page. This included attempts at paraphrasing or summarising and noting associations or early interpretations. This process was iterative and continuous (Smith & Osborne, 2012). Each transcript was approached in the same way, but with the second transcript readthrough, the right-hand margin was used to note emerging themes. This is where the initial notes from the left-hand margin were transformed into a higher level of abstractions with concise phrases aimed to capture the quality of what was found in the text (Smith & Osborne, 2012).

After this, the emergent themes on the right-hand side of the transcript were listed, connections were sought between transcripts. Clusters between data were formed and ordered as superordinate themes and others as subordinate themes based on the significance of the cluster. Simultaneously, newly formed themes were checked in terms of their relevance to the primary material to make sure that what the participants said was not misapplied. The interpretive process of notating and clustering themes was completed for all the transcripts. The themes from the first transcript were used to orient the subsequent analysis of the other transcripts whilst

noting any new issues/topics. This entire analysis process was done in a flexible manner, in line with Smith and Osborne (2012), who recognise that not all parts of a transcript contain the same richness of information.

After all the transcripts had been interpreted, data was prioritised and reduced to a final list of superordinate and subordinate themes. Consistent with the iterative process of IPA, and as part of the ongoing analysis, earlier transcripts were reviewed again for any superordinate themes. This process required the complex balancing of the double hermeneutic process, "the participant is trying to make sense of their personal and social world; the researcher is trying to make sense of the participant trying to make sense of their personal and social world" (Smith, 2004, p. 40). Whilst the researcher's point of access is through their own pre-conceptions and the accounts of participants (Shinebourne, 2011), Smith (2012) notes that scholars should give priority to the new object instead of their own preconceptions. The table outlining the final superordinate and subordinate themes can be found in the analysis chapter on the following page.

CHAPTER 3 SUMMARY

This chapter introduced the methodology and methods used in this study. It outlined the chosen methodology of IPA and explained how social stigma was interweaved because of its relevance to the topic area. IPA and social sigma theory were chosen as they best suited this critical inquiry into the dynamic subject of PWID and disaster vulnerability. This methodology, situated in a spectrum between realism and relativist ontology, called for the simultaneous navigation and demonstration of both realist and relativist frameworks in the analysis of the PWID interviews. This chapter also outlined other vital topics areas and research design strategies, including reflexive practice that sought to challenge the researcher's pre-existing notions of PWID and drug use and supported a transparent research practice. The method section explained the ethical processes and considerations and detailed how the information was gathered, and the analysis process. The next chapter presents the analysis of the interview data and the role of social vulnerability and accessibility to health care in disaster settings for PWID.

Superordinate themes	Subordinate themes
Psychological influences	Preparedness: access to injecting equipment during disasters
	Differences in motivation to being prepared
	Living rurally
	Avoiding Hepatitis C
	Avoiding a “dirty shot”
Social influences	Community networks: the key contact system
	Key contacts as a secondary distribution system
	Peer workers: psychosocial support
	Peer workers: practical support and flexibility
Structural influences	Service confidentiality
	Infrastructure: road closures and distance
	Equipment costs
Social stigma	Structural stigma: deprioritised in emergency management
	Stigma prevents PWID accessing pharmacies
Emergency management solutions	Storing equipment in community facilities
	Conflicting opinions
	Electronic dispenser
	Conflicting opinions

CHAPTER 4 – FINDINGS

PSYCHOLOGICAL AND SOCIAL INFLUENCES

Disasters continue to harm those who are marginalised disproportionately and those who have fewer resources to prepare or mitigate risks compared to people with more power in society (Hewitt, 2019; Wisner & Luce, 1993). This includes PWID. This research focuses on PWID accessibility to injecting equipment and other NEP products during times of adversity. As introduced in Chaper 1, deconstructing vulnerability allows us to recognise the underlying mechanisms that transform social conditions into insecure conditions (Cardona, 2011). Renaud and colleagues (2010) point out that in resilience and vulnerability research, many components come into play; it is, therefore, important to have a global understanding of the complexity of human, social and environmental interaction. As expressed earlier, by understanding the problematics of vulnerability, the following questions were posed:

1. What social elements do PWID perceive to enable or work as a barrier to accessing NEP services in disasters?

2. Is stigma perceived to play a role in NEP service accessibility in disasters for PWID?

This chapter presents the analytical body of the thesis, wherein the perspectives and experiences of PWID living on the West Coast of the South Island of Aotearoa New Zealand, are analysed, categorised and discussed within superordinate (higher level) and subordinate (lower level) themes. These findings represent the perspectives of one NEP staff member and 13 PWID. Injecting equipment is predominantly accessed via the outreach service, which travels to the West Coast once per month. Secondary services include pharmacy-based NEPs, the key contact system, the courier service, and the online store. The primary disaster-related risks are those which block State Highway 6 road because they obstruct and comprise access for the outreach service, courier service, as well as any safe injection items delivered via the online store, which also uses a courier-based delivery service.

As this study aims to identify issues around access to health care, both enabling influences and hindering influences are explored; the type of influence is made clear within each subordinate theme. The superordinate themes are categorised to draw attention to the holistic nature of this inquiry and the ecological (personal, social, structural, and macro-level) dimensions that influence vulnerability for PWID. Chapter 4 unpacks superordinate themes of a psychological and social dimension. Psychological influences can consist of motivation, attitudes, perceptions, and feelings. The second superordinate theme represents the social dimension, in which, the impact of children, friends, neighbours, or the PWID

community are considered. Chapter 5 explores higher level subordinate themes, whereby the third superordinate theme explored structural influences, which relate to health service operation elements, emergency management organisations and environmental hazards. The fourth superordinate theme is stigma, which prevails across all superordinate themes but is explored in detail in this section. This is followed by the final superordinate theme on emergency management solutions. This theme contrasts earlier themes by exploring suggested solutions to accessibility.

PSYCHOLOGICAL INFLUENCES

This first superordinate theme represents psychological influences on accessibility. This features motivations but includes emotions and behaviours as relevant to the experiences of disasters (Miller, 2012). As outlined in Chapter 2, previous studies have indicated that for PWID, differences in motivation and perceived need to prepare for disasters negatively influences disaster preparedness. For instance scholars, (Bennett et al., 2011; Kohn et al., 2012) found that people who are drug dependent (on illicit street drugs rather than legal drug dependency like methadone and suboxone and morphine) are likely to display less disaster preparedness actions. Gillespie and colleagues (2007) found that illicit drug-dependent people have less self-efficacy and hope in disasters and tend to be less resilient. Since this study involves access to health care resources, research on health access is relevant to psychological processes. Literature in this area, similar to the disaster literature, found that PWID in everyday settings experience a lack of motivation, a lack of perceived need for care, and procrastination which negatively affected access to blood-borne virus treatment, harm-reduction centres, and GPs (Miller-Lloyd et al., 2020; Motavalli et al., 2021). Given these findings, the following section merges the two (disaster and access to health) by analysing what PWID perceive and experience to be elements that hinder or enable access to resources in disasters.

PREPAREDNESS: ACCESS TO INJECTING EQUIPMENT DURING DISASTERS

The psychological construct of motivation or the process that initiates and maintains goal-oriented behaviours (Ryan et al., 2009) was identified as a subordinate theme to accessibility for PWID. In disasters, like flooding events or COVID-19, where the outreach service is unavailable, secondary distribution services (i.e. the online store, courier service and the key contact system), or buying spare drug injecting equipment ahead of time when engaging with the outreach service, provide alternative ways of accessing NEP equipment. However, to proactively engage with these services and purchase spare equipment requires PIWIDs to have sufficient motivation. As mentioned, previous studies have found that people who use drugs are typically not motivated to access health care (Miller-Lloyd et al., 2020; Motavalli et al., 2021) nor engage in disaster preparedness behaviours (Dunlap & Golub, 2011; Kohn et al., 2012). It should be mentioned, however, that preparing for

emergencies is not typical behaviour, more generally for people living in Aotearoa New Zealand. A recent survey on Aotearoa New Zealand preparedness behaviours found that on average, only 24% of people are fully prepared for an emergency (Colmar Brunton, 2020). This includes having a plan or discussing actions on what to do in the event of a disaster as a household, storing at least 9 litres of water for each household member, having a getaway bag with emergency items ready, and having emergency supplies at home (e.g., torches, blankets, food, water and other gear that might maximise resilience in emergencies) (Ministry of Civil Defence & Emergency Management, 2019). The PWID in this study did not behave any differently in regard to these preparedness (and proactiveness) behaviours, as some indicated being neither proactive nor prepared, as is discussed below.

DIFFERENCES IN MOTIVATION TO BEING PREPARED

NEP staff said that not all PWID were prepared for an emergency despite being aware of the risks involved. As represented in the excerpt below, the staff member in this study recanted how people were relieved when injecting equipment arrived after the 2011 Christchurch earthquake. However, the staff member also suggests that although PWID appear concerned about access to equipment, many still did not adopt preparedness behaviours:

> *When the van showed up with the equipment [PWID] were over the moon, and some of them thought about that really quite long and hard. "What if this would happen again?" And "what could we change?" [. . .] What we noticed about that was that some reacted to that (got prepared), and some still haven't got plans in place.* (NEP staff member)

Narratives from PWID themselves in this study indicate similar behaviours. In the following excerpt, David displays ambivalence about equipment accessibility in disasters, despite indicating he is prepared for natural hazard disasters. The lack of preparedness around not having spare injecting equipment was not due to a complete lack of preparedness. David also described how he and his partner would manage, should they have to, by recycling equipment or using other mind-or-mood-altering substances:

> *We're okay because we're pretty much prepared for it - most eventualities I guess[…] we'd still be able to -well we got no [injecting] gear, but we could either recycle, clean our old stuff, and or we just drink or smoke.* (David)

David's discrepancy between natural hazard preparedness, "most eventualities", and having spare injecting equipment attests to the perceived importance of injecting equipment. These conclusions are consistent with other PWID, who also said they would re-use their injecting gear despite being able to arrange new NEP products:

You have to yeah […] just use their old shit - just wash it out, a lot of people do that anyway – I actually don't know why it's pretty easy at the moment to get clean shit if you need it. I guess people are lazy or something. (Gabe)

Gabe believes that re-using equipment is not due to the lack of access to NEP products on the West Coast of Aotearoa New Zealand but instead attributes — "using old shit"— to the personal characteristic of laziness. Whilst it could be argued that the tendency to re-use equipment is due to an unawareness of the importance of using new equipment and the risks associated with re-using equipment, such as blood-borne viruses and skin and soft tissue infections (i.e. abscesses, cellulitis) (Roose et al., 2009). Ben dismisses this claim by identifying that it is more about a lack of caring:

They are so aware (of the health consequences) it's unbelievable, but they don't care either […] like "oh look I haven't got any cleans, but I can use one of my old ones". (Ben)

Perhaps, what Ben interprets as a lack of caring is founded in the overwhelming need to consume the drug. Whilst for many, the motivation for drug use is akin to the motivation for any recreational activity (relaxation, socialising, enjoyment), for a minority of people, drug-based motivation is more compulsive (McCabe et al., 2007). Compulsive drug use that is based on addictive tendencies has previously been found to influence the prioritising of important health-based activities. Drug addiction can overshadow people's desire or perceived need to access health services, as well as engaging in health-preserving behaviours in impending emergencies (i.e. shelter -seeking) (Dunlap & Golub, 2011; Motavalli et al., 2021). In contrast, other PWID, such as Kyle, demonstrated proactivity and forethought towards accessing equipment in emergency situations. Kyle was also prepared for natural hazards by stocking up on NEP equipment in case of an emergency, and other emergency supplies, including food and water:

I prepare myself by buying enough spare gear off [NEP staff]. I have enough for the month plus another two weeks in case something happens […]. I do it consciously because I live remotely, and there's always something that could happen […] I've got ninety-six hours of food here, canned goods and stuff for just in case I get flooding and we can't move anywhere. I've got enough food for four days […]. I believe it is up to the individual if they can afford it, and I've been able to afford it. I've just made it a priority because I've known over the last like four years, you're having a perfect life, the next minute your wife […]. My wife passed away from a brain aneurism, your whole life gets changed upside down. You don't know what could happen. (Kyle)

For Kyle, being prepared involves self-responsibility — "I believe it is up to the individual". Kyle indicates that he was motivated because of his previous experiences with unexpected, traumatic, and life-changing events (e.g., his wife passing away suddenly and previous disaster events).

This section has represented the range of responses PWID have, from not being motivated to prepare to being well prepared. It also alludes to the range of motivations or reasons people have for preparing. The following sections discuss the range of more common motivating drivers that the PWID in this study identified regarding preparedness and proactiveness to have spare NEP products should a disaster occur.

LIVING RURALLY

One commonly presented driver was living rurally, and the associated perceived vulnerability caused by geographical distance and lack of alternative options to access NEP products. For Kyle, preparedness behaviours are inspired by hazards risk and geographical distance to any emergency management support or safety:

> *I have enough [NEP products] for the month plus another two weeks in case something happens […]. I do it consciously because I live remotely, and there's always something that could happen […]. I've also got ninety-six hours of food here. And like one of those canned goods and stuff in case I get flooding and we can't move anywhere. I've got enough food for four days […].* (Kyle)

As Kyle demonstrates that remote living, for him, influences experiences of vulnerability to hazards. Living remotely and geographical distant is a concern as it can hinder accessibility to reach or be reached by emergency services — "I live remotely…we can't move anywhere". Fountain and colleagues (2021) suggested that rural areas in Aotearoa New Zealand, such as the West Coast of the South Island, can present additional challenges for risk management, emergency preparedness, and resilience-building more generally, and attribute decreased capacity to the "hollowing-out" of infrastructures and people — "depopulation, loss of services, and continued dependence on climate-, risk-, and market-sensitive primary industries" (Fountain et al., 2021, p. 137). For Kyle, this perceived geographic vulnerability motivated him to engage in preparedness behaviours, both for safe drug use by buying spare equipment, and stocking up on general, everyday emergency gear. Others attribute their forethought to stock up on safe drug equipment to a lack of alternative distribution options on the West Coast:

> *Ever since I've been on the Coast I've had to think ahead. You know. I never used to. Because in Wellington, for example, you could just go to the machine […] and I don't do it thinking of disasters. I do it thinking of what if I miss [the outreach service staff], or what if I end up having a little play, you know?* (Julia)

Julia says that rural locations present fewer distribution opportunities that force her to be proactive about having sterile injecting equipment — "I've had to think ahead…if I end up having a little play*".* The consequences of not having safe or clean drug injecting equipment on hand is an inability to use drugs and poor health. Perceived health risks (functioning as motivation) are discussed in more depth in the next section.

AVOIDING HEPATITIS C

When prompted on their motivation to access sterile equipment, some of the PWID indicated it stems from their desire to avoid blood-borne viruses. The main way PWID contract blood-borne viruses is by sharing infected injecting equipment (Grund et al., 1996). As already discussed, reducing blood-borne virus rates is one of the primary harm-reduction goals of NEPs (Aitken, 2002). Participants (Kyle, Sebastian, Iris, Max, and Hazel) specifically spoke about their wish to avoid Hep C (HCV)— a blood-borne virus that affects the liver and, if left untreated, can cause liver disease and liver cancer. Moreover, HCV treatment is a lengthy and unpleasant process (Friedman & Contente, 2010; Mann et al., 2006). Max recants how important it is for him and his partner to avoid contracting HCV:

> *No, [my partner and I] are very clean, cautious Hep C people, we don't have Hep C, and neither of us have ever shared [with others in the community], nor have I shared between me and my partner […]. We've never pushed a needle out to anybody that could have a dirty. We're very strict on that.* (Max)

In this excerpt, Max describes his injecting practices as unreservedly safe: "neither of us have ever shared, and we're very strict on that" - this indicates that Max always uses new NEP products. By identifying as — "very clean cautious Hep C people", — it seems that Max values being responsible. Maccoby (2010) suggested that people are more motivated when their responsibilities are meaningful and associated with their values. Since being safe from blood-borne viruses is important to Max, it is postulated that in emergencies, Max is unlikely to compromise by sharing equipment and would attempt to find other ways to access NEP resources in emergencies. Moreover, identifying as someone who is 'clean' suggests Max is motivated by adhering to a moral standard of cleanliness. The notion of clean in this instance means safe injection practices. Kyle talks about the current social trend of safe and risk-free injection practices and how this has resulted in lowered HCV rates:

> *[In the '80s], there were so many people that all shared needles and a group of them all got HCV. It was just so prolific in New Zealand. [Now] people are generally way more careful.* (Kyle)

Kyle's narrative highlights how historical and social trends, as well as health policies, influence safer injection practices. During the 1980s, the AIDS epidemic was a driver for NEP (Aitken, 2002). Hazel and Isaac's narrative demonstrates how the first-hand experience of HCV can drive people to want to access new equipment:

> *[My partner and I] have both had HCV twice and done the old Interferon twice […] causes [us] bad anxiety when you go looking or knocking on someone's door, and they make you go away "na, I got nothing."* (Hazel)

Driven to avoid reinfection and more Interferon treatment, Hazel and her partner's previous experience of HCV and treatment means they are anxious about when they are unable to access sterile equipment from a key contact distributer. Treatment for HCV was sufficiently unpleasant for Hazel, and she represents how she does not want to go through that form of treatment again. The Interferon Alpha (IFN) treatment for HCV is typically a long process (between 24 to 48 weeks) (Friedman & Contente, 2010; Manns et al., 2006) and can present a range of side-effects including flu-like symptoms, fever, insomnia, nausea, vomiting, and diarrhoea (Friedman & Contente, 2010; Mann et al., 2006). Although it seems more modern treatments are more effective, with less side effects[5] (Ministry of Health, 2021). The affective heuristic, or in other words, emotional responses, play a large role in people's perception and responses to risk. Such that it can be deduced that for Hazel, a negative emotional response to HCV treatment influences her decision or evaluation of choosing to opt for approaching a key contact to secure safe drug injecting equipment (Schwarz and Clore, 1996). This type of narrative was common amongst the PWID in this study. The following section explores how negative feelings associated with nasty immediate health consequences also act as motivators for PWID in this study.

AVOIDING A "DIRTY SHOT"

A "dirty dose" or "dirty shot" is a general expression for an injection that makes PWID ill or causes an abscess from using equipment contaminated with toxic substances or infection-causing microbes (Jauncey et al., 2010). As demonstrated by the following excerpts, for PWID, a dirty shot can be an intensely negative experience. Sebastian describes experiencing "dirties" as the "worst experience of my life", something that would motivate him to be open to alternative ways of accessing equipment in disasters:

[5] Since 2016 direct acting antiviral (DAA) HCV medications have been funded in Aotearoa New Zealand. Some since 2016, and since 2019 DAA's for all genotypes (Aluzaite et al., 2020). DAAs are less unpleasant with fewer side-effects, and have shorter treatment period (8 weeks with Glecaprevir + pibrentasvir) (Best Practice Advocacy Centre New Zealand [BPAC], 2020).

I'd find another way. Maybe I'd just use the internet, find another way […] 'cos if you reuse them, it's not worth the risk 'cos you end up getting, what they [call] "dirties" […]. When you use old equipment, you get a bit of a blood infection, but it happens instantly. Next minute you have a headache that's worse than a migraine […] the headache keeps building and building, the only thing you can do is put a cold flannel on your head and try and sleep. [Experiencing the symptoms of a dirty shot] was the worst experience of my life. (Kyle)

For Kyle, the symptoms of a "blood infection" through a dirty shot was unpleasant enough for him to avoid using old and non-sterile injecting equipment. When prompted on what he would do in a situation where the outreach service was unavailable, such as through a natural hazard, he indicates that he would — "find another way". In the following excerpt, Sebastian echoes Kyle's earlier sentiment that re-using equipment is not worth the health risk. Sebastian indicated, however, that the reason it would not be worth it is that symptoms when you are unwell from a *dirty shot*, overshadow any drug-induced euphoria:

Why would you risk having a dirty shot to feel better if it will make you worse anyway? If you have a dirty shot, it gives you an instant headache. [You] feel like shit, so it's like you didn't have anything at all. (Sebastian)

For people who are substance-dependent, such as Sebastian, the primary motivation for using equipment in the first place is to feel the reinforcing effects of the drugs. As mentioned, drug euphoria can act both as a strong positive reinforcer, but also a strong negative reinforcer through the alleviation of pain (Wise & Koob, 2014). The negative symptoms of a "dirty-shot" can overshadow, and thereby undermine these drug-based reinforcers, giving logic to Sebastian's justification for not re-using equipment.

In this section of the analysis, psychological level influences were analysed, revealing a range of differences in motivation for engaging in preparedness activities or accessing secondary services in a disaster. The key drivers revealed the following factors to have the strongest influence on motivation: concern about becoming ill (predominantly HCV), avoidance of experiencing negative feelings (HCV treatment, "dirties"), and lastly, the drug-dependent compulsion of addiction seems to also be an underlying driver both for not being motivated (disasters and health are a low priority), but a driver for some to not want to experience unpleasant effects, and therefore access equipment. The difference in motivation is likely indicative of higher-level motivations at play that were left unmentioned. Harris and Rhodes (2013, p.4) state that: "individual-level concerns have a context, in that they interplay with both social as well as systemic factors". In the following section, social influences are analysed.

SOCIAL INFLUENCES

This next superordinate theme represents the influences of access related to *social* elements. The social worlds for PWID in this study include friends, family members, other PWID, local community members, and NEP staff. Formal and informal social relationships can generate powerful resilience to emergencies (this includes accessing necessary resources) (Miller, 2012; Norris et al., 2008; Paton, 2019; Paton et al., 2014; Sherrieb et al., 2010). The strength of networks lies in collaboration, social cohesion, and the empowerment of people (Gil-Rivas & Kilmer, 2016). The importance of social connection has been recognised as important to the people of Aotearoa New Zealand, in the aftermath of natural hazards, including the 2011 Christchurch earthquakes (Berno, 2017; Rivera-Muñoz, 2021), the 2016 Kaikōura earthquake (Prayag et al., 2020), and the 2019 terrorist attacks (Anwar & Sumpter, 2020). As such, the National Disaster Resilience Strategy (2019) (which outlines the vision and long-term goals for civil defence emergency management in Aotearoa, New Zealand) recognises that social connectedness and a culture of mutual help is key to good disaster preparedness and resilience practices (Ministry of Health, 2019). This section explores how PWID perceive and experience social relationships and how they influence access to NEP equipment and services. This section reveals the important role of the key contact system and peer workers.

COMMUNITY NETWORKS: THE KEY CONTACT SYSTEM

Key contact systems, as discussed in an earlier chapter, function as a secondary distribution system by linking PWID together in the community for equipment distribution (Dechman, 2015; Des Jarlais et al., 2002; Huo et al., 2005; Parker et al., 2012; Valente et al., 1998). PWID that are key contact distributers on the West Coast are supplied with one-for-one equipment by NEP staff, which they can distribute from their homes. This includes 3ml syringes and a range of needles. Key contact systems are particularly effective in rural locations, alongside an outreach service, as these areas are likely to lack alternative distribution options, should the main distribution sources be unavailable (Dechman, 2015; Parker et al., 2012). Overall, the participants' excerpts revealed that key contact systems could be a useful resource for PWID in disasters, particularly as they are local, and a good "load-up" point. However, simultaneously, the findings of this research also indicate that interpersonal conflict can complicate the key contact systems' efficacy. Both these points are elaborated on in the following section.

KEY CONTACTS AS A SECONDARY DISTRIBUTION SYSTEM

The NEP staff member spoke of the staffs ability to arrange injection equipment remotely to people who need equipment on the West Coast of the South Island, usually at short notice, by calling a key contact distributer and asking them if

they are okay with someone coming to pick up equipment from their home. This is explained in the following quote:

> *If someone runs out of gear, I've got somebody I can ring at ten o clock at night and say, "can somebody come to your back door and grab a couple of needles?" And they will go "yay or nay". Sometimes they'll say, "Hey look, I've got somebody here, can you ring another one?".* (NEP staff)

As suggested, the backstop service offered by the key contact system act as an important harm reduction strategy by maximising NEP accessibility. NEP staff act as middlemen helping arrange equipment remotely. Moreover, it proves to be a flexible system that removes time or geography as a barrier to access. In the following excerpt, Sebastian reinforces the sentiment that the key contact system maximises accessibility for PWID:

> *There's always someone who's got enough. I've never had any issues. I've always had enough, and some people have come to me to get clean gear.* (Sebastian)

Sebastian makes use of key contact distributors but also works as a distributer himself. All people in this study have lived experience of drug use and therefore recognise how important it is to have access to drug injecting equipment and help each other when needed. The importance of social networking on the West Coast is really noticeable in emergency situations. This can be extended to disasters such as flooding events or COVID-19 when the NEP mobile service is unable to travel from Nelson through to the West Coast because of road closures or stay in place measures, such as lockdowns.

The following transcript indicates that NEP staff used the key contact distributers as a "load-up" point during the recent Aotearoa New Zealand COVID-19 level 4 lockdown period. During this alert level, people were prohibited from gathering in public spaces and all, but essential businesses were closed. The NEP (including the outreach service) was deemed an essential service and able to continue operating with significantly reduced hours (Block, 2020; Ministry of Health, 2020). There was a brief period prior to the level 4 nationwide lockdown wherein NEP staff were unsure whether the NEP would be declared an essential service. In this period, staff travelled to the West Coast to ensure there would be plenty of stock in case the NEP was not classified as an essential service, and therefore unable to travel to deliver stock:

> *I loaded them up massively with the one-for-one, especially with the free stuff, and I had a bit of spare stock that had been stacked away over time that I was able to distribute, so they were left in a very good position to get through maybe two-three months. But if you have a cataclysm that lasts longer than that, they'd be struggling.* (NEP staff)

The NEP staff member described how the key contact distributers became a load-up point; by supplying distributers with two to three months' worth of one-for-one equipment, they function as a safety net for PWID in the community and themselves. Interestingly, and not a focus of this research, but there was no mention of access to the drugs for use in the syringes and other equipment. Research by Blake and Lyons (2016) found that people on OST were concerned about being able to access their medications during adverse times. In the following except Ben alludes to the resourcefulness and resiliency of PWID, in that no matter what "did go down", access to "ends" would be possible:

> *Lots of [key contact distributers] have heaps of needle ends and at the end of the day, if you're worried about it, say an accident did happen, and the bridge did go down, most would always have a shitload of ends.* (Ben)

Like Ben, the NEP manager explains below how these storage points have been a source of community resilience in natural hazards but also indicates there could be limitations to accessibility:

> *We know our key contact [distributers] are loaded up with plenty of spare, but we know most people, like I said, if there's floods, the rest [of the PWID community] are going to be struggling to access equipment.* (NEP staff)

The load-up point does require PWID to share equipment. In the excerpt above, the NEP staff member was referring to the COVID-19 level 4 lockdown, which is a unique human-induced disaster situation where social distancing measures restricted the distribution of sterile injecting equipment — this included key contact distributers. Whilst the NEP was deemed an essential service, meaning that for PWID, all services remained operational during the Aotearoa New Zealand COVID-19 level 4 lockdown period, as indicated in these findings, barriers such as cost, transport, or not wanting their drug use to be known, prevented people from using pharmacy-based NEPs. As such, the key contact system was the only local service PWID spoke about using outside of the outreach service. Others have pointed out that key contact distributers do not have to share equipment in disasters when resources are scarce but typically do:

> *What you generally see in these [rural] areas, is a really positive response when this sort of thing happens, rather than a negative response, and that's what we saw during [the Christchurch earthquake] period too, so guys that ran out had friends that they knew might have something. "Could you lend me a butterfly? I'll pick you up when we have some equipment" […]. The ones that did have money, the ones that were working actually supported those that didn't have money and weren't working […] I think what we find in the rural areas is that they're so much more used to having to look after each other and*

not just themselves whereas in the cities people are looking after themselves first and foremost. (NEP staff)

In this quote, the NEP staff member depicts the increase in prosocial behaviour between PWID in times of resource scarcity. Others (Rodriguez et al., 2006; Vardy & Atkinson, 2019) found that the inclination to give aid when one is in need is a typical response for people during times of adversity. Although potentially counter-intuitive due to limited resourcing, giving aid in times of personal need has been recognised as an adaptive survival mechanism through either direct or indirect reciprocity. These processes are thought to enhance people's well-being (Axelrod & Hamilton, 1981; Trivers, 1971). In this study, PWID themselves also spoke about a tendency for people to be more generous during disasters:

It's quite interesting about earthquakes. Some disasters like that seem to bring people's — compassion, seem to override that animal instinct of "mine mine mine". (Christy)

For Christy, the "compassion" she feels from within the PWID community in hazardous events, like earthquakes or pandemics, seems to challenge her expectations that PWID would behave in less community-minded ways. Her excerpt suggests she thought self-interest — "mine mine mine" — would override people's desire to act in accordance with the collective (Furst et al., 1999; Furst & Evans, 2015). Additionally, the products distributed through the key contact system is free, which also helps support a spirit of generosity. Conversely, social relationships can also be hindered by interpersonal issues amongst communities, such as PWID. These issues are explored in more detail in the next section.

CONCERNS WITH THE KEY CONTACT SYSTEM: GATEKEEPERS

Whilst community networks were identified as a strength during adverse times; the following section explores how these very network connections are also steeped in conflict, stigma and discrimination. PWID with social power that work as key contacts, can work as gatekeepers or holders of knowledge or resources (Blake et al., 2017; Vohs et al., 2006). There was concern about this as a barrier for some of the PWID in this study. While key contact distributers were the only access to safe injecting equipment, they were positioned as gatekeepers in that they could decline help by not supplying equipment, especially if there had been previous or new intragroup conflict between PWID. Ben indicated that he, as a key contact distributer, has the power to refuse to disseminate stock if he does not feel respected by someone looking for stock:

They say we are a [Key] Contact, but if we don't like you, we don't want you at our house. (Ben)

This gatekeeping behaviour described by Ben in this previous excerpt, was explained by the NEP staff member as a result of intragroup conflict:

> *Sometimes addicts are the worst at stigmatising themselves, you know? I often see addicts pointing the finger at each other. And that hurts, actually, to see people doing that. 'Cos we need to be strong together sometimes, and this is the way you keep us weak […] stopping us coming together, and stopping us from feeling good about themselves or valuing ourselves in any way.* (NEP staff)

The intragroup conflict that exists includes judgements and stigmatising behaviour, and as the NEP staff member argues — [it] "keeps us weak"*;* it has a detrimental effect on the strength of already stigmatised individuals (Corrigan et al., 2009). This type of response is not surprising as often stigma becomes internalised and enacted between and within vulnerable groups. For instance, according to Corrigan and Watson (2002), a possible consequence of self-stigma, where prejudice is internalised or where the stigmatised turn against themselves.

The wider consequences of this go beyond physical harm-reduction; as Elaine illustrates, it can diminish the mental health of someone that might already be struggling or have problems in other areas of their life. Elaine said that the inability to access equipment from a key contact distributer is anxiety-provoking:

> *It causes bad anxiety. My husband has bad anxiety when he knows there's no needles or anything like that. You go looking or knocking on someone's door, and they make you go away, "nah, got nothing".* (Elaine)

In the world of addiction, many already have pre-existing physical or physiological health conditions (Bartoli et al., 2014; Hakansson & Berglund, 2013). To be denied equipment for an already marginalised group can further negatively affect the physical and psychological wellbeing of PWID. The key contact system and sharing behaviours within the PWID community is an effective secondary way to distribute equipment alongside the outreach service and can serve as a backup in emergency situations. However, as the previous findings indicate, at times this secondary source for access to equipment in an emergency can be hindered by the role of intragroup dynamics between PWID. As such, it is important that strategies are in place to avoid gatekeeping behaviours. Overall, however social connections and peer advocacy is a key function of NEP, as we explore below.

PEER WORKERS: PSYCHOSOCIAL SUPPORT

In Aotearoa New Zealand, the NEP adopts a peer-based system where the majority of staff members have lived experience of injecting drug use and are therefore able to offer support based on lived experience (Hay et al., 2017). This consists of providing social and emotional support, offering advice, sharing life experiences and leadership, enabling workers to connect to PWID in a relationship

based on mutual understanding and trust that carries over into emergency situations and disaster resilience. The provision of psychosocial support to PWID is crucial as a large part of the NEP service, besides reducing blood-borne virus rates and injection-related injuries (Hay et al., 2017). With lives that can be chaotic due to the lack of socially sanctioned resources for PWID, having a peer-based service based on a model of trust and intentional psychosocial support and outreach service is crucial (Hay et al., 2017; Lang et al., 2013; Paquette et al., 2018). PWID in this study revealed that formal social networks in the form of peer-workers provide a key source of resilience for PWID in everyday life to buffer social vulnerabilities that directly and indirectly support accessibility to NEP products. The following excerpt represents the way PWID and their support is perceived:

> *[NEP staff member is] just so approachable. You know. Non-judgemental and supportive. He's brilliant, and just about everybody chats to [the NEP staff member]* (Julia)

> *Everyone over here loves and respects the [NEP staff member]. He does so much for us over here. Yeah, you've just got no idea. He's not just our [NEP] guy, we class him as a friend outside of his work.* (Harriet)

These excerpts highlight that in everyday life, PWID feel genuinely cared for by the NEP staff members, which links to the key principle of NEP being a peer-based exchange service. Harriet states that the NEP staff — "does so much for us over here", — showing how PWID can feel socially supported and that this support extends across the PWID community. The following excerpt by Harriet captures a sense of trust towards the NEP staff member because whatever the circumstance, equipment will be delivered or alternatives arranged:

> *[NEP staff are] clever, they can always get to us today, and they're always here…they are punctual, and lets, you know, the day beforehand and if they can't [come], you know, the system is really good. It [runs] really well.* (Harriet)

Characteristics of clever, punctual, and organised work well to produce a useful system as is positively asserted by Harriet. It demonstrates that PWID feel supported by the NEP, and specifically this staff member. This extra layer of support for PWID is intentional — the NEP staff member speaks about providing support at every opportunity:

> *It's like […] there's nothing really else solid in their lives a lot of times, but the time the needle exchange van comes every month, it's so reliable, and they know I will be there to answer any questions or whatever support I can. That is the way I've worked with this group, I've given that extra layer of support, every opportunity I can […] We also know that they go to the pharmacies and when they get stuck -they all talk about this stuff (stigma) down [with use too]. They all know exactly when I'm coming, and they all have their questions*

prepared for me (laughs) when I get there. Or else they'll text me-yeah. So I think in many ways, [PWID] are as proactive as they can be around everything. (NEP staff)

The peer-support offered by the NEP staff, and this excerpt shows the importance of service consistency and reliability. It also extends beyond equipment, the extra layer of social support is important because PWID are often excluded in most areas of their lives (Room, 2005). For PWID, experiencing hope, optimism, connection contributes to emotional resilience (Otake et al., 2006). The quote above also represents reciprocity and mutual social support and knowledge sharing as the PWID in this research were described as being — "as proactive as they can be […] have their questions prepared for me*".* Pescaroli and Alexander (2015) argued that reducing vulnerability loops at the ground-level can influence the overall resilience of larger systems by producing bottom-up positive feedback. Kyle suggests that having access to resources (and preparedness) is dependent on open communication with peer-workers:

You just gotta have communication about telling [the outreach staff] what's happening in your life, yeah having communication channels [open], just being prepared. (Kyle)

Here Kyle was responding to a query about what he would do in a disaster situation. Kyle said that for him, resilience requires maintaining a positive relationship with the NEP manager. The benefits from these types of relationships in everyday work buffer vulnerabilities and provide psychosocial support for PWID in emergency situations. Kyle also suggests that he trusts the NEP staff to take a leading role in emergencies, which Dynes (2006) referred to as Authority relations. In Dynes (2006) theory of social capital, it is argued that social relationships, such as the formal relationships between peer-workers and PWID, becomes a form of social capital in disasters. Authority relations sees one or more individuals playing leading roles in emergencies by making decisions for the group.

PEER WORKERS: PRACTICAL SUPPORT AND FLEXIBILITY

Interweaved and core to the psychosocial support discussed above is practical support. The PWID in this research report that having NEP staff be practically supportive and adaptable to attend to their needs largely enables access to injecting equipment. The PWID in this study express great appreciation for the way the outreach service staff manage and prioritise accessibility to equipment, no matter what the personal cost to the staff themselves. This dedication continues during disasters. COVID-19 level 4 lockdown, for instance, presented additional challenges that were overcome by adapting ordinary service arrangements to fit into that extraordinary event. In the following excerpt, the NEP staff voice the importance of flexibility as core to a peer-based service:

I'm really okay with anything that goes down there (on the West Coast). I have to be open to any situation […] I've never not been able to manage to get somebody sorted out within a 24- hour period on the West Coast. (NEP staff)

Being "open to any situation" meant during the COVID-19 lock-down travel restrictions had to be overcome because it delayed the outreach service schedule by a week. As previously discussed, the NEP staff member was able to ensure access in the evolving pandemic event:

Key Contact [distributers] *were stocked up massively with both free and spare non-free stock I could find.* (NEP staff)

This flexibility with service provision and commitment to harm-reduction as peer-staff is commendable. The NEP staff changed their distribution schedule and distributed gear for free when it would usually have been charged. NEP staff were also proactive by arranging alternatives for PWID to access equipment through courier service or mail orders — "[NEP staff] called us by phone to ask if we needed support via mail" (Alice). Additionally, NEST, the national body for NEP, opened an online store so PWID could purchase NEP equipment without breaching distancing procedures. Whilst the participants in this research were aware of this service, during the interview, no one talked about having used it, which appeared to be because they were reluctant to use the internet. For instance, Julia, Christy, Kyle and Max expressed either an inability to use the internet or said they did not have an internet connection at home. Christy said:

I don't do online. I don't go online, and so [in a disaster] I would have to be able to ring up and order, and that's fine. (Christy)

It is not uncommon for PWID to not have access to technology or have difficulty accessing computers, particularly for people living in rural locations, although technology is playing an important role in disasters (Blake et al., 2020; Tian et al., 2009). However, as Christy indicates, PWID, for whom the internet was inaccessible, were motivated to use other services (the courier service). When travel restrictions were lifted, the outreach service staff took care to carefully follow advised safety precautions. This meant taking pre-orders before travelling and packing stock in boxes, and leaving them at back doors. Payments for the stock were left in mailboxes or on windowsills rather than being handed over in person:

We're just gonna put things in place, we'll take orders before I go, we'll pack them in boxes, and leave them at the backdoors and money will get handed out in windows or put in mailboxes for me. We'll just make sure that we've got plenty of safety processes in place. (NEP staff)

When PWID were asked about how they were affected by the COVID-19 level 4 lock-down period, overall PWID reported indifference. For example, when Kyle was asked, he said the following:

"*It didn't affect me at all, things were in place, and I just used the courier service with [the NEP staff member].* (Kyle)

In this excerpt, when Kyle says — "things were in place", — he is most likely referring to the social and practical networks that operated via the NEP during this period. This flexible and response peer-support seems to have had a positive impact on PWID responses despite major environmental and social changes, including restriction in movements and delays in the outreach service, and seems to contradict predictions by Farhoudian and colleagues (2020), who suggested that PWID would experience adverse physical and psychological consequences to existing physical and psychological comorbidities (Farhoudian et al., 2020).

CHAPTER 4 SUMMARY

The findings revealed in this chapter emphasise the importance of forethought and proactive engagement to access equipment in emergency settings. Important drivers for motivation to be prepared were identified, for example needing equipment, geographical location, preventing blood-borne viruses and being sick from unclean drug injections. However, inconsistency in motivational drivers for PWID highlighted the contextual aspect of motivation and how it interplays with wider social and systemic influences (Harris and Rhodes, 2013). There was also a difference in motivation to prepare for access and preparedness for disasters more generally.

Additionally, social influences were explored. Social networks, including community networks and peer-based connections, were identified as strengths for accessibility, both directly and indirectly. Practically, social networks provided pathways for backup stock to reach clients. Indirectly, social networks enabled access to injecting equipment as psychosocial support serves as a buffer or provides a sense of resiliency against social vulnerabilities. Key contact distributers and peer-based NEP staff provided psychosocial support, and an antidote to commonly experienced practices of stigma by PWID allows for the strengthening of social capacity and resilience of PWID. Important to this was practical actions and flexibility in service delivery. PWID, as with any social grouping, are embedded in structural systems and practices that influence who they are and how they can be, which all plays out in disasters settings. The following chapter attempts to make sense of structural dimensions and the impact of social stigma on accessibility to NEP services.

CHAPTER 5 – FINDINGS

STRUCTURAL INFLUENCES AND STIGMA

This chapter represents both structural influences and stigma on accessibility or barriers to NEP products and services in disasters. Structural influences relate to the physical environment, infrastructure, emergency management, and health service operation. Previous studies have shown that operational elements related to the functioning of a health service can hinder accessibility for PWID. Commonly referenced service features include the cost of health services (Islam et al., 2012; Miller-Lloyd et al., 2020; Roberts et al., 2010b), distance to health services and operational hours (Falk et al., 2020). In this chapter, service-related features that act as an enabler was service confidentiality, natural hazards-and human-induced disasters, such as road closures and equipment cost, were identified as barriers. Although not analysed, in-depth aspects of this section demonstrate the influence of stigma on access. This chapter also provides a more focused discussion on stigma and how it acts as a barrier to accessing resources in an emergency or disaster. This includes access to equipment via pharmacy-based NEPs and concerns about stigma influencing responses by emergency managers or other people during an emergency. This chapter ends by discussing a range of solutions to the structural and stigma-based barriers that PWID encounter.

SERVICE CONFIDENTIALITY

Service confidentiality was a notable finding regarding the NEP service and resource accessibility. The Needle Exchange Services Trust Incorporated (NEST), as the national body overseeing NEPs, takes the privacy of service users seriously. NZNEP advocates and adheres to the Privacy Act (1993, 2009). Central to protecting the privacy and anonymity of people using NEP services is that they cannot be identified in any way; this includes not holding, using or disclosing personal information and destroying personal information (NZNEPc, 2021). Another way the NEP services are encouraged to protect service users' privacy is that all products and receipts are discreetly packaged; there is no overt signage or promotion on injecting equipment or courier delivered items, the outreach service van, or bank statements from online transactions (NZNEP, 2021).

The PWID in this study indicated that service confidentiality was indeed important to them, and adherence to privacy likely contributed to their positive engagement with the NEP service. For instance, Harriet expressed gratitude for service confidentiality as it allows her to keep her injection drug use a secret from her children:

There's absolutely nothing that says this is the needle exchange unit at all. So you can walk in the house, and the kids will think you're walking in with a bag of grocery shopping. (Harriet)

Harriet's appreciation for privacy is motivated by her need to hide her drug use to protect her family. Protecting families from knowledge of socially discredited ways of ingesting drugs suggest that stigma and its harms are having an effect.

For broader services dealing with PWID service, confidentiality is also important. In the following excerpt, the NEP staff member also mentioned the importance of confidentiality for parents who can be deemed "unfit parents" if their intravenous drug use becomes known, there is a high risk of losing children to child protection services (Schafer, 2011):

[Particularly parents] don't want to out themselves in any shape or form, they don't want to connect with services like ours [NEP], because of the fear of being outed when they have children in the house when they're injecting. 'Cos the instant connotation for most people is that that's wrong and dangerous, and the kids are at risk. I see it quite differently, you know, like often that might be the case, especially in some young users, who are really loose and it's all about their drug use and not about the children, but in a lot of cases, especially those who get on OST are very stable. They're still injecting, but they are very stable, and it's reasonably safe. (NEP staff)

The need for service confidentiality is also apparent when PWID have family members visiting; this requires the outreach service to be extra cautious so as to not blow their cover:

The odd [client] will come to me to say they don't want me to front up to their home, and it's usually because they've got a family member that's visiting or something like that. (NEP staff)

Since drugs drug use is highly stigmatised (Ahern et al., 2007; Luoma et al., 2007; Room, 2005), particularly in smaller rural towns, being recognised as someone who uses drugs can instigate a range of negative social outcomes, such as limiting job prospects and negatively impinging on social relationships (Fadanelli et al., 2020; Thomas et al., 2020). Scholars predicted that the level 4 lockdown restrictions would cause extra difficulties when accessing services since confidentiality is more difficult in unique conditions like a COVID-19 level 4 lockdown (Radfar et al., 2021). In Aotearoa New Zealand, lockdown safety measures required everyone to stay within a smaller family-unit. Whilst it could be argued that this could have hindered the ability for outreach services to visit people's homes (because under these conditions, it is hard to secretly engage in a service), it could have also caused PWID to not use the outreach service out of fear of being "outed" as someone who uses drugs. However, this did not occur for anyone in this study. This is likely due to the COVID-

19 safety precautions as undertaken by the NEP staff member during the lock-down prevented physical interaction between NEP staff and clients – "I'll leave them at the backdoors, and money will get handed out in windows or put in mailboxes for me" (NEP staff). It could also be due to the range of privacy strategies in effect, such as not using service signage on any equipment (NZNEPc, 2021). This research demonstrated that no confidentiality issues during COVID-19 hindered access to NEP services for PWID. The following section addresses wider infrastructural impediments to access, such as road closures and transport restrictions like those generated by natural hazards.

INFRASTRUCTURE: ROAD CLOSURES AND DISTANCE

The social and environmental consequences of both natural hazards and human-initiated disasters present structural barriers to accessibility. Two commonly mentioned barriers were road blockages and road closures. The outreach service, the online service, and the courier service all utilise State Highway 6, the only viable network in and out of the West Coast, Aotearoa New Zealand. This means that in the event of hazard-induced roadblocks, the outreach service, the online store, and the courier service would be unable to distribute equipment. The PWID in this project were concerned about COVID-19-based travel restrictions and weather-based events, such as severe snowing, which caused road closures. They were particularly fearful of flooding events that precipitate road closures, road blockages, and blown-out bridges. For instance, severe flooding of the Buller River anywhere along the route between Nelson and Westport can cause road closures (Naish, 2021). Participants frequently mentioned the ex-cyclones that struck in the month of February 2018; this included Cyclone Fehi, which occurred on 1st February, and Cyclone Gita on 20th February. The West Coast area was particularly affected by Fehi, as it generated heavy rain and strong winds, leaving approximately 115 tourists stranded at Fox Glacier (near Hokitika) (NIWA, 2018). Julia spoke about the implications of the cyclones closing State Highway 6, stating it affected both the ability of the outreach service to get to people's places of residence, as well as their ability to use the courier service. Julia recanted the event:

> *Lots of people were stranded. And it was a real problem. It ruined the end of the tourist season, and it took a while to rebuild the bridge and traffic was detoured. It was absolutely a major problem […] cos it was the only road. It was the only bridge that got you down South further.* (Julia)

These events are not uncommon and are more frequent during winter. Road blockages also prevent PWID from travelling in and out of the West Coast. David seemed particularly worried about being unable to exit easily. David explains that the geographical layout of the West Coast and its vulnerability to natural hazards can make PWID feel that they are trapped, which in turn increases fear of vulnerability to harm from a *big tsunami, for instance*:

If we had a big tsunami, for instance, the bridge gets wiped out, so you can't leave that way, and of course, we're just a big plateau at the bottom of the hills. We could get wiped out quite easily. (David)

David's excerpt represents how living rurally can make people feel anxious and insecure about environmental events. In this way, ontological security, the belief that the world will continue, is challenged (Blake et al., 2017; Giddens, 1991). Getting "wiped out quite easily" is a powerful description of what can eventuate from a natural hazard risk. Living rurally could also mean being deprioritised in an emergency. Kyle recites his view on how PWID would be treated:

The West coast is a different situation because we're so remote […] we're cut off in case of a disaster. Just a couple of roads that could block, and nothing could come in. And if we had a big earthquake, and we had two roads blocked off, there would be no supplies coming in. The only supplies are essential medical supplies, food and water. (Kyle)

Here Kyle expresses feeling vulnerable, not only in terms of the isolated geographical area that is prone to natural hazards, but also that the geographical location could man that — "there would be no supplies coming in". Here he most likely refers to both NEP equipment and OST (Opioid Substitution Treatment) such as methadone. Blake and Lyons (2016) argue the physiological and psychological dependency of OST medication can cause particularly distressing consequences if medications are suddenly halted by an emergency event, including physical and psychological withdrawal symptoms, which can also be more dangerous depending on the combinations of drugs taken at the time. This explains why certain people would be worried about OST accessibility. As well as the challenge of distance, certain rural places such as the West Coast have limited infrastructure that can hinder quick access to medical resources and money machines. Given the complexities of living rurally, PWID with existing psychosocial precarity, such as financial, medical, or social problems, are likely to struggle more. Part of the issue with road closes in rural areas is that, unlike larger towns, there are fewer alternative access routes in and out of the areas and, as such, a lack of access to NEP equipment.

This has been found to be a concern in other rural towns in Aotearoa New Zealand. Following the 2016 Kaikōura earthquake, spatial characteristics, including road access, transportation and logistics, were recognised as one of the main barriers to community resilience (Cradock-Henry et al., 2019). In cases where the roads accessibility was blocked, such as in the previously mentioned 2018 flooding events, some PWID were able to use their backup supply, others however admitted to re-using equipment until outreach access was obtainable again:

Basically, we were just re-using whatever needles we had until they could get through if we couldn't get a courier to do it. (Max)

David, in the following excerpt, also describes rural people as being disproportionately vulnerable in disasters which he attributes to smaller towns having fewer resources than bigger cities:

> *Here in the small town, you can't access what you want readily as in the city. You know, you have lots of options in the city, but here people just sort of bite the bullet. Oh, they do the rounds, see what they can do, but it's a small clicky little town. It's a hard one to compare to even Nelson […]. I think if there was an emergency, [equipment] would have to be free, 'cos you wouldn't have the money […] it's just that money machines would be out, and…electricity could be gone. You know anything could happen, and generally, the first thing that goes is your electricity in an emergency.* (David)

David touches on the lack of alternative options in the rural area of the West Coast (limited banks likely to be shut in the rural areas) and said that given the geographical constraints associated with rural places, equipment should be free in emergencies. With a lack of resources, "biting the bullet" represent how you just have to cope and manage the best you can. Rural locations make people feel more vulnerable and mean there is a greater reliance on social networking (Burton & Peoples, 2014; Pachauri et al., 2014; Pomeroy, 2019). David mentions the ethos of a "small clicky town", likely referring to the social processes associated with trying alternatives dissemination routes for accessing equipment, such as the key contact system, indicating that they have access to secondary sources of equipment but that these can be unreliable.

While this research is focused on natural hazards as barriers, the PWID in this study also discussed other barriers or risks to access; personal issues could also delay the outreach workers ability to travel and deliver stock. Julia mentioned making use of the courier service when this happened:

> *The [outreach service] couldn't get through, so I used the courier.* (Julia)

These findings illustrate the perceived vulnerability PWUD experience while being geographically remote and further away from important health services that are mostly located in larger towns. Vulnerability is increased due to the lack of alternative options to access important health and emergency services. As such, like Julia, Max similarly said that the — *"*West Coast need to get creative about accessing equipment" — and that —"some people would steal injecting equipment from the vet or would ask a friend to buy it for them from the pharmacy".

EQUIPMENT COSTS

In Aotearoa New Zealand, the one-for-one product range (3ml syringe and any sized needle) works on an exchange basis, where stock is free in exchange for every used equipment returned. These can be accessed via the outreach service and key contact system (not pharmacy-based NEPs). Whilst this removes cost as a barrier

for access to some products, the user-pays items are equally crucial for safe injecting practices for PWID. There is a wide range of user-pays items (for example see Figure 1 to 4) that typically cost between one to two dollars per item (NZNEPa, 2021). The following findings indicate that this price can be too much and therefore a barrier to equipment for service users. Given that financial vulnerability can be amplified in emergency situations, the prices of health equipment are an important factor to take into consideration for drug-users:

> *Look, I tell ya, just about everywhere overseas in the Western world anyway, governments pay for the equipment. The one thing we really struggle with as an organisation with our Ministry (health) is why we don't have free equipment across the board. Surely you're gonna get better results. Surely people are gonna be safer, and surely the [long term health] costs are going to be less for this group if we give them what they need to keep them safe. Cos when they don't get equipment. New and regularly, [it] is really phenomenally bad for these people […] In fact, the wheel filters are one of the most important products we have, and we [used to] subsidise. We were giving them away for fifty cents up until recently, and now they've gone to eighty cents[…], and they're going to go up to a dollar fifty.* (NEP staff)

As indicated by this excerpt, staff are not oblivious to the barriers that the cost of equipment create for PWID and the health risks they are subjected to without access to such equipment — "it's phenomenally bad for these people". The NEP staff member finds wheel filters to be — "one of the most import products". As mentioned in Chapter 1, wheel filters attach to the end of syringes to purify liquids. They remove harmful particles (including bacteria) that can cause serious health issues (Keijzer & Imbert, 2011). Other important items in the user-pays range are butterfly needles and larger syringes. Butterfly needles are designed to access superficial veins near the surface of the skin to minimise nerve injuries or vein collapse (Ohnishi et al., 2012). Larger syringes (e.g., 10ml, 20ml, 50ml) are used to inject larger liquid substances, which is often methadone for PWID in Aotearoa New Zealand (NZNEPa). These are important as they avoid the need for multiple injection sites (that occur if using smaller syringes with large amounts of liquid). This further reduces unnecessary risks associated with injection-wound damage. However, PWID in this study indicate they are unable to afford to purchase necessary items at times, and have to re-use equipment as a consequence:

> *When the [NEP staff member] comes, all we get is four butterflies and four barrels, and I have to re-use them until [the NEP staff member] is here next, cos that's all we can afford to do.* (Harriet)

Harriet and her partner's inability to afford clean injecting equipment means they have to re-use their equipment, putting them at risk of injection-related injuries

like abscesses. Similarly, Elaine mentioned that her partner would purchase more wheel filters if the equipment were cheaper:

> *If they could give the whole exchange programme more funding, so things were cheaper, people would access them more. Like Finn (Elaine's partner), you know, if equipment was cheaper, he'd get more red wheel filters, and I wouldn't be on his case all the time and worried about bacteria and him getting some major infection.* (Elaine)

Elaine asserted that her partner does not purchase all the items he needs to prevent him from injection-related harm highlights how structural issues like cost negatively impact financially vulnerable groups. People who are substance-dependent are typically in worse socio-economic positions and, therefore, unable to afford equipment (Carpenter, 2017). Moreover, as indicated by Elaine, the stress of these financial pressures and the health risks are not just felt by those immediately affected but also by those living close to them. The following quote provides evidence of this:

> *If things were free, my mate wouldn't have had a dirty shot, would he? And he still wouldn't have Hepatitis C now. But he's broke. He can't afford to buy equipment. If he ever uses, I'm buying the equipment and giving it to him myself, you know? […] Yea, so we still [give equipment] to close friends, but it costs us.* (Mike)

Just like Elaine, Mike was left with the responsibility to take care of his friend's health by buying NEP products so his friend could avoid harmful health consequences. This demonstrates how the world of addiction can be a tough place when access to the resources to maintain good health is difficult. It also harks back to the importance of social relations and how the PWID community supports each other. Like others, Finn spoke to the cost of addiction and how expensive it is to be addicted to methamphetamine:

> *If you're using meth, you can spend two dollars to get a fit (needle and syringe), but then sometimes you can't [afford it] because it's hard enough finding a hundred dollars every day.* (Finn)

For PWID like Finn, who is drug dependent, this can cause financial pressures, meaning that access to illegal drugs and equipment is problematic. As Finn highlighted, it is "hard enough" sourcing drugs, let alone anything else. This "anything else" includes non-urgent but potentially protective safe drug-using equipment. We can apply this same ethos to emergency disaster situations.

Access to drugs and takes priority over everything else, including personal safety and health. According to literature from the field of neuroeconomics, decision-making around money can be problematic for people who are drug dependent. Scholars found that drug-dependent people tend to discount future consequences

due to neurochemical responses and processes in executive brain regions (Bechara, 2005; Jentsch & Taylor, 1999). Additionally, aside from neurological differences, much of which is triggered by inequity, moral imperatives and social stigma can limit a range of opportunities, including work (Bradford, 2020). The PWID in this study, who were on a Work and Income New Zealand benefit (government support), spoke about the difficulty of financing NEP equipment while on a benefit. Both Sebastian and Kyle reported that beneficiary payments are too low to purchase equipment:

> *I mean, like a dollar sounds fuck all, but if you're on the benefit, it's really quite a lot.* (Sebastian)

At the time of the interviews, the Job Seeker's benefit for a single person over 25 years of age was a maximum of $250.74 NZD per week after tax, with an add-on supplement for housing and winter energy payments (WINZ, 2020). In Aotearoa New Zealand, during intense COVID-19 restriction phases (level 3 and 4) and beyond, people who needed to rely on benefit payments complained that they were insufficient for adequate survival, particularly with the existing housing crisis and other issues, such as having dependents to feed (Elers et al., 2021). Kyle echoed this narrative by indicating he was only able to purchase safe injecting equipment when he received an additional winter beneficiary payment ($20.46 per week) (WINZ, 2020):

> *I've got enough food for four days because with the [winter beneficiary payment], I was able to [purchase extra].* (Kyle)

Besides beneficiaries, young mothers particularly struggle to pay for sterile equipment. Alice, for example, highlighted that drug-dependent parents are sometimes in the unfortunate position of having to choose between caring for their children or caring for their health by purchasing equipment:

> *If [the choice is between] I.V. equipment or school lunches, it's going to be school lunches, you know.* (Alice)

This narrative is not about any moral imperative of 'good or less good' parenting or drug use. It simply highlights the plight of many PWID who make difficult choices every day. It also points towards the unjust situations that can arise when social support systems are inadequate. These excerpts illustrates how some PWID are caught up in the poverty cycle, which is exacerbated by substance dependency and stigma that collectively hinder social and other opportunities. The inability to purchase power and have agency to look after one's health points to wider systemic failings such as catering to the needs of PWID. These findings illustrate that in everyday situations, PWID are unable to access necessary safe user-pay equipment, which could become extreme in emergency situations, such as COVID-19. While these conditions relate to everyday life, they also play out in disaster scenarios which

increase financial hardship for people, particularly those with existing socio-economic vulnerabilities (Elers et al., 2021).

During COVID-19, NEP staff aimed to minimise any financial and social vulnerabilities by using "donation money" (spare money donated by other PWID) to help clients access equipment when need:

> *During COVID-19, I've made sure that the Needle Exchange gets a lot of donations. Every day PWID are leaving their change behind to help others get equipment so we can draw on that for the West Coast as well. I've maybe had 15 or 20 dollars spend, and we've taken it out of the donations and [NEP clients] reimbursed me, but sometimes I'll cover it too.* (NEP staff)

The NEP staff member reported having to cover the equipment cost for those with an inability to purchase equipment, thereby picking up the "slack" and compensating for systemic vulnerabilities that PWID are caught up in. However, it is important to note that while the NEP staff member willingly shares his resources, it can possibly have detrimental effects on the NEP staff member by draining his resources — "sometimes I'll cover it too*".* The financial shortcomings of PWID as a result of inadequate support systems, addiction cycles, and stigma can negatively affect resource accessibility having to be covered by NEP in ordinary and extraordinary times. Further accessibility and infrastructural issues are unpacked in the next section, as participants reveal more about the stigma that prevents them from using certain services.

SOCIAL STIGMA

As indicated previously in this thesis, stigma towards PWID is a barrier to health care resources in emergencies. People who are stigmatised are discredited because of traits, qualities, or conditions they possess, after which they are mentally classified by the public as a rejected stereotype, which spoils their identity (Goffman, 1963). Drug use itself is a socially scorned behaviour, or as Room (2005, p. 146) puts it, drug use is associated with a "heavy load of symbolism" and "deviance". As a result, people who use drugs are typically the subject of stigma (Ahern et al., 2007; Luoma et al., 2007; Room, 2005). It was clear from the participants' interviews that stigma influences their everyday life and does so on different dimensions (e.g., psychologically, physically, socially, and systemically). Scholars have developed stigma theory to include the wider consequences and how it is perpetuated throughout all levels of society (within the individual, by the general populations, and in the structural systems) (Corrigan et al., 2014; Jones & Corrigan, 2014; Link et al., 1989; Perlick et al., 2001). Most of the PWID in this study displayed self-stigma by recognising and internalising that the public discriminates against them (Link et al., 1989; Perlick et al., 2001). Room (2005) explained how stigma diminishes the power

of individuals. In this findings section, PWID reveal how stigma can hinder access to resources in disasters. The NEP staff member expressed the disruptiveness of stigma on PWID by describing it as their — "biggest battle by a long way":

> *Stigma is our biggest battle by a long way. Needle Exchange-wise these days PWID are prepared. But the rest of their lives, they really lack so many things, and it's the stigma that does that[…] we see it happen regularly in small communities. I guess rural New Zealand is a wee bit more judgemental than some of the larger cities. And for a good reason too, in rural locations, [non-drug users] have a lot more to lose from the PWID they judge. A lot of addictions and crime are sourced from them.* (NEP staff)

In this excerpt, stigma is placed as the root cause for many of the issues faced by PWID. It is not the "needle exchange" aspect of being a PWID that is the issue because people are "pretty prepared". It is stigma that underlies accessibility. The NEP staff member identifies rural communities as having greater stigmatising attitudes. By saying — "in rural locations, [non-drug users] have a lot more to lose", — he justifies the "judgemental" nature of non-drug using residents due to fewer resources existing in rural locations, including social networks. People who are considered disruptive, and he refers to "addictions and crime", are thereby positioned as more disruptive.

One way in which stigma from members of the community played out was towards young mothers who are also PWID. NEP staff said that NEP struggles to connect young mothers with their services because young mothers are afraid of the consequences if they "out" themselves as drug users. These consequences include having their children uplifted and removed. The fear of losing children due to revelations about drug use is also implicated in disaster preparedness actions. As a way to protect herself and her children from being exposed to a lifestyle that is not socially acceptable in the main, Christy spoke about her children being barriers to storing any (or extra) injecting equipment in their home:

> *I know some people that don't have anything extra at all. Like one person I know, she's got a daughter, and she doesn't want her exposed to what she's doing in any way, shape or form, so she doesn't have anything in the house.* (Christy)

That injecting drug use is something people want to keep private illustrates the largely taboo and stigmatised nature of the activity. It also alludes to the stigma, shame and embarrassment associated with this identity. The PWID talked about the negative social consequences when they are recognised as someone who uses drugs on the West Coast. For instance, it can cause relationship problems between family members or other members of the community. Kyle spoke of his family ostracising him after they found that he was using OST:

My family won't have anything to do with me because they found out I'm on the methadone programme. (Kyle)

PWID also spoke about not being welcomed into recreational groups or community activities and not being able to find work. Max was kicked out of his regional golf team for being on methadone, even though he was receiving methadone as part of an OST programme, which is a legally sanctioned harm reduction programme (Ministry of Health, 2014). Being banished from his golf team transpired despite Max having a therapeutic drug exemption from the national golf authority:

I'm not allowed to play Tasman golf cos I'm on methadone script even though I have a therapeutic drug exemption from New Zealand golf to put me in their team. (Max)

Being banned from a social club is appalling and signifies the depth of social stigma and soiled identities, as defined by Goffman (1963). Furthermore, Ben and Julia both talked about having difficulty finding jobs on the West Coast because of their drug use. Similarly, Katie recanted how going into a chemist to pick up methadone in her work uniform likely led to the loss of her job:

I had a job when I got here and […] when I had to go in [to the chemist to pick up methadone] with my uniform, the chemist isn't private whatsoever […], and I mean it really cost me my job. (Katie)

These examples from Kyle, Max, and Katie illustrate the tangible discriminatory consequences that exist in rural towns, which are founded on the negative stereotypes and stigma for PWID. Dunlop and Golub (2020) were concerned that fears about drug-using identities could stop people from accessing NEP services during the COVID-19 quarantine. When a small group of people are in close proximity for a long period of time, it is difficult to be discrete or private. As discussed earlier in the thesis, NEP staff doing outreach to people's homes without anyone noticing could be tricky. Nevertheless, during the interviews, no one spoke about the COVID-19 level 4 lockdown preventing either the storage of equipment, the ordering of equipment, or meeting NEP staff (during the COVID-19 period, the outreach service was operational). When PWID expressed fears of being disregarded in emergency settings, interestingly, most were concerned about their access to OST instead of injecting equipment, indicating that either NEP accessibility is not considered problematic or that access to OST is more important. Similarly, Blake and colleagues (2020, p. 5) found stigmatising beliefs to manifest in disaster-response settings for people using OST services in Aotearoa New Zealand. People receiving OST had beliefs that their medical needs would be a "low priority" by people in command of Community Hubs or emergency management spaces. This, in turn, can obstruct

people from accessing help, especially if they are concerned about encountering judgemental emergency management personnel (Blake et al., 2020).

STRUCTURAL STIGMA: DEPRIORITISED IN EMERGENCIES

This final superordinate theme illustrates how stigma, which manifests in everyday life, can present barriers in relation to access to social institutions on a macro (global) level through policies, discourses and cultural norms (Blake et al., 2020), including emergency management. Both Elaine and Isaac argue against the negative moral associations the public hold towards the term's druggie or a junkie. Elaine made a clear distinction between someone that uses drugs and the negative stereotyping that goes with it so as to clearly demarcate themselves from the negative moral association associated with stigmatising terms:

> *[…] There's a difference between junkies and drug consumers […] drug consumers are different, they might sit there and have a joint at night, or they might sit there and have a shot, but they're not junkies. Junkies go out. They're the thieves. They lie. They steal.* (Elaine)

> *As soon as you're on methadone, [the public] don't see it as a maintenance programme or us as helping ourselves. They see us as a junkie […] we're just old junkies they call us, well we're not. We're not even users, we're on the methadone, we drink our methadone.* (Isaac)

In these excerpts, Elaine and Isaac distinguished themselves as "recreational" and "medical" users in preference to the label of a "junkie"*.* This could reflect personal resentment against the social stereotype of a "junkie" that hold deep negative cultural representations, or as Slavin (2004, p. 455) puts are "powerful cultural symbols of order and discipline versus disorder, pollution and loss of control*".* People who perceive this stereotype to correspond with self-stigma as legitimate are likely to have negative effects to their self-esteem. However, as illustrated by Elaine and Isaac, people that reject the stereotype can instead respond with righteous indignation or indifference (Corrigan et al., 2009). Similarly, Ben describes the public's opinion of an addict as someone who is ruthless, undignified, and messy, but states that most people he knows do not fit these negative stereotypes:

> [People seem to think] we (PWID) have a shot, and then we squirt it all around the fucking walls," and it's not like that man. You know? Most people I know do it discreetly. I don't do it in front of people, and I'm clean about it. (Ben)

As this quote illustrates, PWID are aware of the social scorn imposed on them by the outside world. These forms of perceived and experienced stigma are seen as immoral and dangerous. In a disaster situation, the PIWDs in this study were concerned that these forms of stigma would mean that emergency personnel would not be concerned with their needs:

We would be the last people considered important. First responders and firearm police, they'd be concerned about getting the power going, accessing buildings and all that. People that are on medication would be thought of least. (Kyle)

[Emergency responders] will be saying, "look, you're getting so much drugs that you could knock out a horse", "you're the last people we should take care of", "you put yourself in that situation" […]. I just think out of everything they'd think of you, no one would even think about "oh shit, all these guys are going without their meds". It's more like, "oh well, the druggies are going to have to sit back for three days and handle it". (Finn)

Kyle and Finn felt that they would not be supported and be positioned as undeserving of NEP equipment or any emergency management treatment at all. Furthermore, they were concerned they would be treated in derogatory ways, reflecting previous experiences and perceptions of stigma. Ben also expresses concern about how he would be treated by emergency management personnel — "because they would leave us, and I know they would leave us" (Ben). Ben goes on to explain that he believes PWID would not be taken care of in an emergency. Similar findings were found in research conducted by Blake and colleagues (2020), who interviewed people on OST in Aotearoa New Zealand. The PWUD in their study also described being concerned that they would be disregarded in an emergency setting. Although Kyle and Finn excerpts above reflect perceived stigma, rather than actual experiences, the NEP staff member also fears that PWID would not be prioritised in disaster settings:

[PWID] know they're not getting treated the same as others are getting treated. Especially around the prescribing of their drugs […] We see it right through mental health, everybody is lax around our people, everybody here feels they don't do as much to this group as they do to others […] I was listening to the radio the second week of lockdown, and I heard one guy come on, and he said, "I know how to sort all the junkies through this period!, you just get rid of drugs, and you put them all in lockdown -you put them all in prison. You've got to put all the addicts in prison". What? Why would anyone ever think something like that! […] Sometimes we prove them right. But often, we prove them completely wrong, you know? (NEP staff)

The NEP staff member perceives the systemic exclusion that PWID face in day-to-day life — "mental health […] everybody is lax around our people". He mentions hearing these narratives of structural exclusion repeated in conversations regarding COVID-19. These narratives, as he points out, are extremely unjust as — "often, we prove them wrong". In contrast, it seems participants talked about having trust and faith that NEP staff would provide emergency management support to them during any disaster situation. This did occur in the recent COVID-19 level 4

lockdown. The findings indicate that self-stigma, as well as experienced stigma, prevails across professional settings. The following section unpacks experiences of social stigma for PWID in pharmacy-based NEPs.

STIGMA PREVENTS PWID ACCESSING PHARMACIES

Logistically, pharmacy-based NEPs would provide a good opportunity for PWID to access NEP products locally. However, participants indicated that the stigma they experience in pharmacies prevents them from purchasing equipment there. There are two NEP-based pharmacies on the West Coast of Aotearoa New Zealand: one in Westport and one in Greymouth. NEP staff mention how PWID feel they are treated in pharmacies:

> *Even with the distribution of that equipment out of the pharmacies in Westport […] we've had phone calls from people saying, "look, I've just come out of the pharmacy to pick up some injecting equipment, they just looked at me like a piece of dirt". That doesn't help any process. In any way, shape or form, you know. That doesn't help keep that person safe, cos to keep 'em safe, they need that clean equipment. You stigmatise, they might not come back for a week and go home and use that same crappy thing […]. Westport only has a pharmacy, it does NEP, and it does OST, so there's a real dilemma for PWID asking for injecting equipment from the people that are distributing their methadone, who take a personal view on this and say, "You shouldn't be injecting your methadone". When once it goes out to the shop, it's down to the PWID what they do with it, it's not actually illegal to inject, and that's what a lot of confusion is about for a lot of people that don't know a lot about our world.* (NEP staff)

This NEP staff member's quote represents the role of stigma and the staffs lack of agency and frustration for people on OST programmes. Unlike peer-based NEP, pharmacists and others working in pharmacies are not trained to provide psychosocial support to PWID particularly on how to engage positively with marginal groups even though they are health professionals. Instead, PWID feel stigmatised by pharmacy staff or afraid that they will be publicly recognised as a "junkie" because pharmacies are public spaces (Hikaka et al., 2021). PWID receive OST medications from these pharmacies and, as such, are afraid to purchase injecting equipment because of pharmacists either stopping them or reporting it to OST teams. If this happens, people risk being taken off OST:

> *Because [the pharmacist] knows you, if you're on the methadone, she definitely wouldn't give you needles. Say if I were to go in and ask for a barrel or a pack, my god, she would be on the phone to the methadone clinic straight away. I'd get called in straight away for a urine test and all the rest of it. They'd*

be thinking I'm using. [laughs][…] but anywhere else in New Zealand, I'd walk in and ask — apart from Greymouth. Anywhere off the Coast, I'd ask. (Hazel)

Hazel believes that pharmacy staff would simply refuse to provide NEP equipment or judge anyone for suspected drug use (other than methadone). It seems, however, that part of the fear of purchasing injecting equipment for PWID from pharmacists is being labelled as an active drug user, which has implications for treatment options like OST. In Aotearoa, New Zealand, the use of other drugs while on an OST programme is discouraged through punitive measures like the removal from OST programmes, which are health-sustaining treatments (Deering et al., 2014). The weight of being "outed" in the community became apparent when the PWID in this research spoke about how quickly rumours spread and the social consequences that could ensue (their children being removed, their children being bullied at school, lack of job opportunities, evicted from housing, and being refused medicine). The cost of losing treatment and the consequences that come with that (street drug seeking and taking, health risks, financial costs etc.) meant that nearly everyone in this study was unwilling to purchase equipment themselves at pharmacy-based NEPs. Instead, some would ask a friend to pick up equipment for them:

I'd try and get someone else to go for me [laughter] I'd try and call him. I barter with drugs. (Elaine)

In emergencies, people would rather re-use equipment and take the risk of having a "dirty" shot or contracting blood-borne viruses than access equipment via the pharmacy-based NEPs. Julia explains this:

I would have to re-use, clean and re-use. I would do that if I had to. I've had to do that lots of times. Because I couldn't get it at the Greymouth pharmacy. (Julia)

In this excerpt, Julia asserts that she does not use the pharmacy-based NEPs on the West Coast due to stigma, emphasising that even if the infrastructure is intact, the impact of interpersonal dynamics and a lack of agency should not be ignored. Stigma can cause a lot of personal and social damage in rural towns like those on the West Coast. The following sections shifts to thought about how this can be different, as suggested by the participants.

EMERGENCY MANAGEMENT SOLUTIONS

This last superordinate theme contrasts earlier themes. Instead of exploring social or structural elements that influence NEP equipment accessibility for PWID, this section unpacks the most frequently mentioned solutions for when the outreach service is unable to travel to the West Coast. The solutions mentioned by participants are hypothetical and additional to the solutions currently being implemented by NEP

services (such as the outreach service, key contact system, the courier service, or online store). Each solution includes an opinion section that represents the counterarguments presented by participants.

STORING EQUIPMENT IN COMMUNITY FACILITIES

A commonly suggested solution by PWID in this study involved the bulk storage of injecting equipment in community facilities. This solution was offered by the NEP staff and was said with hopeful excitement:

> *Wouldn't it be great if we get some injecting equipment stored away in [Westport, Hokitika and Greymouth], maybe in community halls? We have all these community halls right around New Zealand in the smallest of areas, like where there's only two-three hundred people, there is a community hall!* (NEP staff)

As the NEP staff member suggested, bulk-storing of sterile injecting equipment in community halls allows for better equipment distribution in remote areas and would remove the geographical barrier for rural residents. It was also proposed that this solution be effectively used alongside existing community emergency hub resources. Community emergency hubs are pre-identified locations (often community spaces, including schools, town halls, community centres) for community members to coordinate their response and recovery efforts following an emergency (Wellington Region Emergency Management, 2020). There are large numbers of community emergency hubs (43 in the West Coast region), possibly due to the large expansive area of the West Coast (West Coast Emergency Management Group, 2021) and/or the high risk of natural hazard events. The community emergency hubs are managed by local community members (without official assistance) and support the welfare needs of a community following a major event. They are stocked with a few key emergency resources (e.g., a VHF radio that allows communication with the Emergency Operations Centre (Wellington Region Emergency Management, 2020). David appreciated how this solution was local and does not require travel outside of Westport:

> *There's 111 kilometres between [Hokitika and Greymouth], so even in a weather event, we can't get to Westport to get needles […]. We should only have [emergency NEP equipment] on this side of the bridge.* (David)

David argues for equipment to be stored close to main locations just in case bridges are washed out so as to ensure that equipment is accessible. Any spare equipment should be stored close to where people live due to the risk associated with travelling between towns. When Max was prompted with this solution, he also argues that local resourcing solutions are a good idea as it would also remove transport costs as a barrier to accessing clean injecting equipment for PWID:

Plus, it [would be] sixty bucks in petrol to get to Westport and back just to get equipment, you know? And that's way out of affordability for most users to be able to do on the coast. They're having it tough finding the money to buy their gear! (Max)

As previously discussed, financial obstructions produce significant barriers to health care access. However, the health system cannot cater to this need. In areas where there are large geographical spaces, purchasing enough petrol is impossible. Alice echoed how it would be unviable to travel long distances to access products only worth a few dollars, even in an emergency:

There's no way — most people couldn't even afford the petrol for the trip there. (Alice)

Given earlier narratives where PWID indicated that user-pays equipment costs, which are between 1 and 2 dollars, is too much, it is unlikely that a solution requiring PWID to travel is a feasible option. Particularly as emergency situations tend to further increase financial pressures (Blake et al., 2017), emphasising how storing equipment in community hub type facilities would remove travel-related barriers for PWID in disasters.

CONFLICTING OPINIONS

A weakness of storing equipment as a solution, as suggested by PWID, is a fear of stigma complicating or potentially hampering some PWID from picking up equipment in a public location. In earlier sections of this thesis, PWID indicated that "being outed" as someone who uses drugs while living on the West Coast can have serious negative long-term effects, including impact on family relationships, job prospects, and limiting social networks. Elaine voiced that a community-based solution, such as storing equipment, whereby PWID need to access equipment from a location catering for the entire community (not just PWID), could problematically expose PWID as drug-users to the local community. Despite these concerns, Elaine also expresses how the threat of stigma would not stop her from finding a way to discreetly pick up equipment in a public location:

I'd to find a way [to pick up emergency NEP gear], where people weren't seeing my face […] it's just cos it's such a small community - doctors here cut people off their medication all the time. I've been cut off my anti-depressants, off all my pain meds and everything. (Elaine)

Elaine highlighted the punitive treatment people who use drugs endure. Alongside these fears were concerns about who would be in charge of distribution. Participants indicated that equipment distribution by PWID themselves could be problematic. This is because, as discussed in the key contact section, relationships within the PWID community can be complex, enact stigma, conflict, and discrimination, and is sometimes compounded by social and material deprivation and

injustice (Fisher, 2006). However, Hazel believes it is possible to prevent intragroup conflicts by creating separated time restrictions between pick-up for people:

> *There should be fifteen to twenty minutes between [NEP clients] going in. So no one gets to see each other because that's where there's going to be a lot of conflict.* (Hazel)

David, similar to Hazel's sentiment, emphasised the need for authorities to prevent intragroup conflict, which as earlier sections of the findings indicate, is more likely when resources are scarce (such as when rationing resources between people):

> *You've somehow got to get someone in authority [in charge of distributing gear] that cares enough and is prepared to do that, or gets paid for it, one way or the other. But it's more likely going to be a volunteer, in which case, I really think you need someone in authority who's not in the group. I don't think this [key contact system] business works 'cos you're going to have trouble, guaranteed.* (David)

Overall, the reservations people held about the suggested solution of storing equipment in community facilities only had a few reservations: the location (due to fear of being stigmatised), potential inter-group conflict between PWID and needing reliable overseers or managers to dictate access. These solutions and reservations illustrate the specific needs this group of NEP clients have when accessing injecting equipment in emergencies. However, the suggested solutions, including the suggestion of time-related restrictions, shows that small changes in an emergency plan can prevent or lower barriers. Overall, storing equipment in community facilities was well-received by most interviewees and a plausible solution for disaster accessibility.

ELECTRONIC DISPENSERS

Another commonly proposed solution was the implementation of electronic dispensers (vending machines) in main West Coast areas (e.g., Hokitika, Greymouth and Westport). Electronic dispensers are used by most stationary NEPs across Aotearoa New Zealand (Aitken, 2002) and are considered an effective way to distribute equipment alongside outreach services in harder-to-reach or higher-risk PWID communities (Aitken, 2002; Islam & Conigrave, 2007). Participants in this study were in favour of dispenser machines. Examples of positive reactions include Elaine, who enthusiastically spoke about being able to access sterile equipment 24/7 — "day or night" — and appreciated that electronic dispensers would remove time barriers. Others, such as Julia, echoed this idea and added that continual accessibility meant she did not have to "think ahead":

> *"Ever since I've been on the Coast, I've had to think ahead. You know. I never used to. Because in Wellington, for example, you could just go to the machine".* (Julia)

When presented with the idea of installing a machine in her location (Hokitika), Julia responded in favour — "that would be brilliant". Without a vending machine, PWID are dependent on pharmacies, but these are problematic as identified above or the outreach van or other vehicle-based solutions. If the van or other forms of transport are not possible, it increases the risk of inaccessibility, especially in emergency situations.

It was clear that the location of a machine would have significant social consequences, and the balance of privacy and safety would need to be considered. Electronic dispensers reduce the chance of being stigmatised and remove interpersonal factors, such as having to pick up equipment in public from other PWID or with other PWID around. They are therefore deemed particularly valuable to smaller populated rural towns, as confidentiality in these areas is imperative (Dodding & Gaughwin, 1995; Islam & Conigrave, 2007). Alice was in favour of the idea of a dispenser machine for this reason — "no one is in control with that, even though behind the scenes [someone] might be filling them". Max also argues that the location of the dispenser was important for PWID; they need it to be private to protect anonymity, and potential harms from stigma — "just the fear of being [seen] going to that machine could jeopardise a lot of peoples employments...big gossip town, mate". But, for some, it was also important to protect children from seeing drug-related activities:

> *[The dispenser should be located] at certain places where kids can't see* (Kyle)

Whilst privacy and confidentiality are important, there were a number of points to consider if implementing a vending machine. These are now discussed.

CONFLICTING OPINIONS

People expressed concerned about being assaulted if the machine was located in a too-hidden area. Max said that the location should not be too private as that could make PWID feel unsafe and put people at risk of being attacked:

> *You need* [electronic dispensers] *to be in view so people can go left or right when they feel unsafe. They can't just be trapped in an area […]. No woman's going to want to go to a dark corner to grab [needles], are they? If a girl's there on her own, you know, getting herself her gear, she could be set up there quite easily, aye?* (Max)

This assertion illustrates that physical harm or assault is a potential risk (Ickowicz et al., 2017) and an important variable to consider with a vending machine (Islam & Conigrave, 2007).

Another concern, as identified by Sebastian and Alice, was about the machine being damaged by people breaking it. Sebastian said — "I could guarantee it would get smashed up by some locals and that if it wasn't somewhere discreet cos like the

one in Nelson, like heaps of times got smashed up". However, Kyle argued that it would be unlikely that an electronic dispenser would be destroyed, especially if it was somewhat in view of others, and that it would be unlikely that they would get targeted by the public:

> *Don't believe that rubbish*. *If [equipment was] put somewhere in a secure location, I don't believe it will be smashed […] considering we could place it close to the police station, especially with cameras on it […]* it's not going to cause more problems, it's going to make people a lot more healthier and stop disease. That's what I reckon. (Kyle)

Whilst these findings indicate that the appropriate infrastructure (privacy, safety, location) should surround an electronic dispenser, overall, the possibility of an electronic dispenser was positively endorsed as a solution by the PWID in this study. Islam and colleagues (2007) confirm that electronic dispensers are complementary to an outreach service, as they are equally private and are able to reach PWID that do not use the outreach service. It is also clear that PWID know what they need and, as such, should be empowered to have their needs met for health and safety reasons.

CHAPTER 5 SUMMARY

This chapter attempted to make sense of structural dimensions and the impact of social stigma on accessibility to NEP services. Specifically, the findings emphasised the importance of NEP service design features such as those related to service confidentiality. Peer staff were considered to be a strength for accessibility in that NEPs adherence to privacy likely contributed to the positive engagement of PWID with the NEP service, particularly given drug use is highly stigmatised, so privacy is very important to PWID. Additionally, two commonly mentioned barriers were road blockages and road closures. Given the remote region of the West Coast and the majority of NEP services (besides the pharmacy-based NEPs and the key contact system) use the few roads, structural vulnerability as seen in access to the roads poses major risks to PWID and NEP accessibility in disaster settings.

Another prevailing barrier is the cost of injecting equipment. Even though it is highly subsidised, the equipment cost hindered the ability for people to purchase equipment in ordinary situations, which is likely to be exacerbated in disaster settings. Lastly, the interviews revealed that social stigma is a prevailing social occurrence in everyday life of PWID. In disaster settings, this stigma was expressed as hindering health care accessibility in multiple ways. Both experienced internalised stigma which prevents PWID from feeling comfortable picking up NEP products in public locations, including NEP-based pharmacies and emergency locations, out of fear of being "outed" or discriminated against. These findings represent a

disproportionate amount of barriers and point to the importance of equity in meeting the particular needs to address these barriers.

Two emergency management solutions were presented that would address many of the weaknesses in the other approaches and maximise accessibility. One was the storing equipment in public community facilities for PWID if the other options are not variable. Another included installing an electronic dispenser, which would maximise the anonymity and confidentiality provided by this service have shown to be good for accessibility. These findings indicate that PWID have a disproportionate number of barriers.

The next chapter will extend the findings of the last two chapters and contextualises these in relation to previous literature. Lastly, these findings are reconciled into a discussion on culturally constituted stigma, wherein existing mechanisms of co-constructed power uphold and reinforce the social exclusion of PWID. This situates the found needs as a contribution to vulnerability-based disaster research that prioritises and figures out the needs of those most vulnerable in society.

CHAPTER 6 – DISCUSSION

SUMMARY OF FINDINGS

The findings chapters revealed various psychological, social, and structural elements influencing PWID accessibility to NEP products and services in disaster settings. These findings substantiate existing literature on drug use and disaster vulnerability (Blake & Lyons, 2016; Blake et al., 2020; Dunlap & Golub, 2011; Kohn et al., 2012) as well as health accessibility (Ashton, 2004; Miller-Lloyd et al., 2020; Motavalli et al., 2021). At the level of the psychological, motivation behaviours around accessibility, such as preparedness and proactiveness actions, play a key role in accessing equipment in emergencies. Driving these behaviours vulnerability when living rurally is concerning, as well as the avoidance of negative feelings associated with HCV treatment and feeling sick from harmful injections. Additionally, participants found their social networks help with accessibility, both directly, through the formal provision of practical support (e.g., by linking PWID up with secondary services during the COVID-19 pandemic and peer worker service flexibility), but also indirectly from psychosocial support.

Service-related influences, including confidentiality and NEP-equipment costs, were regarded as particularly important to accessibility. Service confidentiality, as evident by no NEP-identifying signage or advertising and discreet engagement, likely encourages service accessibility for PWID. Service confidentiality protects PWID from commonly experienced stigma and discrimination. Besides this, vulnerable road-networks pose a risk to accessibility, as severe hazards can prevent the outreach service (and secondary services) from travel to the West Coast. In the same way, PWID are unable to travel and are further hindered by a lack of available options to access NEP-based services due to their remote location. Besides this, a significant service-related barrier found in this research was NEP equipment cost. While the purchasable equipment is only 1-2 dollars, this is significant when living on inadequate benefits or low wages. Social stigma was exposed as a pervasive exclusionary influence on PWID, preventing resource accessibility in a few ways. Internalised stigma meant that PWID anticipated negative responses from emergency management services, and many PWID believed they would be a low priority for emergency management services. Fears of being identified as PWID and the wider consequences of discrimination were found to prevent PWID from feeling comfortable picking up NEP products in public locations like NEP-based pharmacies due to their punitive attitudes. This chapter discusses the outcomes of these findings and contextualises them in regard to previous literature, highlighting the unique contributions of this study to disaster-based research.

DRIVERS FOR PREPAREDNESS AND PROACTIVENESS BEHAVIOURS

This study found motivation for preparedness and proactiveness behaviours key to accessible equipment in disasters. Although the overall motivation for PWID to prepare by having additional stock or a plan on how to get it was particularly low, this was expected because, as mentioned, on average, only 24% of people in Aotearoa New Zealand are fully prepared for an emergency (Colmar Brunton, 2020). However, there was considerable variation in motivation behaviour among PWID, which suggests motivation might be influenced by wider social and systemic elements (Harris & Rhodes, 2013). For instance, one social influence for overall low motivation in the participant is likely because many PWID interviewed in this study were also key contact distributers and were "topped up" with extra equipment by NEP staff. Thereby still having plenty of clean equipment in their homes and finding little need to engage in preparedness behaviours.

PWID who did engage in preparedness and proactiveness behaviours were driven by living rurally (including feeling more vulnerable and having less reliable alternative ways to access equipment). Another driver was to avoid the negative feelings associated with blood-borne viruses and "dirties" (an injection that causes illness or an abscess). Previous studies have similarly found that fears of negative affect and health consequences sufficiently motivate PWID to prioritise access to equipment in emergencies, including fears of HCV to motivate PWID to access HCV screening clinics (Barocas et al., 2014; Schwarz & Clore, 2003). The unique drivers found in this study reinforce the importance of engagement in forethought by preparing extra NEP products ahead of time and proactively seeking ways to find equipment and access to other resources.

SOCIAL NETWORKS AND SUPPORT

Social networks, also known as social capital in disaster research (Dynes, 2006), were found to largely enable accessibility to injecting-equipment in disaster settings. This is consistent with other studies that have found formal and informal social relationships to generate powerful resilience to emergencies (Norris et al., 2008; Paton et al., 2014; Sherrieb et al., 2010). The ability for NEP staff and service procedures to adapt to new social and environmental stressors, and the continuous provision of practical and psychosocial support, enabled existing relationships of support to "buffer" or protect against the harmful outcomes of social vulnerabilities for PWID and provide service continuity for NEP.

As mentioned, the importance of social networks in disaster situations lies in people's empowerment and social cohesion (Gil-Rivas & Kilmer, 2016), and has been

found particularly relevant in various studies on disasters in Aotearoa New Zealand. For example, in the 2016 Kaikōura earthquake, as mentioned above, social cohesion was particularly important to local (rural) residents who found personal strength and resilience in community and social cohesion (Cradock-Henry et al., 2019). These align with overarching disaster frameworks in Aotearoa New Zealand that also recognise how social connectedness and cultures of mutual reciprocity are key to good disaster preparedness and resilience practices. This includes linking up resources by empowering people affected by disasters (Aitsi-Selmi et al., 2015; Maini et al., 2017). A particular takeaway from these findings is that social context does not wholly contain elements that hinder accessibility. Certain vulnerabilities exist, but social capital through practical and psychosocial support of health staff and inclusive emergency management practices can foster resilience for PWID, including access to health care services. However, it is important to examine where these social support systems are coming from not to overwhelm social services, peer staff, or key contact distributers. Social influences are elaborated on in the following section.

THE KEY CONTACT SYSTEM

The peer-based key contact system functioned as a secondary distribution system and storage space, enabling NEP product accessibility in situations where hazard-induced barriers block road access. In support of our findings, other studies have found the key contact system an effective method for distributing more NEP products around the community (Dechman, 2015; Des Jarlais et al., 2002; Huo et al., 2005; Parker et al., 2012; Valente et al., 1998, 2001). Scholars such as Dechman (2015) and Parker and colleagues (2012) have found key contact systems based in Canada to work well in tandem with outreach services in rural communities as they can function as backup supplies when the outreach service cannot make it. This was particularly true for participants in this study as Westport had limited alternative access points in disaster situations.

However, this study also found that intragroup dynamics among PWID can complicate distribution. Consequently, key contact distributors can effectively act as gatekeepers making the key contact system unreliable. In the current study, intragroup conflict was found to complicate key contact relationships; Dechman (2015) also recognised that trouble could arise from relationships between key contact distributers and PWID that are too-close or enmeshed. Finding that key contact distributors adopt too much responsibility for PWID can, as a result, overextend themselves financially and socially put themselves at risk. Although social networks situated within the PWID community provide an excellent opportunity for sharing resources, these findings call for the need to take the intragroup dynamic of community members seriously when considering the distribution of this kind. In summary, on the one hand, peer relationships provide social capital, and on the other, they can prevent access to drug injecting equipment.

ADAPTIVE CAPACITY OF NEP AS A PEER-LED SERVICE

The findings of this study revealed that the mobile outreach service did not encounter the frequently cited (for example, see Ekhtiari et al., 2019; Madge et al., 2017) service barriers that hinder PWID access, such as operational times and service proximity. Given that peers are hired to distribute NEP products, it is not surprising that they were deemed essential to arranging access to stock in uncertain times. The ability of NEP staff to be adaptive and manage service continuity during the COVID-19 level 4 lockdown period and other disasters reduced disaster-based stressors. Another major way services are flexible is through secondary services, including communicating with PWID and ensuring these services are operational (e.g. the "stocked-up" of key contact distributors with additional free supplies). Concurrently, the governing organisation (NEST) opened a national online store to facilitate people purchasing equipment in line with distancing measures during the various COVID-19 levels. The practical adaptations managed by NEP staff and peers through the COVID-19 pandemic (e.g., arranging of alternative services) appears to be strengthened by the existing social relationship between NEP staff and PWID. Such relationships are built on providing psychosocial and emotional support, trust, confidentiality, and good leadership in everyday settings (Hay et al., 2017). Good leadership can guide collective action in emergency situations and lessen experiences of loss (Dynes, 2006). The provision of psychosocial support is also an essential part of the NEP service, as a peer-based organisation (Hay, 2017 #3; Lang et al., 2013; Paquette et al., 2018), and in this study has been associated with enabling PWID to connect and rely on peer staff in emergencies. This was also noted during COVID-19 when peers donated money that PWID with less financial means could still access free (one-for-one) or and user-pays products where possible. Thereby essentially reducing any financial hardship preventing access (Dynes, 2006). This study is novel in that it recognises the role of psychosocial support and how positive relationships built by peer-support staff buffers vulnerabilities for PWID in emergencies.

The importance of non-judgmental and supportive service for PWID has previously been seen to enhance participation and retention of PWID in health care settings (including harm-reduction programmes) (Harris & Rhodes, 2013). For example, Barocas and colleagues (2014) used a mixed-methods approach in Wisconsin (U.S.) to identify the facilitators and barriers for HCV screening for PWID. They found that non-judgemental and confidential practices in health care settings facilitated screening in both traditional medical clinics and community-based care. Moreover, Harris and Rhodes, (2009) found that psychosocial support enabled treatment-provider literacy and removed psychological barriers for PWID access to health services. Similarly, Falk and colleagues (2020) found that when NEP staff had a caring and encouraging attitude towards PWID, it facilitated continued use of NEP.

The authors note that attitudes of acceptance often counteract experiences of stigma faced in other areas of their lives.

INFRASTRUCTURE AND SERVICE MANAGEMENT

SERVICE CONFIDENTIALITY

NEP service confidentiality as part of the overarching NEST framework, is taken seriously in all service delivery and achieved through a range of strategies that adhere to privacy policies. This includes, no signage or advertising and discreet engagement (NZNEPc, 2021). In maintaining anonymity from injection drug use, PWID are protected from harmful legal consequences and discrimination, such as being deemed unfit parents and losing custody of children (Thomas et al., 2020). Not maintaining service confidentiality can cause difficulties; for example, during COVID-19, mobility restrictions meant that privacy could be harder. Nevertheless, participants in this study found no extra difficulties accessing NEP during this period, likely due to the COVID-19 distancing precautions and privacy practices were undertaken by the NEP staff during this period (NEP staff). Whilst service confidentiality is standard practice in many health services, the consequences of a stigmatised identity for PWID points to a deeper need to stay hidden. It is also a reminder about how discrediting drug use and PWUD invoke forms of secrecy that mean access to health-promoting services is challenging—something the more powerful in society do not have to consider.

COST

Health-service cost has been frequently cited as a barrier to health care for PWID (Islam et al., 2012; Miller-Lloyd et al., 2020; Roberts et al., 2010b; Room, 2005). The findings in the current study identified that cost is particularly limiting in disaster contexts. In Aotearoa New Zealand, NEP equipment is funded by the Ministry of Health; this funding does not sufficiently cover the cost of all drug injecting equipment (Anderton, 2004). Whilst free one-for-one equipment provides an opportunity for PWID to access some equipment, it was clear that user-pays items at 1-2 dollars per item is too much for some PWID. Likely representing the problems with living on inadequate benefits or a low wage. The consequences of missing out on important user-pay equipment, including wheel filters, butterfly needles, and larger syringes, can pose phenomenal health risks (Ohnishi et al., 2012; Keijzer & Imbert, 2011). Substance abuse issues, young mothers, and beneficiaries particularly struggled and had to make difficult choices at times. Disaster can exacerbate financial hardships, thereby upholding and reinforcing health barriers, particularly for those with existing financial pressures. While people can apply moral judgements to drug use, it does not negate that access to good health is a human rights issue — no matter what the reason.

As already noted, during the COVID-19 level 4 lockdown period, any additional disaster-induced financial vulnerabilities were mitigated by peers who proactively "loaded up" PWID with free equipment and key contact distributors so as to disseminate equipment around the community. The PWID community donated money to cover equipment costs. It should also be noted that PWID staff needed to use their money to relieve financial pressures despite the government allocating 27million dollars to essential NGOs and social services (Robertson and Sepuloni, 2020). Whilst primary health organisations within Aotearoa New Zealand, need to be responsive to community needs (Barnett & Barnett, 2006), these findings demonstrate a funding gap for NEP based services, especially in extraordinary times, which means NEP services may not fully meet the wellbeing needs of clients. Reflecting recent findings of Jenkins (2019), who found that social services in Aotearoa New Zealand are underfunded by approximately $630 million per year, and are funded with less than two-thirds of the actual cost needed to deliver services they are contracted to provide. The findings of this study reveal the need for total and permanent funding of all NEP equipment as this would alleviate additional responsibilities and stress for staff and service users alike.

ROAD CLOSURES AND DISTANCE

Road-networks were noted as a particular infrastructural risk for PWID as the outreach service, alongside crucial secondary services, need mobility to deliver stock via State Highway 6. This is the only viable route in and out of the West Coast of the South Island but is subjected to frequent hazard-induced road closures (flooding events, road slips, weather conditions). Others (Davies et al., 2017; Tobin, 2021) have testified that a series of road networks throughout the South Island of Aotearoa New Zealand, are highly vulnerable to disruption in natural hazards or rough weather events. Many of these road networks provide main arterial access (and income) to major areas in the South Island, which can cause issues. For example, infrastructural damage to roads and bridges following the 2016 Kaikōura earthquake caused an immediate impact on the movement of fresh food supplies (including fruit, vegetables, and meat) into the Kaikōura township (Davies et al., 2017). More recently, the 2021 flooding events in the Southwest of the South Island caused road closures and accessibility issues for produce-transporting trucks (Tobin, 2021). The effects of this were noticed in many parts of the South Island, including Queenstown, where residents lacked supermarket supplies. These studies highlight that people living in remote areas endure additional vulnerabilities when relying on critical infrastructure for resources. It not only points to a need for road networks that are more resilient to the impact of natural hazards in the South Island (Tobin, 2021) but also highlights the importance of storing backup health supplies locally.

It is acknowledged that structural issues such as these are not unique to PWID communities. However, those with fewer alternative means of transport or access to life-sustaining health care have a different type of dependence on these systems. For instance, in the COVID-19 level 4 lockdown period, public transport was banned for all non-essential travelling (Nellson, 2020), making travel for those without a car extremely difficult. Furthermore, while an outreach service was able to cater for potential vulnerabilities, this is not possible during road-network, or other infrastructure problems as it completely restricts road access to the West Coast. As such, issues need to be addressed at local and national government levels.

THE INFLUENCE OF SOCIAL STIGMA

The second research question explored the role of stigma on NEP service accessibility. This was largely influenced by the recognition that stigma has a large role in the life of drug users (Ahern et al., 2007; Lloyd, 2010; Room, 2005). It is well known that stigma has a negative influence on health accessibility (Blake et al., 2020; Cuny, 1994; Middleton & O'Keefe, 1998; Walters & Gaillard, 2014). Participants were concerned about being identified as “users” in the event an emergency plan should require them to collect NEP products from a public location. This fear was largely influenced by the social risk involved with being “outed” to wider West Coast communities; there was concern about being discriminated against in social environments and losing jobs and hobby opportunities. These findings are consistent with the previous findings of Gibson (2016), who found that PWID in Aotearoa New Zealand, can be apprehensive about dropping off used equipment at local pharmacy-based NEPs out of fear of being recognised.

STIGMA BY HEALTH AND EMERGENCY MANAGEMENT PROFESSIONALS

Besides the fear of being "outed" to members of the local community, participants in this study indicated that the *experience* of discrimination (by both health and emergency management staff) negatively affected accessibility to NEP products in disasters. Pharmacy-based NEPs theoretically provide an excellent secondary service for equipment access in disaster situations, however, the stigma all participants in this study experienced from pharmacy workers prevented them from collecting NEP products at pharmacies. Given the limited pharmacies on the West Coast and that many PWID collect their OST medication from the same NEP-participating pharmacies, this is problematic. Despite NEP being a government-sanctioned service and it being legal to inject methadone (Ministry of Health, 2014).

According to the Ministry of Health (2014), supplying injecting equipment provides an opportunity for pharmacists to offer brief interventions with respect to safe injecting behaviour and any destabilising pharmacokinetic and pharmacodynamic effects that injection of drugs might cause. A decline in a client’s

physical, emotional or mental state is a reason for a pharmacist to contact the OST team; this may also occur in the context of any assumed injecting behaviour whereby pharmacy staff can inform OST services about suspected drug use (Ministry of Health, 2014). Consequently, even in desperate times, PWID in this study indicated that they were unwilling to be perceived as injecting their medications out of fear their treatment would be discontinued; and would rather re-use injecting equipment than purchase it from their local pharmacy-based NEPs. The fear of loss of treatment and the continuation of stigma towards PWID within health care services is particularly concerning as stigma was identified as a key area for improvement as far back as the 2002 Needle Exchange review (Aitken, 2002).

Consistent with international (Day et al., 2003; Jones et al., 2008; Lloyd, 2010; Miller-Lloyd et al., 2020; Motavalli et al., 2021; Van Boekel et al., 2013; Versfeld et al., 2020) and Aotearoa New Zealand-based literature (Aitken, 2002; Gibson, 2016), this study found that experiencing negative treatment from health care staff is associated with PWID delaying treatment or accessing health services altogether in non-disaster situations. Commonly cited reasons attributed to this behaviour from health staff include the moral abhorrence of drug use, the mistaken belief that negative attitudes towards drug users can discourage problematic drug use (AIVL, 2011), as well as the misinterpretation that PWID are drug-seeking and falsely reporting symptoms to obtain medications or prescriptions (Sheridan et al., 2005). This study found evidence that mistreatment by professionals was internalised by PWID, as they felt they would be treated the same way by emergency management professionals, deprioritised when needing aid. These mirror findings by Blake and colleagues (2020, p.5), who interviewed 21 OST clients about their perspectives and experiences of stigma in disaster settings in Aotearoa New Zealand. Participants in this study expected poor treatment by people in authority both in receiving support in emergency management spaces or in Community Hubs. As such, stigma poses multiple barriers in disaster situations.

Overall, by exploring how PWID experience various forms of vulnerability in disaster settings, insight has been gained into how processes of inequity occur via various mechanisms. There is much value in facilitating open conversations with PWID as such insight can open doors to shifting existing exclusionary mechanisms and practices that discriminate against PWID. The following section outlines the ways in which this study can contribute to vulnerability-based disaster research.

CONTRIBUTIONS TO VULNERABILITY-BASED DISASTER RESEARCH

This research follows in the footsteps of broader efforts of researchers that prioritise and figure out the needs of those most vulnerable in society, especially during adverse times (Blake et al., 2020; Cardona, 2011; Cuny, 1994; Cutter et al., 2014; Hoffman, 2008; O'Keefe et al., 2018; Tierney, 2014; Walters & Gaillard, 2014). The first wave of 'vulnerability' research emerged during the 1970s and 1980s, challenging prevailing naturalist disaster perspectives that emphasised environmental hazards as the area of concern ("violent forces of nature") rather than any social elements (Fordham, 2013). Social vulnerability researchers direct attention instead to the social and political conditions that make people vulnerable, but also how disasters can compound existing vulnerabilities due to lack of recognition, representation, and social security (Walters & Gaillard, 2014)

Chapter 2 revealed how COVID-19 exposed the existing social vulnerabilities of many people in Aotearoa New Zealand. It is situations like these wherein a social vulnerability lens affords insight into COVID-19 not only as a health crisis but as a social crisis. The spread of the pandemic coupled with job loss and uncertainty and social distancing measures in an existing housing crisis was evident by the failings of many to meet basic needs. Particularly as the initial stages of the COVID-19 level 4 lockdown saw enormous demand for basic need packages, including food packages and emergency housing throughout Aotearoa New Zealand (Boyle et al., 2020; Dutta et al., 2020; Elers et al., 2021).

Given that this study also evidenced how PWID experience disproportionate vulnerability in disaster settings (in relation to health accessibility), it is argued that disasters exaggerate existing exclusionary processes against PWID, reflecting social and financial power differentials. To illustrate, social stigma upholds social power relationships between PWID and wider society. The way in which such power (and differences in power) play out in society is not necessarily as a repressive or negative force but something that is relational (Spanos, 1990a). In this study, a lack of social power (self-stigma) was evident when PWID themselves took up social norms by monitoring their own bodies and actions, also a form of image management (Souleymanov and Allman, 2016).

Image management was evident when PWID expected to be stigmatised and proceeded to engage in potentially harmful health behaviours because they did not want to source equipment from public locations out of fear of being recognised. This self-stigma shows awareness, agreement and the application of a discrediting stereotype which was then adjusted accordingly to avoid any negative effects on a sense of self and efficacy. Corrigan and colleagues (2009) call it a "why try" effect. Arguably, social stigma works not only among people in interactions; the findings

illustrate that stigma works as an exclusionary power on other dimensions, including a personal level and an institutional level. Blake and colleagues (2017) found that preparedness websites and government documents in Aotearoa New Zealand, frequently overlook the preparedness needs of groups with vulnerabilities, preventing them from effectively managing themselves and being further excluded. These institutional acts of stigma and exclusion inadvertently enact privileged agency to some and deny it to others.

The failure of emergency management and health staff to recognise the existing social vulnerabilities of PWID contributes to and is a form of structural exclusion towards the drug user. While services such as NEP are able to meet the needs of PWID by their inclusive and non-judgemental practice, they should not be expected to cover all the needs of PWID. These must also be met by the government agents, welfare and health system within Aotearoa New Zealand. The following section reveals several needs identified in this research that can be used to guide future emergency management practices for equitable and inclusive practice for PWID.

A STRATEGIC MAP

Adaptive Capacity: In emergency situations, service continuity is imperative in the successful provision of health services. As illustrated by the findings of this research, this requires health professionals to adapt their ordinary practices to the hazard-induced stressors at hand. Adjustment in this context is also known as adaptive capacity, which, according to Brooks (2003, p.8), involves “adjustments in a system's behaviour and characteristics that enhance its ability to cope with external stress”. This can involve specific changes to strategies, policies, and practices.

Cost: All NEP products in everyday and disaster settings should be free of cost. Equipment cost for PWID was a problem in everyday life that is most likely worsened in disaster situations. To aid this, the successful implementation of NEP requires strong leadership and financial support from central and local governments (Koo et al., 2015). Moreover, financial support would enable additional distribution pathways, for example, the provision of stationary electronic dispensers in rural communities.

Coordination of health services: The collaboration of shared protocols between health services could increase the efficiency of resource distribution (Douglas, 2007) and is encouraged by the National Disaster Resilience Strategy (2019). This could include sharing of emergency needles and syringes in emergency situations between other health organisations or storing and supplying clean injecting equipment at local hospitals.

Inclusive emergency management: Service adaption is also recommended for emergency management professionals. Improving the harms from social inequity can be achieved by moving away from a "one-size-fits-all" approach to emergency management, which relies on broad population-based strategies that overlook the specificities of marginalised communities (Cutter & Emrich, 2006, p. p.112). Ideally, emergency management should design and implement emergency policies and practices that incorporate the specific needs of people that have layers of vulnerability. For instance, following the 2016 Kaikōura earthquake, local residents were disappointed with administrative groups not understanding specific community needs and suggested appropriate relations be developed between national level and centralised groups involvement in disasters (Cradock-Henry et al., 2019). Along with the notion of moving towards a needs-based way of supporting people, viable solutions should be community-driven and combat differences in vulnerabilities for people, such as computer literacy or financial capital.

Challenging stigma: Emergency management and health care services should continue to challenge their stigmatising practices and progress towards more inclusive management of PWID (and other marginalised groups) in disaster contexts. Both emergency management and pharmacy-based NEPs staff could be trained in and apply better relational ethics to engage proactively with PWID before disasters occur (Hodgetts et al., 2021). Inclusivity and equity training should address social power relations founded in dominant punitive practices. Even OST services, which aim to reduce or cease illicit opioid use by providing alternatives to needle fixation, and intravenous drug use, should also "actively challenge stigma and discrimination wherever they are encountered" (Ministry of Health, 2014, p. 4). Staff in many of these services end up falling into complicit fear-based and punitive practices, causing PWID to feel stigmatised and counteractingly reducing safe injecting practices. There is a need to shift away from old rhetoric and stigmatising frameworks to more inclusive and non-judgemental practices.

CHAPTER 6 SUMMARY

In this chapter, the findings were discussed and applied to previous literature. It was noted that the psychological, social and structural vulnerabilities identified in this study substantiated existing literature while also identifying that a disaster context increases these vulnerabilities for PWID. The mechanisms through which this occurs reflect power differences in society and call for increased social support to combat deeply ingrained structures that socially exclude PWID. Ultimately, this study suggests several ways in which health and emergency practitioners can shift power inequities by creating space for attending to, and centring practice around, the needs of PWID.

CHAPTER 7 – CONCLUSION

SUMMARY OF THESIS

This thesis has explored health accessibility for PWID in disaster settings on the West Coast of the South Island, Aotearoa New Zealand. The research addressed the social elements that enable or prevent access to NEP services in disasters, with a specific lens on the impact of stigma. Chapter 1 framed the investigation by providing the background and rationale for the study, identifying people with less social and financial capital as disproportionately vulnerable to harm in disaster settings compared to people with more social power. Chapter 2 situated the study on the West Coast by introducing specific hazard-based and human-induced risks (flooding events and COVID-19) that threaten access to NEP services for PWID. Identified literature illuminated the various ways that access to safe and clean injecting equipment has been explored, and was linked to PWID experiences in disaster settings. Chapter 3 introduced a critical health psychology approach as framed by interpretive phenomenological analysis (IPA) and social stigma theory. Chapter 4 and Chapter 5 were in-depth explorations of the psychological, social and structural elements that enable or hinder accessibility to NEP products, and finally, Chapter 6 explored the findings in regard to previous literature.

This research never intended to represent the whole PWID population of Aotearoa New Zealand; rather, it aimed to find common patterns among PWID experiences. As such, the research demonstrated the strategic value of exploring social (and political) vulnerabilities in disaster preparedness and management in ways that had practical merit and suggestions for effective interventions (Norris et al., 2008). Future research in this area could further explore the viability of resource coordination between health providers and harm-reduction services. Exploring the strengths and weaknesses of cross-collaboration between socially acceptable health services (i.e. hospital supplies) and people who use drugs would be beneficial for understanding how to bridge these connections. Doing so could also be an efficient way to manage resources. For example, in the secure storing of resources, the local Civil Defence centres might store equipment for PWID, which could save the time and cost of transporting resources individually.

CONCLUDING REMARKS

As this research was brought to a close, on 16th July 2021, heavy rainfall in the South Island of Aotearoa New Zealand, caused mass flooding along the Buller Gorge, with the National Institute of Water and Atmospheric Research (NIWA) stating the flood flows were the highest of any Aotearoa New Zealand river since 1926 (Naish, 2021). Flooding throughout the West Coast region caused over half of Westport to evacuate, 200 homes became uninhabitable, and the region was effectively cut-off from outside, with road-networks to the South Island being closed (Guildford et al., 2021; Laurens et al., 2021; Naish, 2021; McCallum et al., 2021).

This unprecedented flooding event is a reminder of the significance of this work. In times like these, those within a critical health paradigm need to continue to champion equity and accessibility for the often overlooked, subjugated, and marginalised groups. One way of doing so is to centre the voices of, and advocate for, underrepresented people. PWID are incredible people who demonstrate resourcefulness and community caring even while experiencing disproportionate barriers to accessing health care services. The disproportionate vulnerability experienced by PWID is upheld and reinforced by socially excluding PWID from being able to have life-sustaining health practices. The unique social and structural needs of PWID, as found in this study, provide a strategic map to guide decision-making and potentially encourage inclusive and non-judgemental emergency management and health care strategies so that PWID in the Aotearoa New Zealand disaster landscape can flourish.

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APPENDIX A – SEMI-STRUCTURED INTERVIEW QUESTIONS

ACCESSIBILITY TO NEEDLE EXCHANGE SERVICES IN A DISASTER

SEMI-STRUCTURED INTERVIEW QUESTIONS
For PWID: • When did you start using the NEP? • How often do you use the NEP? • How important is accessibility to the NEP for you? • Is accessibility something you worry about? If so, why? • Do you consider the West Coast to be at particular risk of natural hazards? If so, what do you see as the most pressing risk? • Are you personally prepared for disaster situations, if so, what actions have you taken? (NEP equipment and generally) • How might a disaster impact you? Do you feel more vulnerable to disaster situations, if so why? • What has been your experience of COVID-19? • In what ways have previous disaster situations impacted your access to NEP (e.g. COVID-19, service continuity, staffing, road networks) • What do you perceive to be barriers to accessibility to NEP in disaster settings? • What role to you perceive stigma to have played to accessibility? • What do you perceive to enable accessibility to NEP in disaster settings? • If you could design an emergency plan for NEP, what elements would be important to include and focus on? (e.g. back-up stock, infrastructure, staff etc.) For NEP STAFF: • Does NICHE and/or NZNEP currently have an emergency plan? If so, what is it? • How adaptable is this plan to different disaster situations (incl. COVID-19)? • What do you think is working well from this plan? • What do you think is important for an emergency plan to maximise accessibility for PWID? • Are there any other concerns you have regarding accessibility for PWID to NEP services in disaster situations, and more generally?

APPENDIX B – PARTICIPATION INFORMATION SHEET

ACCESSIBILITY TO NEEDLE EXCHANGE SERVICES IN A DISASTER

PARTICIPANT INFORMATION SHEET

Thank you for your interest in this study. Before deciding to participate, please make sure you have carefully read this information sheet on the aim of the project and what it would involve for you.

Who are we?

We are a team of researchers from Massey University and Auckland University in partnership with the Needle Exchange Programme. This research is undertaken as part of postgraduate studies. Anne Rijnink is the Principal Investigator for the Study, Dr Denise Blake is the supervisor on this project.

What is the aim of the project?

We aim to gain insight into the barriers and enabling factors involved in access to Needle Exchange Programme services during a natural hazard, or people generated disaster (i.e. COVID-19). We are interested in learning your views about access to the Needle Exchange services and how natural hazards or people-generated disaster, such as COVID-19, has or could impact access.

How can you help?

If you agree to take part in this study, you will be interviewed at a mutually agreed location or via video call (Zoom or Skype). Anne Rijnink will conduct the interview and will ask you questions about your perspectives of factors that might influence or impact your ability to access Needle Exchange Services during a hazard or disaster. This includes you experience of the Needle Exchange Programme during the COVID-19 lock-down period. The interviews will be audio-recorded and can take up to an hour. If you wish to receive a written summary of the recorded discussion, we can send this to you, and we will be happy to make any changes that you like. You will be required to sign a consent form for participation and will be given a $40 voucher to thank you for your time. We will not use your real name, address, or anything that can lead back to you. All the records and information we have gathered about this research will be destroyed after five years on 1st May 2025.

What will the project produce?

The information that we collect from people may be used for emergency planning. We will be producing a master's thesis and academic articles, as well as presenting the findings at seminars, workshops, and conferences.

If you accept this invitation, what are your rights as a research participant?

- ask any questions about the study at any time;
- choose not to answer any question during your interview;
- ask for the recording device to be turned off at any time during the interview;
- request a summary of the research findings by emailing the researcher to request a copy;
- change your mind and withdraw from the study during or up to one month after the interview and any data collected from you would not be included in the study;
- if you choose to withdraw you will still receive the $40 voucher

If you have any questions or problems, who can you contact?

Researcher:

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Massey University, Wellington

School of Psychology & Joint centre for Disaster Research

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Human Ethics Committee information

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application NOR 20/27. If you have any concerns about the conduct of this research, please contact Dr Fiona Te Momo, Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 x 43347, email humanethicsnorth@massey.ac.nz.

APPENDIX C – PARTICIPANT CONSENT FORM

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

JOINT CENTRE FOR DISASTER RESEARCH

ACCESSIBILITY TO NEEDLE EXCHANGE SERVICES IN A DISASTER

PARTICIPANT CONSENT FORM

This consent form will be held for 5 years

Principal Investigator: Anne Rijnink (Massey University)

Supervisor: Dr Denise Blake (Massey University)

I have read or have had read to me the Information Sheet. I have also had the details of the study explained to me, any questions I had have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time.

1. I agree to the interview being sound recorded. I can request to have the audio digital recording device turned off at any time during the interview.
2. I agree to have my interview data placed in secure storage for five years, after which it will be destroyed.
3. I agree to participate in this study under the conditions set out in the Information Sheet.

I would like a copy of the recording of my interview:

Yes ☐
No ☐

I would like a copy of the transcript of my interview,

and understand I have two weeks to make any comments:

Yes ☐
No ☐

I would like to receive a summary of the findings and have added my email address below.

Yes ☐
No ☐

I _____ (full name) hereby consent to take part in this study.

Signature: _____ Date: _____

E-mail address for final report: _____

Date and Time of Interview:

Location of Interview:

APPENDIX D – TRANSCRIPT RELEASE FORM

ACCESSIBILITY TO NEEDLE EXCHANGE SERVICES IN A DISASTER

TRANSCRIPT RELEASE FORM

I confirm that I have had the opportunity to read and amend the transcript of the interview conducted with me.

I agree that the edited transcript and extracts from this may be used in reports and publications arising from the research.

Signature: **Date:**

Full Name: