

**The Effects of Extreme Weather Exposure on People Experiencing Homelessness in Seattle**

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**Abstract**

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King County, Washington currently ranks 3<sup>rd</sup> in the nation for the number of people experiencing homelessness. Amid an affordability housing crisis, the number of people experiencing homelessness continues to grow in Seattle. People in historically redlined communities of Seattle disproportionately experience homelessness because of gentrification. Resources for people experiencing homelessness, concentrated in densely populated Seattle neighborhoods, support the community's resiliency towards inclement weather. Locally, the effects of climate change have induced an increasing amount of extreme heat, unhealthy air quality, and freezing temperature days in the past decade. Permanent congregate and emergency shelters serve as lines of defense against both mild and severe weather events. Amidst the ongoing COVID-19 pandemic, service providers have had to adapt to mitigate the impacts of a public health crisis on homeless shelters. Underrepresented and underreported, Seattle's homeless population faces

increasing health risks associated with climate exposure and infectious disease. Operators of homeless shelters also experience additive stress from environmental factors. Labor shortages, occurring during inclement weather, result in inadequate shelter availability. People are left out on the street, facing unhealthy exposure to the elements. The purpose of this study was to gain insight into the respective living and working dynamics of shelter operators and people experiencing homelessness (PEH), focusing on moments of environmental stress. Operators and PEH were interviewed to understand the compounding health disparities associated with living unsheltered in order to offer insight into the disproportionate effects of climate change on Seattle's most underserved communities. The major findings of the study were the gaps in resources that the shelter systems endure, and the policy and operational structure that make homelessness services and programs efficacious. Attaining permanent and temporary housing solutions is dependent on an organization's capacity to fulfill non-emergency needs for its clientele.

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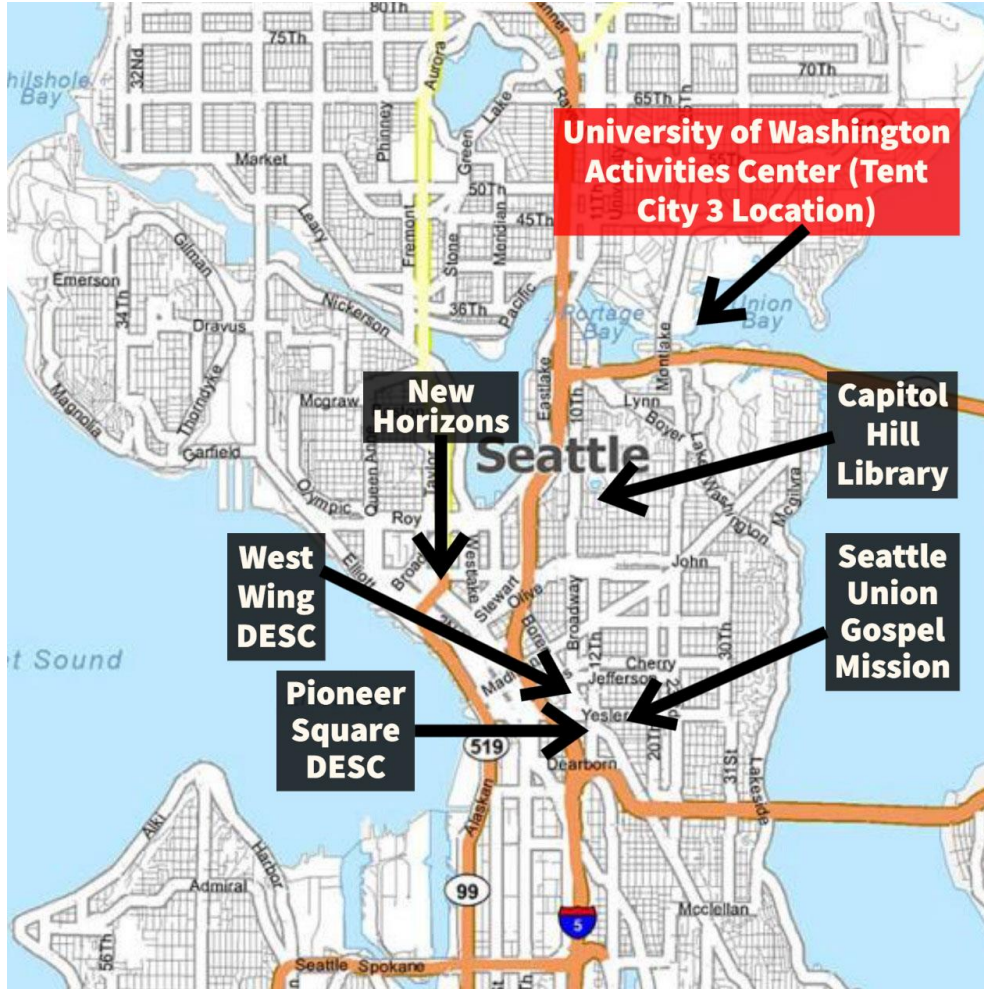
Finally, I'd like to thank my brother, Noah. Getting to be your sister is my favorite thing about life.

## 1. Aims

In 2021, Seattle experienced record heat during the summer and decade-low temperatures in December (Greenstone, 2021). During this December cold snap, the mayor's office announced the city would open as many additional day warming shelters as possible (Barnett, 2022). Only two extra emergency weather shelters opened downtown to serve a city with one of the largest homeless populations in the United States (Greenstone, 2021). The Salvation Army, Seattle's highest-employed homelessness non-profit, reported that 40% of their employees called out sick during the last week of December because of record-high coronavirus cases (Zhou, 2021). Overworked and facing high employee turnover rates, homeless shelters are often under-resourced and underserved during extreme weather events, resulting in capacity constraints. Unsheltered people are at risk of being left outside to deal with deadly weather exposures.

Climate change in Washington State raises summer temperatures and increases the probability of more variable extreme heat events (Wang et al., 2014). As climate change increases the intensity of extreme weather events, historically redlined, low-income communities are becoming more vulnerable (Jan, 2018). Accessibility to shelters that offer resources for warming and cooling reflects a communities' resilience to extreme weather events (Anderson et al., 2021). Yet, homeless shelter operators face challenges in addressing needs for increased capacity while matching workforce requirements to deal with climate change-related events. Moreover, these challenges are exacerbated by cumulative impacts from the combination of extreme climate events and the infectious disease pandemic, when overcrowding and understaffing at shelters can potentially affect the quality of resources provided. Therefore, researching the experiences of shelter operators and clientele will inform the degree to which homeless programs are under-

resourced during extreme climate and pandemic periods.



**Figure 1: Map of Sampled Locations**  
Source: Base Map from ArcGIS

The goal of this research was to evaluate the capabilities of inclement weather shelters in Seattle’s most densely populated neighborhoods. We conducted a cross-sectional study of shelters in the Seattle downtown, Capitol Hill, First Hill, and Central district areas examining the capacities and demands of operators of homelessness-centered services. To understand the

perspective of PEH, we interviewed members of a sanctioned encampment. Through the process of interviewing members of Tent City 3, we learned the reasons people choose not to use shelters, specifically at moments of extreme weather. The study employed qualitative methods based on interviews with homeless shelter operators and PEH to assess community resilience to extreme weather events. Accomplishing these aims, the findings from this study could be used as evidence to advocate for underserved communities, while also exploring Seattle's environmental resilience to climate change in congregate settings. Identifying gaps in resources and services available to PEH informed recommendations toward extreme weather preparedness and homelessness program outreach.

**Aim 1:** Conduct in-person and virtual interviews with shelter operators and PEH on experience during inclement weather events.

**Aim 2:** Evaluate the characteristics of the Seattle shelter and the historical context-sanctioned encampment system in North America.

**Aim 3:** Compare interviews from operators and PEH, and identify themes related to extreme weather decision-making.

### **ERC/IRB approval**

The protocols for the research were submitted to the University of Washington Human Subjects Division (HSD). Since the study did not identify the people interviewed, the study was deemed IRB-exempt (STUDY00016392 approved on 9/27/2022). Additionally, all team members have completed the UW CITI Program web-based training: Human Research Human Subjects Learners (ID 114849). Additionally, the UW DEOHS approved my health and safety protocol for conducting on-site field visits during the COVID-19 pandemic.

## 2. Background

### **Homelessness in America**

People experiencing chronic homelessness endure compounding deleterious health outcomes caused by living in unsheltered poverty (An et al., 2019). In February 2022, the US Department of Housing and Urban Development (HUD) released the 2021 Annual Homeless Assessment, reporting that 326,000 Americans experienced homelessness on a single night in January 2021 (Henry, 2021). HUD's annual report is a tool for estimating the number of people experiencing chronic homelessness, defined as someone who has experienced homelessness for more than three years (Department of Housing and Urban Development, 2022). Point-In-Time counts (PITs) conducted in the last week of January, a relatively cold week everywhere in America, are meant to reflect the apical number of people seeking shelter (Henry, 2021).

For the past two years, HUD has allowed homeless service planning bodies, like the King County Homelessness Authority, to waive their PIT counts to prevent the risk of COVID-19 transmission to shelter staff and volunteers (Fair Housing Act, 2023). HUD estimates that 15 out of every 10,000 Washingtonians are experiencing homelessness (Department of Housing and Urban Development, 2022). The King County Regional Homeless Authority (RHA) skipped its annual PIT count for 2020 and 2021 (Bowman, 2021). The January 2019 PIT estimated there were 568,000 people experiencing homelessness on a single night. The lack of PIT counts, specifically for unsheltered homeless people, means that 2021 estimates only represent 36 % of communities across the nation (Henry, 2021). The usage of emergency shelters accounted for 32% percent of programs aiding people experiencing homelessness (Henry, 2021).

# PIT RESULTS

**13,368**  
2022 POINT IN TIME  
INDIVIDUALS  
EXPERIENCING  
HOMELESSNESS



**Figure 2: King Count 2022 PIT Results**  
Source: King County Regional Homelessness Authority

HUD does not distinguish between the number of people in inclement weather shelters from the year-round inventory (Department of Housing and Urban Development, 2022). The 2022 PIT count for King County estimated that there were 13,368 individuals experiencing homelessness at the time of the January count (Housing and Urban Development, 2023). Figure 2 demonstrates the ratio shift between sheltered and unsheltered individuals experiencing homelessness in King County and reveals that the majority of people counted were unsheltered (King County Regional Homelessness Authority, 2023). Unsheltered individuals experiencing homelessness are more likely than sheltered individuals to be left out of PIT counts because of their transience (SAMHSA, 2016). Without consistent and representative PIT counts for unsheltered people in Seattle, people experiencing homelessness become more vulnerable to infectious diseases and climate-related illnesses.

## Climate Change

Greenhouse gas emissions and land use change are increasing the frequency and intensity of extreme weather events. Wildfires, flooding, freezing temperatures, heatwaves, and other climate events affect population health disparately based on socioeconomic status (Anderson et al.,

2021). Public health planning bodies, tasked with adapting action plans and early warning systems, increasingly aim to reduce heat, and freeze exposures in Seattle. The capacity of community resources, like homeless shelters, is an indicator of environmental resilience against climate change (Bezgrebelna et al., 2021).

There is a lack of research on how exposure to wildfire impacts differing socioeconomic statuses, like housing situations. In coastal areas with a mild climate, like Seattle, shelters lack air-conditioning systems. Relying solely on the ventilation provided by HVAC systems leads to varying abilities of shelters to act protectively (Wang et al., 2014). As extreme weather events intensify, hazardous environmental conditions will exacerbate the negative health outcomes already associated with people experiencing homelessness (Fears, 2022). People who lack housing security and energy security cannot appropriately prepare for or mitigate their exposure to climate events (Anderson et al., 2021).

### **Health Disparities and Housing Insecurity**

Four of the top ten most densely populated areas of Seattle are Capitol Hill, First Hill, Central District, and Downtown (Berger, 2009). These interconnected neighborhoods are home to some of Seattle's most racially diverse communities (Civil Rights and Labor History Consortium, 2020). Historically redlined communities, locally and nationally, experience negative health outcomes disparately (Jan, 2018). 45 million Americans who live in "adverse historical [HOLC designations]" experience "worse present-day local environmental quality and health outcomes, including air pollution, green space, tree canopy, COVID risk, and urban heat" (Lane et al., 2020). In Seattle, non-white people in redlined communities experience higher rates of air

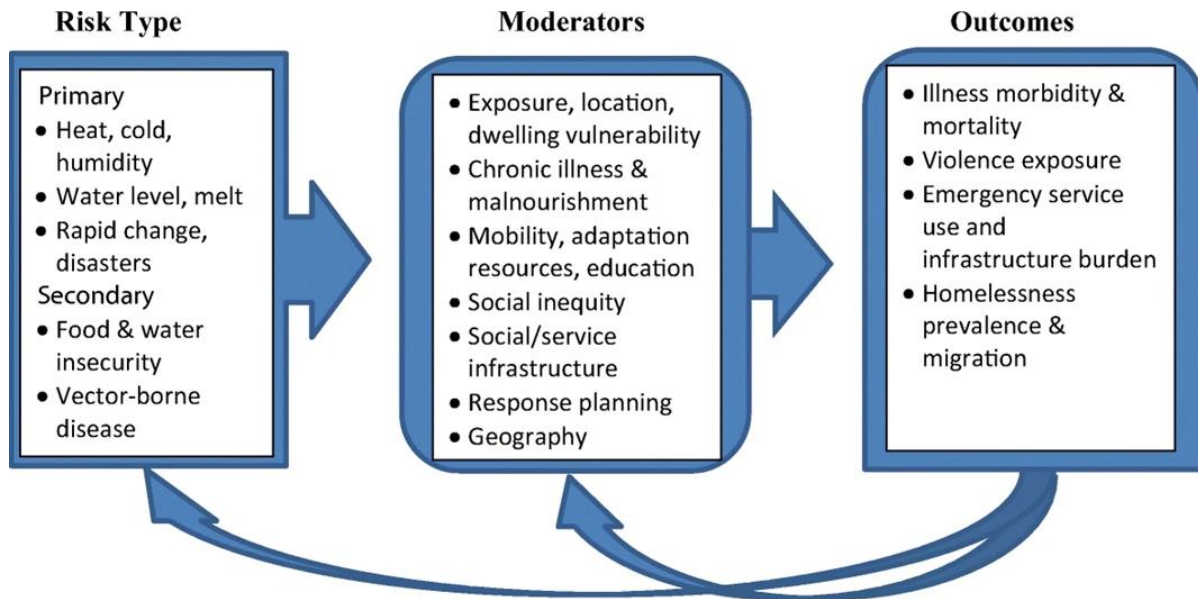
pollution exposure than their white counterparts (Civil Rights and Labor History Consortium, 2020). Average household incomes vary throughout these neighborhoods, potentially reflecting the quality of community resources accessible. Rapid population growth and lack of affordable housing leads to the exhaustion of community resources, disproportionately affecting people experiencing homelessness and low-income communities (Mitchell, 2021). People who need transportation to shelter and health services sometimes cannot use resources because of limited availability and accessibility.

Acknowledging health disparities associated with living inside historically underdeveloped areas, like redlined communities, resources like homeless shelters and libraries act as lines of defense against climate-related health outcomes (An et al., 2019; Fears, 2022). During hot weather temperature events, there is an increase in emergency medical calls, hospitalizations, and mortality in King County and the surrounding areas (Calkins et al., 2016). The demand for homeless and emergency weather shelters has increased in the last few years (Barnett, 2022). Accessibility to warming and cooling shelters are indicative of how prepared Seattle resources are for extreme weather events. Climate change exacerbates the problems already faced by people experiencing homelessness.

### **Homeless Shelters and Community Resilience**

A lack of accessible communication methods hinders the efforts to increase awareness of shelter resources. Crisis Connections, a 24-hour hotline, provides callers with the status of funding, services, and hours of operation for emergency shelters, medical services, transitional housing,

and food assistance in King County (Crisis Connections, 2023). Statewide, homeless shelters communicate operational statuses through the online federal Homeless Shelter Directory (Homeless Shelter Directory, 2023).



**Figure 3: The Climate-Homelessness Relationship Mode**  
 Source: Global Climate Implications for Homelessness: A Scoping Review

Figure 3 depicts the relationship between the **risk types**, **moderators**, and **outcomes** associated with the effects of climate change, and can be applied in my project to analyze the specific vulnerabilities and exposures of people experiencing homelessness (Kidd et al., 2021). The quality and quantity of services accessible is an environmental justice issue, which can be visualized through the emergency services use and infrastructure burden impact on social service infrastructure and adaptation resources. The framework employed for this study describes the

associations between weather and the experiences and outcomes of homeless persons. The framework was sourced from a systematic review of the possible consequences of climate change for people experiencing homelessness. Informed by housing precarity and socioeconomic status, weather (**risk type**) types associated with outcomes are experienced differently based on housing statutes. People experiencing housing insecurity are the most exposed and vulnerable sector of the global population to weather, so they are the most potentially affected by negative health outcomes associated with climate change and weather variability (**moderators**). Kidd et al. (2021) aim to “synthesize the academic literature that addresses the health and social implications of global climate change for homelessness”. In response to a lack of data addressing the relationship between homelessness, climate change, and weather variability, this framework addresses feedback loops between **outcomes** and **moderators** over time to evaluate how climate change impacts mass homelessness and migration.

The researchers who compiled this framework posit that climate change exacerbates vulnerabilities already faced by people experiencing homelessness. The prevalence of homelessness is predicted to increase globally as climate change worsens, meaning the health and social implications of global climate change for homelessness must be analyzed (Bezgrebelna et al., 2021). Utilizing the research, policy, and practice implications of their review, commentary on homelessness and social inequities can reveal trends in approaches to mitigation. Generating risk mitigation and response strategies could help systems prepare for increasing weather variability. As a tentative model for considering climate-homelessness interrelationships, this model can help reveal knowledge gaps in the health and social risks that global and local climate change pose for homeless populations (Kidd et al., 2021).

### **3. Literature Review**

#### **Introduction**

The cultural and societal perceptions of sanctioned encampments, and people experiencing homelessness, affect the availability and accessibility of housing and social services in the United States. Commonly found in the US within larger cities, sanctioned encampments are often referred to as “tent cities.” With an increasing lack of affordable housing and rental assistance options, tent cities have sprung up due to a lack of governmental support and public health deficiencies (Allegrante et al., 2021). In Seattle, tent cities coexist alongside the centralized non-profit and governmental shelter systems networks. PEH experience stigmatization and discrimination based on their housing status, which can affect an individual’s willingness to seek resources (Tausen et al., 2021).

#### **Unsheltered Homelessness**

Researchers relate the quality of shelters available to the rate of homelessness in each area. PEH habitually residing in homeless shelters are referred to as “sheltered”, and a person living in an encampment is referred to as unsheltered (SAMHSA, 2022). The umbrellaed classification of “unsheltered” is a broad definition of anyone who is not regularly living at a shelter or transitional housing program. Conversely, HUD defines congregate shelters as shared, indoor spaces, and non-congregate shelters as indoor spaces with individual rooms for clientele. PEH residing at sanctioned and unsanctioned encampments are more likely to be left out of the point-in-time counts (SAMHSA, 2016). States utilize varying methodologies for counting unsheltered PEH, resulting in inconsistent estimations across the United States (National Alliance to End Homelessness, 2012). The inconsistent data collection methodologies indicate that community

planning to mitigate homelessness is not enough comprehensive to account for the true prevalence of homelessness.

Homeless shelters are depended upon as the first line of support for PEH, but experience difficulties regarding communication and accessibility. Allegrante et al. (2021) criticize North American approaches to addressing homelessness, including infrastructure failures, public health system deficiencies, pandemic-response inadequacies, and policy shortcomings, asserting that without “Specifically, affordable public housing, accessible and affordable transportation, access to clean water and air, and better healthcare and public health services—the homelessness that is rooted in poverty, social inequity, and racial discrimination will remain an endemic problem for the foreseeable future in even the most advanced economies.” For many PEH, encampments are alternatives to staying in congregate and non-congregate shelters. In many states, local governments approach the emergence of encampments with sweeps that undermine the stability and establishment of unsheltered individuals experiencing homelessness. Consequently, encampments can be precarious places to live because of the threat of sweeps.

### **Encampment Sweeps**

The existence of encampments is politicized because of the stigmatization of visible homelessness. Sweeps are a tool to destroy unsanctioned encampments, often resulting in PEH being separated from their communities and being pushed farther away from essential resources. Researchers studying encampments often disagree on the intent of sweeps as means of protecting public health and safety. Inspecting multiple encampments on the west coast, Barnett (2012) describes the successes and failures of former and current encampment communities. The overall guidance for avoiding health challenges is to update inadequate infrastructure. Public health

surveillance in encampments helps mitigate environmental health issues (De Nardo et al., 2023). To promote health in outdoor living situations, reliable and accurate vigilance of sanitation, solid waste, security, food preparation, sleeping areas, disease-borne vectors, animal control, and drinking water must take place (Barnett, 2012).

For unsanctioned encampments that are more likely to have inadequate hygiene facilities, as opposed to sanctioned encampments, sweeps act as a mechanism for local governments and law enforcement to discipline PEH for being visible. Seattle University's School of Law's ongoing advocacy practicum is called the Homeless Rights Advocacy Project (HRAP). HRAP argues that sweeps do not accomplish the goal of pushing residents into the shelter (Junejo et al., 2016). In a survey of Seattle encampment residents conducted by the City of Seattle, unsanctioned encampment residents who were swept "stayed out of shelters due to the inadequacy and inaccessibility of these shelters, citing reasons like the lack of privacy, lack of storage space in the daytime, and lack of autonomy," resulting in only  $\frac{1}{3}$  of survey residents joining shelter spaces after being swept (Scholfield, 2016). The authors contend that homeless encampments exist because there is a lack of affordable housing and accessible shelter facilities, but steadily grow in popularity because of the stability and community fostered in them (Junejo et al., 2016).

### **Stigmatization**

Speculation about the emergence of tent cities is a point of focus for researchers studying the health disparities associated with experiencing homelessness. Since the Covid-19 outbreak in 2020, many researchers' interests have shifted to examining encampments as centers of individual resilience while serving as places of community building. In 2022, the University of Ottawa researchers interviewed people living in outdoor encampments in Toronto, Canada. The

questions sought to explore the mechanisms for mutual support in encampments. At the start of the Covid-19 pandemic, social and health services available to people experiencing homelessness diminished greatly (Boucher et al., 2022). Researchers found that encampment residents relied on each other to meet their basic needs, like seeking food, while also helping improve accessibility for their fellow encampment community members. Participants reported that common risks like violence, stigmatization, and discrimination were easier to manage in the setting of a protective encampment. In Toronto, reported substance abuse overdoses increased significantly in shelter spaces but decreased in encampment spaces (Boucher et al., 2022). The informally established sense of community served as a risk reduction mechanism and encouraged a sense of security and safety for its members.

The positive social contact experienced in the Toronto encampment contributed to a sense of solidarity and emotional connection, which supported members' mental and physical health. When informal support networks, like encampments, are thwarted by governmental actions like evictions and sweeps, those life-saving communities and relationships are damaged (Boucher et al., 2022). When PEH are displaced from their communities, their social connections are degraded. For PEH relying on encampments, isolation means a loss of communal connectedness that supports sobriety, safety, and overall well-being. Participants believed that they could take better care of themselves in an encampment than they could at the shelter because of the ability to support and control their own mutual aid efforts (Boucher et al., 2022).

People's perceptions of homelessness affect their willingness to advocate for financial assistance and governmental support for PEH (Tausen et al., 2021). Specifically, a lack of empathy and

situational understanding of an individual's choice to stay in an encampment can lead to housing and employment discrimination. The added exposure to extreme weather can exacerbate the vulnerabilities of unsheltered PEH, social inequity rooted in poverty denies PEH adequate access to essential healthcare and public health services. Effectively, dehumanizing attitudes towards PEH are detrimental to public health. Evaluating the safety and security of encampments to protect their residents is difficult for researchers because of the lack of trust between the community and researchers (Schiff et al., 2020). The stigmatization of PEH, for their lack of permanent housing, has historically trained the general population to produce a negative narrative. The added visibility of encampments, which represents a lack of affordable living and sufficient social support network, relegates PEH communities from support.

### **Health Disparities and Substance Abuse**

The disparate health outcomes associated with experiencing homelessness deepen the need for more comprehensive homeless services. Olson et al. (2021) reviews public discourse and social commentary on homelessness and discuss the importance of regarding housing as a human right, explaining how the existence of homelessness is created by government policy. Dominant narratives place the blame for systemic deficiencies onto residents of encampments to rationalize displacement and eviction of encampments. However, encampments are manifestations of government and public health deficiencies, specifically the “failure to successfully implement the right to adequate housing and protect rights to basic determinants of health” (Olsen et al. 2021). Moreover, vulnerability to housing insecurity is unevenly experienced. Indigenous peoples are overrepresented in the proportion of people experiencing homelessness in North America. Contextualizing resistance to encampments in a society where colonialization deprived people of indigenous groups of resources, land, and agency demonstrates the current consequence of

imperialism (Olsen et al. 2021). The author advocates for public health guidance to consider the implications of denying encampment residents as sites of resilience.

Sanctioned encampments across North America are organized with vastly different rules and expectations for their community members. Researchers concerned with the safety and vulnerabilities of encampments are also often interested in the permanence of encampments as solutions to homelessness. In a study of healthcare providers in Philadelphia, Pennsylvania, participants were questioned about substance abuse use in the area (Cusack et al., 2021).

Additionally, PEH staying at encampments were asked questions about their personal background, service use/available services, and camp closures. Accessibility and affordable housing were at the top of provider and PEH concerns (Cusack et al., 2021). Exploring the effects of heroin addiction on people experiencing homelessness, all the encampments represented were low-barrier settings. The study's purpose was to evaluate how the RARE method (Rapid Assessment, Response, and Evaluation) could benefit Philadelphia's homeless population (Cusack et al., 2021). For shelter operators and healthcare workers, supporting the sobriety of PEH is crucial to keeping people safe. Tent City 3 in Seattle, unlike most of Philadelphia sanctioned encampments, is a high-barrier setting meaning sobriety is required (Sparks, 2017).

Parallel to concerns about PEH substance abuse rates is a public health concern for disparate health outcomes related to being unsheltered. In the wake of a disproportionate fatality rate caused by Covid-19 among the homeless population in the United States, healthcare workers have become tasked with advocating for vaccinations amid a distrusting population. A Los

Angeles-based study utilized a “community conference approach” to evaluate the peer vaccine outreach model, in which “peer ambassadors” promote Covid-19 vaccines, claiming that “active vaccine outreach is important among people experiencing homelessness because of the long history of marginalization, mistreatment, stigma, and substandard care this population has experienced from healthcare providers” (Choi et al., 2022).

Building relationships with community members is important for providing healthcare services to an extremely marginalized community (Choi et al., 2022). In encamped settings and shelter spaces, communication barriers present equity challenges in service accessibility. Shelters can serve as centralized spaces for job searches, physical and mental health assistance, housing aid, and other essential resources. Encampments often lack these functions, meaning that members must leave the encampment to seek help in these areas. The existence of encampments is dependent on the public health practicality of those spaces. Finding ways to supplement resources in encampments is a pathway to improving disproportionate health outcomes.

### **Tent City 3**

Seattle’s Tent City 3, first established in 1990, is a sanctioned encampment managed by the non-profit SHARE/WHEEL (Seattle Housing and Resource Effort) (Sparks, 2017). Seattle is home to multiple tent cities, so public health organizations and local government groups are interested in learning more about the functionality and viability of tent cities as an informal housing option. Sparks (2017) asserts that the legalization of sanctioned encampments in Seattle was a fundamental transition in the managerial role the state had in managing homelessness. In the absence of “funding for sites of traditional poverty management”, sanctioned encampments aimed to support socially and politically marginalized communities (Sparks, 2017). The denial of

housing, leading to stigmatization and dehumanization by society, is referred to as “propertied citizenship” by Sparks (2017). Since Tent City 1’s inception in 1990, SHARE/WHEEL has fought for the encampment’s legitimacy and viability. Through temporary use permits, the current incarnation of Tent City 3 moves around Seattle every 90 days (Sparks, 2017). Self-managed by inclusive community members, Tent City 3, 4, and 5 now represent the political significance of homelessness as an exercise of self-agency and placemaking. Broadly, sanctioned encampments oppose the government's authority to prioritize propertied citizenship, through proliferated informal dwellings.

Negative stigmatization of PEH affects the quality and quantity of resources accessible. In 2020, Seattle Pacific University hosted Tent City 3 during the fall quarter. School of Psychology Family and Community researchers developed a question guide on community-wide perceptions of PEH and surveyed students to learn if perceptions of TC3 members changed before and after TC3’s presence on campus. Tausen et al. (2021) assess how powerful a dehumanizing perception of PEH can affect a student’s opinion on community efforts to help PEH, concluding a slight association between “exposure to homelessness in one's communities” and “positive attitudes towards individuals who are homeless on a range of dimensions including trust, compassion and affirming situational (rather than personal) causal explanations for homelessness.” Marginalized groups are more likely to be dehumanized by their communities, which triggers a lack of empathy and understanding.

Students who had more interaction with Tent City 3 members had more favorable attitudes toward people experiencing homelessness (Tausen et al., 2021). However, the quality of

interactions is the biggest indicator of whether a student exhibit humanizing perceptions of Tent City 3 members (Tausen et al., 2021). Ultimately emphasizing the benefits of intergroup interactions between sanctioned encampment community members and individuals representing college campuses, exiting homelessness is dependent on how willing societal institutions are to provide extra assistance to PEH. If PEH are burdened with inescapable debts, the dehumanization they endure will only continue to marginalize them from society further.

Tent City 3 community members have been interviewed about a variety of circumstances related to the stigmatization and discrimination that PEH encountered. In 2020, researchers from the University of Washington's School of Public Health Department of Health and Human Services published a study of how legal financial obligations hinder an individual's ability to retain housing security in Seattle, WA. Penalization for characteristically "survivalist" activities disparate impact people at risk for experiencing homelessness (Mogk et al., 2020). The criminalization of being visibly poor, like sleeping, sitting, and standing in public is penalized in three out of four cities in Washington (Mogk et al., 2020). Strategies for resilience are punished, exacting social and monetary sanctions. Through questionnaires dispersed throughout Tent City 3 investigating the relationship between incarceration, legal debt, and homelessness, LFOs were found to be a predictor of an individual's duration of homelessness. "LFOs saddle offenders with debt long after they have fulfilled other commitments of the sentence and probation, rising above and beyond the original conviction." Subsequently, the authors argue that LFO policy reform should be a public health priority (Mogk et al., 2020). Inequitable burdens of debt habitually put people's lives at risk. Criminalizing poverty creates a revolving door around homelessness and

incarceration.

## **Conclusion**

Further research on PEH is needed to accurately assess the benefits and constraints of utilizing encampments. Decision-making on whether PEH decides to stay in encampments is also under-researched, failing to encapsulate why PEH chooses not to go to shelters. Many environmental health specialists are concerned about the lack of adequate public health surveillance at unsanctioned encampments, warranting assessment of how encampments can meet suitable safety standards. Tent City 3, which represents the stricter formations of sanctioned encampments, is not as affected by negative health outcomes associated with substance abuse. However, Tent City 3 members are still stigmatized and discriminated against because of their visible homelessness. Improving accessibility to public health services, especially during events of extreme weather, should be prioritized to protect people from exposure.

## 4. Study Design and Methods

### **Study Design Description**

This cross-sectional study aimed to represent the conditions of inclement weather shelters in some of Seattle’s most densely populated neighborhoods. Interviews were semi-structured, with guiding questions inviting discussion on the flexibility of established shelters to act as emergency weather shelters capacity; communication, accessibility, community outreach concerns; staffing concerns, and gaps in resources (See Appendix III). Interview transcripts will then be qualitatively analyzed (See Appendix II). Additionally, a quantitative descriptive of the neighborhood characteristics will be recorded.

### **Study Population Overview**

Shelter operators from emergency and congregate shelters, and people who work in homelessness services, from the First Hill, Capitol Hill, Central District, and downtown Seattle neighborhoods will be chosen to represent their respective communities. The operators will be selected by snowball sampling. These neighborhoods were chosen because of their redlining history status, high population density, and homelessness concentration. People experiencing homelessness while staying at the Tent City 3 encampment will be interviewed by random selection. This is a non-identifying study, so the names of participants will not be disclosed.

### **Inclusion Criteria**

- *Shelter Operators*
  - Has been employed by a health care authority or homeless non-profit organization for at least a year

- Has worked in homelessness services or programs in the First Hill, Capitol Hill, Central District, and downtown Seattle neighborhoods
- People experiencing homelessness (PEH)
  - Currently experiencing homelessness at Tent City 3 (As of February 2023)
  - Has lived in Washington for at least 1 year

### **Research Team**

Mia Oscarsson and Gabriel Escobedo helped with interviewing and analysis. The research team's positionality fundamentally guides our research goals and motivations. My positionality as a non-white, naturalized US citizen student affects my research interests and intentions. I acknowledge my privileges as a researcher and recognize the importance of imploring an equitable approach to community-based participatory research.

Anisha Azad is a master's student at the University of Washington, and studies environmental health. Anisha was born in Bangladesh and is a naturalized US citizen. She has no direct relationship with interviewees. She earned her bachelors in ecological restoration and conservation from the University of Washington-Bothell and has lived in the Seattle area for 10 years. Mia Oscarsson is an undergraduate student at the University of Washington, and studies human-centered design and urban planning. Mia was born in China and is a U.S. citizen through adoption. She has no direct relationship with the interviewees. She is pursuing a Bachelor of Science in human-centered design & engineering, a Bachelor of Arts in community, environment & planning, and a minor in urban design & planning from the University of Washington. She has lived in the greater Seattle area for 20 years. Gabriel Escobedo is an undergraduate student at the

University of Washington, majoring in geography. He has no direct relationship with interviewees.

All members of this team reside within King County, which is the larger regional community that is being studied. Team members meet on a biweekly basis, often including discussion and reflection on how to conduct our study appropriately on the population being studied.

## 5. Data Collection

### **Participant Recruitment**

Operator participants will be non-identified, but any reporting on interviews will be coded using census tracts and neighborhood coding. Operator participants were recruited online through email, and any interviews were recorded using Zoom. PEH interviews were conducted in person at Tent City 3, with multiple team members present to take notes and invite discussion. Data was collected from both shelter operators and clientele because of how underreported the experiences of people experiencing homelessness are. Not only are shelter operators the facets of homelessness programs and services, but they are also part of a person who is experiencing homelessness's social network. Kidd et al. (2021) assert the importance of a social network to a person's general health and well-being.

### **Data Sources and Collection Processes**

After an initial introduction, operator interviews were scheduled via phone call or email. IDI-eligible criteria interviewees consented to have interviews recorded on the day of their scheduled interview. If interviewed online, transcripts were recorded via Zoom. If the interview was conducted in person, transcripts were also recorded via Zoom. The only demographic information collected for operators was the location of their workplace and name. Interviews lasted between 40-55 minutes. All interviews of operators were conducted in English. No interviewees were compensated financially.

A relationship with Tent City 3 was fostered through volunteer work and attendance of community activities related to the support of Tent City 3. After conferring with Share/Wheel,

the non-profit organization that manages Tent City 3, Tent City 3 members voted on allowing the research team to interview. Tent City 3 members were interviewed in person randomly, based upon who was present in the encampment at that time of day. Interviews were conducted in English and Spanish. Interviews lasted between 25- 55 minutes. No interviewees were compensated financially. Only Tent City 3 community members who had been living in Washington for more than a year were interviewed. At the time that Tent City 3 members were interviewed, they were encamped in the parking lot of the University of Washington's Waterfront Activity Center.

Tent City 3 community members were interviewed on March 1st, 2023. During my attendance on February 27th, 2023 I discussed with Tent City 3 members about interviewing people the following week. On February 27th, 2023 the National Weather Service issued a 30-hour Winter Weather Advisory, estimating snowfall between 1 and 1.5 inches in the Western Washington area (See Appendix A). During the community meeting, Share/Wheel dispersed flyers on emergency shelters in the area, and how to get there. Facing multiple nights of freezing temperatures, some Tent City 3 members were incentivized to seek more information about transportation options to emergency shelters. Interviews conducted reflect the ongoing freezing temperatures Tent City 3 members endured.

**Table 1:** Example Questions from Operator and PEH Interview Guides

Theme	Operator Guide	PEH Guide
Heat-related	What resources does your shelter have to protect people from heat-related illnesses?	Have you ever experienced a heat-related illness while experiencing homelessness?
Cold-related	Do you want to share your thoughts on how well your shelter did in the last cold front?	Do you seek shelter in congregate/established or emergency shelters when it's extremely cold?
Accessibility	In your opinion, are resources available during extreme heat events, extreme cold, and wildfire episodes accessible equitably across Seattle?	For people with disabilities, do you feel like the accessibility of a tent city compares to that of a shelter?
Communication	What challenges does your organization face regarding communication/increasing awareness of shelter resources?	How do you find out shelters that are open?

**Data Logistics and Storage**

- Non-identifying IRB-approved study, no names will be publicized.
- Interviews transcripts- recorded over Zoom, and saved onto the personal drive. Shared over private UW google drive folder only accessible to the interview team.
- Census tracks- representatives from shelters will be organized by the census track that they work in.
- Each participant is given a unique identification code. Currently using a coded Excel sheet to track these two variables of the location represented and participant ID.
- Study records available to Anisha Azad and the rest of the research team.

## 6. Data Analysis

### **Overall Plan**

Kidd et al. (2021) hypothetical model for considering climate-homelessness relationships will be used to analyze the data. The origin of the framework stems from a literature review of homelessness, population health, and marginality, and the public health implications of weather and climate change. This framework draws associations for the disproportionate impacts of climate change experienced by vulnerable populations, like people experiencing homelessness. The climate-homelessness interrelationship model is applied to evaluate disparate exposures depending on health and social outcomes.

### **Coding Description Overview**

Ten interviews were transcribed by the interviewing team. To develop a codebook for this analysis, data-driven codes were created that stemmed from recurring themes identified. Two separate question sets were developed, for operators and PEH, based on categories: Current experiences with weather, communication and outreach, accessibility of resources and services, staffing and management, and pandemic-related responses. The original framework utilized quantitative metrics, like ambient temperature and shelter availability, to describe the relationship between service access. This study similarly aimed to make these connections but through qualitative descriptions. Quotes will be used to help present themes.

### Late-stage analysis/interpretation

Atlas.ti was used to code these interviews, ending up with 21 codes and 6 categories: Challenges, Emotional Response, Situational Behavior Change, Tools, Effect of Inclement/Extreme Weather, and Decision-Making (See Appendix III). In the climate-homelessness interrelationship model, weather exposure risks are heightened for PEH. Access to social resources limits someone's ability to recover from such events, exacerbating their pre-existing vulnerability to other negative health outcomes. Examined through the coding process, emotional response and situational behavior were affected by the occurrence of weather events. Themes between risk types (weather/pandemic/economic insecurity), moderators (inequity/accessibility/resources), and outcomes (homelessness prevalence/ exposure/service use) were identified. These themes reveal possible recommendations for improving the experiences of individuals facing housing insecurity, and services meant to help them.

**Table 2:** Codebook

<b>Code</b>	<b>Comment</b>	<b>Category</b>	<b>Inclusion / Exclusion Criteria</b>
Accessibility and Availability constraints	This code describes concerns or appreciations related to accessibility or availability of shelter resources and services	Challenges	N/A
Closure of facilities/services	The code describes what happens when a shelter space closes, and the conditions that the space might open or close	Situational Behavior Change	N/A
Communication and Outreach	This code describes methods of outreach and communication that shelters and programs employ to	Tools	N/A

Code	Comment	Category	Inclusion / Exclusion Criteria
	get the word out about their services		
Compassion	This code captures empathetic responses to people experiencing homelessness	Emotional Response	<b>Inclusion:</b> discusses operator or PEH showing kindness understanding <b>Exclusion</b> demonstrates lack of kindness or understanding of situation
Discomfort	This code captures negative and uncomfortable feelings of existing in shelter spaces	Emotional Response	N/A
Disincentive	This code captures reasons why someone might choose to not seek out services/go to a facility	Decision-Making	N/A
Fluctuation of people	This code captures the conditions under which staff or clientele numbers fluctuate	Situational Behavior Change	<b>Inclusion:</b> discusses increase or decrease of staff or PEH using shelter/homelessness program resources
Freeze/Precipitation Experience	This code captures people's experiences during freeze or precipitation events.	Effect of Inclement/ Extreme Weather	<b>Inclusion:</b> operator discussing their own or someone else experience <b>Exclusion:</b> non-operator/non-PEH experience
Gaps in resources	This code captures gaps in resources available to people, and potential ways to improve shelter experiences.	Challenges	N/A
Heatwave/wildfire experience	This code captures people's experiences during a heatwave or wildfire event.	Effect of Inclement/ Extreme Weather	<b>Inclusion:</b> operator discussing their own or someone else experience <b>Exclusion:</b> non-operator/non-PEH experience
Important Quotes	This code contains quotes that stand out for their poignant descriptions of their respective situations.		N/A

<b>Code</b>	<b>Comment</b>	<b>Category</b>	<b>Inclusion / Exclusion Criteria</b>
Incentive	This code captures moments in which people are incentivized to use shelter resources or services.	Decision-Making	<b>Exclusions:</b> reasons people are incentivized to use resources/services
Operational Change	This code captures how shelters conditions and services change under moments of stress (I.e., pandemic and/or weather related)	Tools	<b>Inclusion:</b> personal perspectives and institutional policies
Pandemic response	This code describes how the Covid-19 pandemic affected shelters and people experiencing homelessness	Situational Behavior Change	<b>Exclusion:</b> Discussion about the pandemic unrelated to shelter operations
Services offered during cold	The code captures reasons why, during moments of extreme cold, people especially decide to come inside	Effect of Inclement/ Extreme Weather	<b>Inclusion:</b> Service/resources introduced at moment of inclement weather
Services offered during heat	The code captures reasons why, during moments of extreme heat, people especially decide to come inside	Effect of Inclement/ Extreme Weather	<b>Inclusion:</b> Service/resources introduced at moment of inclement weather
Shelter/program Policy	This code captures formal and informal rules and standards that shelters enforce/don't enforce	Tools	N/A
Staffing limitations	The code captures how staffing and/or resource shortages affect the capabilities and qualities of services provided at shelter.	Challenges	N/A
Staffing Support	The code captures how staffs support each other, and how organizations and governments work together	Tools	N/A
Substance abuse	This code captures how substance abuse complicates the lives of people who inhabit shelter spaces and shelter operators.	Challenges	N/A
Tent/Shelter Choices	This code group demonstrates decision binary	Decision-Making	<b>Inclusion:</b> description of reasoning people who live in encampments stay outside

Code	Comment	Category	Inclusion / Exclusion Criteria
			<b>Exclusion:</b> decisions made during non-inclement weather
Tent/Shelter Choices: Decision to leave tent and come inside	This code describes the decision-making of deciding to leave the tent and go into a shelter	Decision-Making	See Tent/Shelter Choice
Tent/Shelter Choices: Decision to stay in tent	This code describes the decision-making process of a person deciding to stay in their tent rather than going inside to an emergency/congregate shelter.	Decision-Making	See Tent/Shelter Choice

## Results- Population

**Table 3:** Data Overview

Study ID	Interview/FGD Date	Site	Interviewer	Transcriptionist	Language	Length (minutes)
O_1	3-Mar	Capitol Hill Library	Anisha Azad	Anisha Azad	English	63
O_2	24-Feb	New Horizons Belltown	Anisha Azad	Anisha Azad	English	51
O_3	23-Jan	Seattle Union Gospel Mission Downtown	Anisha Azad, Gabriel Escobedo	Anisha Azad	English	40
O_4	1-Mar	West Wing DESC	Anisha Azad	Anisha Azad	English	75
O_5	2-Mar	Pioneer Square DESC	Anisha Azad	Anisha Azad	English	62
TC3_1	1-Mar	WAC Lot	Anisha Azad, Gabriel Escobedo, Mia Oscarsson	Mia Oscarsson	English	37

TC3_2	1-Mar	WAC Lot	Anisha Azad, Gabriel Escobedo, Mia Oscarsson	Mia Oscarsson	English	45
TC3_3	1-Mar	WAC Lot	Gabriel Escobedo	Gabriel Escobedo	Spanish	21
TC3_4	1-Mar	WAC Lot	Anisha Azad, Gabriel Escobedo,	Anisha Azad	English	29
TC3_5	1-Mar	WAC Lot	Anisha Azad, Gabriel Escobedo,	Anisha Azad	English	51

Participant Demographics

All PEH transcripts included were collected from in-person interviews on-site at Tent City 3. At the time of these interviews, Tent City 3 was encamped at the Waterfront Activity Center at the University of Washington. All 5 participants have lived in Washington for more than a year. No other demographic information on participants was taken.

All operator transcripts included were collected from interviews with people who worked in homelessness services. Four of the participants work in congregate shelters and 1 works in a library that is used as an emergency shelter space.

**Table 4: Operator Demographic Table**

<b>Characteristic</b>	<b>N (%) or Median (IQR)</b>
Operator	100% (5)
Works in Census Track 74	20% (1)
Works in Census Track 80	20% (1)
Work in Census Track 92	60% (3)

**Table 5: PEH Demographic Table**

<b>Characteristic</b>	<b>N (%) or Median (IQR)</b>
PEH	100% (5)
Resides at Tent City 3 as of February 2023	100%(5)
Washington Resident for more than a year	100%(1)

### **Results-Thematic Description**

#### General Overview

Ten interviews were qualitatively analyzed to assess Seattle’s community resiliency against the risk associated with extreme weather exposure. The health of the entire emergency response system depends on the attitude and strength of the shelter workforce. From the perspective of shelter operators, the themes that I found to highlight the ways that participants believe the shelter system is strong and weak in the face of stress. From the perspective of PEH who decide not to go to shelters, the shelter system represents a lack of freedom and self-agency.

Considering the effects of the Covid-19 pandemic, many participants also reflected on the factors that made their capacities fluctuate. Overall, the following themes describe how an overburdened system is dealing with the effects of climate change and a pandemic.

#### Operator Interviews

##### **Key Themes**

- The Covid-19 pandemic introduced mass, spontaneous operational changes to the Seattle congregate and emergency shelter system.

- A minimal and overworked operator workforce reduces the effectiveness of inclement and extreme weather responses.
- People experiencing homelessness seek out shelter services and resources more during inclement weather events.

Theme 1: The Covid-19 pandemic introduced mass, spontaneous operational changes to the Seattle congregate and emergency shelter system. Pandemic-related shelter responses overlap with services needed to treat cold and heat-related illnesses, which exacerbates system resources. Additionally, with attention pulled toward addressing Covid-19 protocols, standard rehousing, and other recovery support services stalled. From the standpoint of extreme weather response, there are positive and negative innovations brought on by the institutional response to the pandemic.

Shelter operators in Seattle are charged with the extremely difficult task of protecting public health, while also balancing housing demands. All participants worked in shelter services for over a year, and 80% worked in shelter services pre-pandemic. Shelter staff has extremely high turnover rates, so most participants can reflect on the conditions of shelter systems before and during the Covid-19 pandemic.

*“I would rather deal with inclement weather than the pandemic again.”*

*“We were so minimally staffed for a while already, like our starting staffing wasn't great. And so, obviously when there are sick calls, then we just go down. We weren't helping ourselves because we didn't have a lot of buffers for staffing”*

Staffing and resource shortages made it extremely difficult to provide people with services, especially as hospitals became extremely restrictive. Multiple participants discussed how hospitals would reject people experiencing homelessness seeking mental health support. Transporting people to and from medical providers prevented drained transportation options. Minimal staffing decreased many shelters' capacity to assist people with non-emergency services.

*“Yeah, so our numbers went down for sure. And the way we serve our guests went down.”*

*“How we have had to turn our community room into quarantine because quarantine eventually like started to diminish or reduce the amount of q&a sites that they had. Consistently shifting how we deal has it was just an absolute pain in the ass.”*

*“The city was a ghost town. It was hard supporting the clients and I know that our case managers at that time were having a hard time. Even housing clients even internally, just because we didn't know at the time, we didn't know how the COVID spread how it affected people”*

The pandemic resulted in every physical process at shelters changing. People couldn't apply for IDs, which hindered their ability to apply for subsidized housing. Shelter operators had to make hard decisions when PPE resources were low, and often had to make personal safety sacrifices. Internally, the pressure and the stress from the pandemic caused many operators to quit. An optimistic transition that occurred due to the pandemic was the rising necessity to have people in their own spaces. Some of the largest shelter management systems in Seattle acquired hotels, which they have kept funding. The new hotel shelters stay at capacity, which is encouraging for the city to invest in more non-congregate settings.

*“It's a low barrier housing first harm reduction-based model... people have hotel rooms instead of staying in like bunk beds... This is primarily a response to the pandemic. But I've noticed over the past couple of years, that it's also been a wonderful tool in responding to severe weather events are congregate or congregate setting before was just like I like I said, a large dorm without any air conditioning. There was heat in the winter but no air conditioning. And during this the last couple summers these heat waves have been pretty intense. And having access to like hotel style air conditioning is probably literally a lifesaver for some folks.”*

For many people experiencing homelessness, it is extremely discouraging to stay in a congregate setting. There is a lack of privacy, and many people fear their belongings will be stolen in congregate settings. This is also a positive change for emergency weather response because incentivizes shelter use more than before. Multiple participants noted that staying in non-congregate settings, as opposed to a congregate setting, supported their mental health. The structure and comfort that staying in a singular room provide encourage people to utilize shelter resources.

Theme 2: A minimal and overworked operator workforce reduces the effectiveness of inclement and extreme weather responses. Burnt-out staff are less likely to also provide services catered to non-emergency needs.

Multiple participants related their stagnant outreach capabilities to their reduced shelter capacity, which is caused by staffing shortages. Unless employed in upper management, turnover rates for shelter staff are very high. Additionally, because of the pandemic, many immunocompromised shelter staff decided to quit their in-person roles. Operator roles are extremely taxing, and burnout is very common. An obstacle to equitable housing solutions is the lack of trust many people experiencing homelessness have in the shelter management systems. Building strong,

interpersonal relationships with clientele encourages them to come back another day.

*"We're not wanting staff to like risk their lives coming into work if they want to try absolutely, yeah. But if you can't, it's okay. Like, we can't force you to risk your life coming into work every day"*

*"What it does is it causes a lot of burnout among staff. They're expected to do more and they're not getting paid what they should be paid. I want to say fuck the healthcare system is universal. Yeah. And I wish that they could do more for our guys, for folks in the homeless community"*

Especially for emergency shelters with fluctuating and transitional labor force, management often struggles to provide resources to keep multiple shelters in an area open. For one participant who worked at an emergency cooling/warming center, finding people to work has been historically challenging. Emergency weather shelters in Seattle share employees, and pool resources in areas with the highest concentrations of people. However, this leaves large parts of South and North Seattle out of staffed shelter circuits.

*"Main concern sometimes is the staffing levels. when we feel like we don't have enough staffing to really safely manage the environment, that's usually the highest concern from staff when we have to open as cooling centers."*

*"That's the main thing is just to make sure we have not only enough staff, but the right makeup of staff. You know, we have like, like half the people are visiting staff."*

Multiple participants discussed the grey areas of operation in their shelters. Typically, people aren't allowed to smoke cigarettes inside or abuse substances on shelter grounds. However, experienced operators know that if they don't abuse substances on the grounds, they'll end up using substances somewhere else and get arrested. Bending the rules in this scenario leads to fewer arguments and encourages people to keep utilizing shelter resources. If a client is disruptive, a more experienced shelter operator is less likely to kick them out. From the

perspective of the participants, newer operators lack the experience to make consistent well-informed decisions.

*“People come in to be warm, and on a very human level that that, that's, you know, it's completely relatable and it makes the work that you do worth it... And so because it becomes more on a human level becomes more, I guess, meaningful, then I guess, on a personal level, you take it, you kind of put a little extra touch of human warmth into it.”*

*“So I had a long term friends that I lived with in the 2000s, and we parted ways permanently. Because of his drug addiction. And then he was staying at our shelter while I was working there. And was asked to leave because he was drinking on site. And at that time, we didn't allow use on site and he didn't return and then this was in like, November-ish. And then that December, he died from cold weather symptoms on the street in Seattle Center...our rules essentially push him away from accessing shelter.... in hindsight, I would have said, let him stay”*

Shelter operators do not want to turn away people that need help. Spending even one night out during extreme weather can be deadly. Substance abuse also makes people register hot and cold less, which can affect a person’s decision to seek out shelter. The operators I interviewed were driven by compassion but overworking them causes people to burn out. To support a staff that has the time and energy to form relationships with people, shelter management systems must advocate for their employee’s physical and mental health.

Theme 3: People experiencing homelessness seek out shelter services and resources more during inclement weather events. This puts pressure on the emergency health and shelter systems to anticipate usage, which is increasingly difficult.

During weather events that are predicted to be extreme, shelter management is typically notified within 24 hours to start preparing. For permanent congregate and non-congregate shelters, the task becomes securing food and staffing resources because of transportation constraints. For

emergency shelters, operators must decide what locations they can open based upon which staff can find transportation/walk to that location. This makes it hard to predict what smaller emergency weather shelters will be open, especially for people who don't have phones.

*"But literally it was one of those situations where there are things we have to do in order to prepare. It's not a lot, but a lot of the times some of the stuff can't even be really prepared."*

*"Yeah, like, even within the DESC like services are limited as well. When it comes to weather, you know, is like mental health services or substance use disorder services. Everyone is pretty much working at capacity, if not more, and even during those episodes."*

During inclement weather events, multiple participants expressed how rules became more lenient. Ideally, no one is denied shelter in a space, not at capacity. However, being stuck inside often ignites tension, which can lead to fights. One operator described that instead of barring people from coming back to shelter space for multiple days as protocol dictates, during inclement weather events, it will just be for the day. During the winter, people are more inclined to seek out shelter as compared to during extreme heat events.

*"That's why inclement weather everyone's kind of bonding like, hey, yeah, we're stuck inside. It's snowing like crazy outside. Let's play or like, let's chat. Let's watch a movie"*

*"It'd be snowing outside. There's already a foot of snow on the ground. How many people were like aren't coming. You're not supposed to be in here because you're barred or you're BRC building billowing was supposed to be up here. But now you caught but you're here. You're at least safe. It's warm."*

The risks and exposures of staying outside during inclement weather are well-known to shelter operators. The awareness of available shelter resources is hindered by communication constraints. By the time wildfires have raised Seattle's air quality index to unsafe levels, indoor emergency shelters are just starting to open their doors. One participant suggested that instead of

waiting that long to open cooling shelters, management systems should start preparing when local wildfires begin. Without the same thorough planning process as winter storms, people are more vulnerable to the severity of heat waves and wildfire smoke.

*"And I just remember being pissed about it because I was like, did they open this up in time even knowing that there was already smoke in the air? Yeah. And also knowing that the wildfires were, were moving quickly."*

*"It became like a moral issue for you as staff because it's like, we've had I've had clients die, sleeping in dumpsters. You know, trash gets picked up and they're crushed. Or they just die of hypothermia."*

Emergency weather shelters serve as a first line of defense against extreme weather for people experiencing homelessness. Every summer and winter, our emergency service system becomes increasingly stressed. The institutional gaps in the system, like communication dysfunction and staffing shortages, are already hampering the abilities of homelessness services today. Faced with the reality that rising zoonotic disease outbreaks, increased extreme weather, and dwindling affordability housing options put more people at risk of experiencing homelessness. Programs related to helping people experiencing homelessness must expand and reform. Strict policies within shelters negatively influence access to housing services, warranting a re-evaluation of standard practices.

## Tent City 3 Interviews

### **Key themes**

- The sense of community fostered in Tent City 3 (TC3) provides physical and mental health support, along with the sharing of essential resources. Especially under the pressures of the Covid-19 pandemic, these informal support networks are invaluable to individuals.
- If an unsheltered person experiencing homelessness decides to go to a shelter during extreme weather conditions, it is oftentimes to access resources unavailable at Tent City 3.
- If an unsheltered person experiencing homelessness decides to not go to a shelter during extreme weather conditions, that decision is commonly based upon negative past experiences in shelter spaces.

Theme 1: Under the isolation of the pandemic, and the added stress of extreme weather events, methods of outreach and communication utilized by PEH are weakened. Subsequently, the opportunities and services catered towards PEH become less accessible. The informal support networks fostered through the community are fundamental to the survival of unsheltered PEH at Tent City 3.

*"I mean, there's, there's definitely some sort of like, mild peer pressure. You know, like, you ask around like, "Is anybody else going?" and everyone else was like, "Nah, I think I'm just gonna stick it out" And then you're like, "Well, am I just gonna go by myself?" You know what I mean?"*

*"I prefer being outside, I'd rather be feeling like I'm camping than feeling like I'm homeless."*

The sense of stability and establishment created by the TC3 community encourages the collective caretaking of fellow members, and the campgrounds itself. During moments of extreme weather, TC3 organizer SHARE/WHEEL disperses information about available day and night shelters in the area. However, in the fear that their belongings will be stolen, TC3 members are pessimistic about leaving their tents to go somewhere else. Coupled with the knowledge that people who are visibly homeless are often stigmatized in society, multiple participants discussed reluctance to use shelter spaces.

*"Tent City is only giving you temporary housing, temporary shelter. So really an emergency shelter. People do tend to stay here because of the freedoms, we have a lot more freedom than the typical indoor shelters."*

*"I like the community here though, too. And I also feel hopeful here more than I did the other place"*

The social connections and camaraderie fostered in TC3 positively influence its member's sense of self-worth and personal stability. Participants relayed how they felt shelter spaces, even congregate sites, felt isolating. The ability to employ mutual aid and support to fellow members bolsters TC3 members' safety and well-being. TC3 perceived shelters as sites of freedom and self-determination loss, which contributes to their hesitancy to seek out shelter resources and services.

*"There's a real problem right now getting case managers all over, all over the system."  
"And we need more people in here. They are saying we should have 75. And then we said we don't have the tents for 75 people, we don't have all these things."*

*"People will ask, like, "Can you help me get a job? Can you help me find housing?" ". Like no, we're set up to provide you a place to live. But I would, I mean, that'd be great if we had, if we could do that kind of stuff."*

While TC3 was commonly described as a site of community connectedness, participants acknowledged how consistent, accessible facilitation of resources hindered their ability to acquire jobs and housing. Without a case manager on site, TC3 members are told to go to more permanent homeless programming spaces to find those resources. Additionally, under the pressure of the city to be at capacity with 75 members, SHARE/WHEEL is currently encouraging TC3 members to bring more members in. However, without adequate resources to accommodate more people, TC3 members reported nearly 40% since the start of the Covid-19 pandemic. TC3 members are therefore responsible for taking on more community roles, like security, which undermines their ability to get a full-time job because of timing constraints. These gaps in resources hinder TC3's members' ability to acquire housing security.

Theme 2: During extreme weather, if Tent City 3 members decide to leave their tent, they go to an established shelter because of the resources and stability provided by the space.

At the time these interviews were being conducted, Seattle was experiencing freezing nighttime and daytime temperatures (See Appendix I). I was invited to attend a TC3 community meeting on February 27th, 2023, in which Share/Wheel circulated materials on informal and formal shelter openings (See Appendix B). In an interview with a TC3 member who owned a small dog, utilizing the shelter during this freeze was extremely beneficial to her pet's health. TC3 members who engaged with an indoor day or night shelters during this week reported positive reviews of those resources.

*"I was like, what should I take with me, what should I not take with me? Not knowing what's it gonna be like in a new situation? You know, like, I went and I'm completely sold on it now. Like, I'm definitely pushing and talking it up more this next year."*

*"Trying to get into a place where it's 24 hour or you know, yeah. I mean, emergency that, emergency, to me means you really, you're really in need you know what I mean? And so getting, getting that next step to somewhere more stable. So it's like, like, that's one of the pluses here"*

Multiple participants viewed TC3 as an emergency shelter space, a stepping stone to their next stage in life. Accompanying the fleeting belonging at TC3 was a sense of disdain against utilizing more permanent spaces, like established shelters. Established shelters are heeded as situations of sacrificing autonomy, TC3 members make a deliberate choice in choosing to not seek out shelter on a regular basis purposefully.

*"I'm sure they don't have a lot of money and I'm sure maybe it's poor training or whatever. But they were useless. I was like, "I need a place to stay tonight. I'm desperate". And they were like, "Well, you know, you're a single woman, you can sign up for a home". You know, "Well, when would I know?" "Oh, in about a month, in about a month they'll let you know whether or not you can go". It's like, I'm desperate! I didn't sign up for anything that they told me about"*

*"Other than that, shouldn't be here if they're in a wheelchair. They should be somewhere more stable"*

Multiple participants, who have been experiencing homelessness for multiple years, have attempted to habituate in shelter spaces long term. They acknowledged the benefits of shelter spaces as more accessible and having more opportunities than TC3, but felt like the services and resources typically provided did not support their needs. One participant noted how specialized shelter resources limited his ability to get consistent shelter, encouraging him to come to TC3. Overall, TC3 members recognize that their community would not work for people with severe

accessibility concerns and non-sober individuals, but for people with less support needs TC3 was the optimal informal dwelling to live in.

Theme 3: Members of Tent City 3 choose to live in Sanctioned encampments because of the privacy and agency retained by choosing not to stay in a shelter. Living in a high-barrier transitional setting, like Tent City 3 sustains an individual's ability for self-management, independence, and autonomy. Previous bad experiences at congregate and emergency shelters often discourage TC3 members from using shelter spaces, even during moments of extreme weather.

*"When you're on the other side before you're homeless, you're like "Well why don't homeless people just go to shelters?". But like, like one thing, all your stuff is there. So you have to figure out what subset of stuff you're going to pack"*

*"That means every time you get up your mat to go to the bathroom, you have to literally take everything with you, haul it with you to the bathroom and then haul it all back to your mat, you know."*

Tent City 3, established in 2000, is a roving-sanctioned encampment with a capacity to hold up to 75 people (Sparks, 2017). As a high-barrier non-congregate setting, community members are required to be sober and able to work in community roles. For TC3 members, agency and privacy are incentives for staying in a tent as opposed to a shelter.

*"I had one tent last year, I think it was like 30, you know, 30 degrees outside, maybe it was 32 inside. Like, it was like. Does this tent maybe get three to four degrees warmer inside? The tents don't protect you."*

*"But in the summer, we will literally all be out sitting outside waiting for the sun to set. Someone put a thermometer in a tent one time just out of curiosity. 110 degrees. 110 degrees. There's no*

*air movement, and it becomes a little box that just, just heats up to an unbelievable degree. So we all hang out outside, hopefully under shade."*

TC3 members were adamant that they knew tents were not protecting them from exposure to extreme weather. TC3 occupies a variety of spaces throughout the year, ranging from shaded greenspaces to sloped parking lots, like the Waterfront Activity Center. In the event of extreme cold weather, participants who decided to stay at the camp at night described the harrowing conditions of staying in a tent during freezing, windy temperatures. Reflected on as tests of survival, participants who stayed still believed their experiences staying in their tent were more favorable than trying to access a shelter.

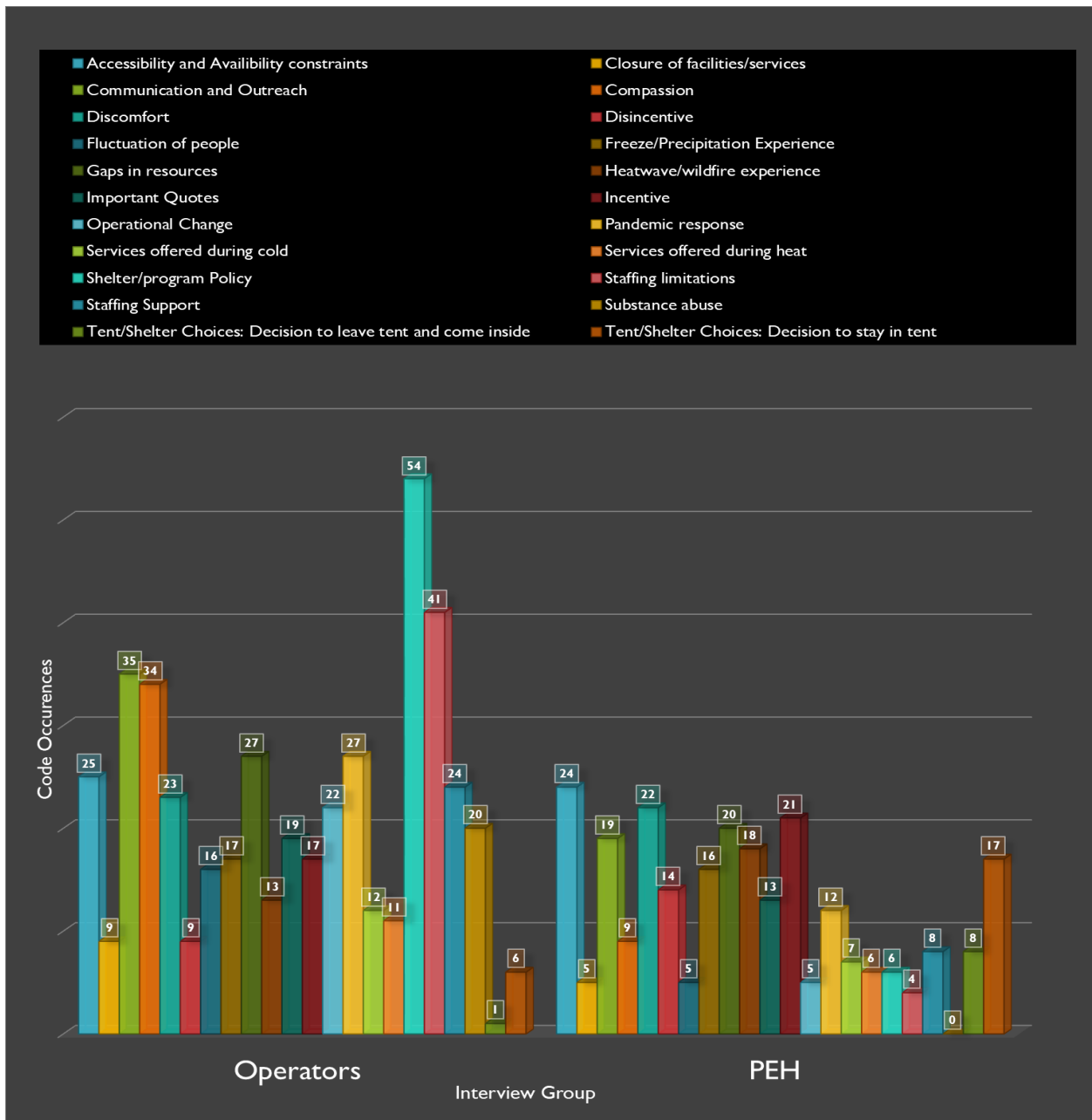
*"Where indoor shelters, like I said before. Yeah, you're bunched up with people. And we just went through COVID. So you have that threat on the inside, would rather be breathing what we're intended to breathe, you know?"*

*"So we were, so on that side we've just been really lucky in a weird way, we've been less affected by COVID than other places."*

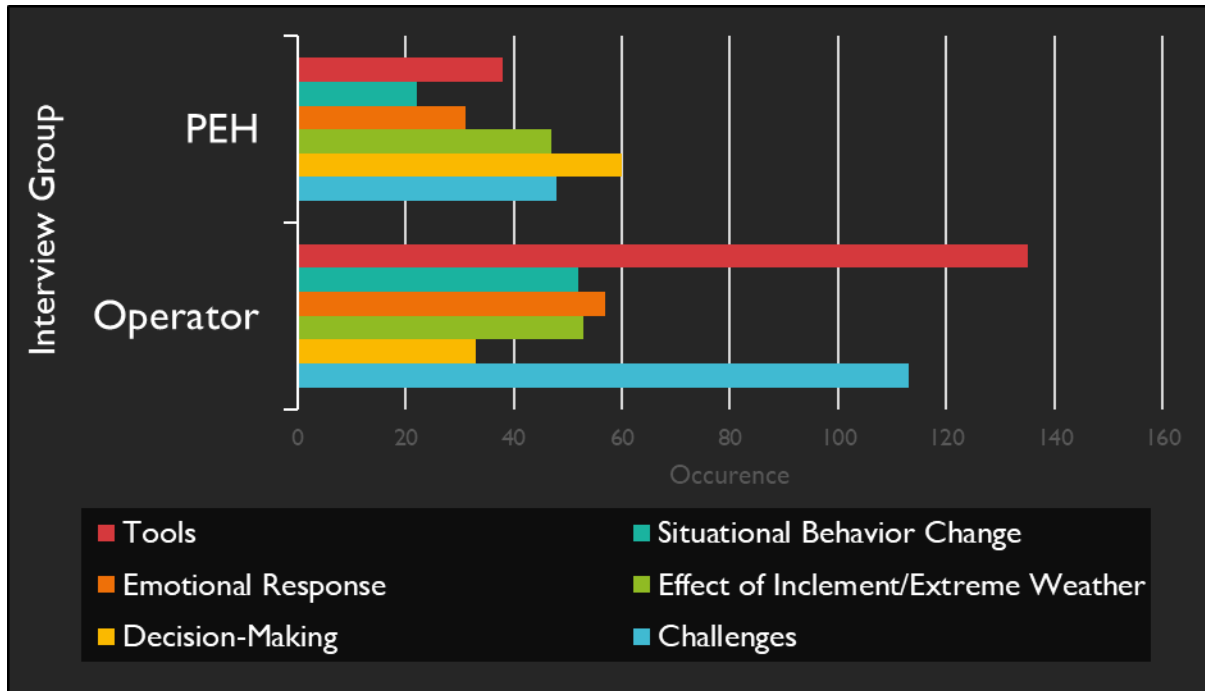
*"If you see on the news, like "Stay inside!". Well, it doesn't make any difference."*

Seeking indoor shelter became further complicated with the outbreak of the Covid-19 pandemic. TC3 members claim that no members of their camp incurred a symptomatic case of Covid-19 till 2022, which local clinicians at the University of Washington who work with TC3 confirm. Participants believed staying outside nearly 24 hours of the day prevents their exposure to Covid-19, which furthers their beliefs that going to congregate shelters would lead to an infection. Acknowledging that PEH living in shelter spaces were up to 3x more vulnerable to being exposed to a person with Covid-19, many TC3 members made an educated decision to not seek congregate shelter accommodations.

## 7. Discussion



**Figure 4: PEH and Operator Code Occurrences**



**Figure 5: Code Category Comparison**

Accessibility, availability, communication, and community outreach were some of the most talked about apparatuses for shelter operators (See Figure 4). These four concepts play into each other, shelter operators play a part in communicating with their communities about their services and programs. Participants all agree that resources and services became less accessible because of the pandemic. The benefits of communication were a powerful tool for participants, it empowered public awareness and trust. Participants also felt strongly about the role of incentivization in their line of work. Certain incentives only shelters could provide, which participants believed brought people into the spaces and had them coming back. Especially concerning moments of inclement weather, incentives improved the chances of bringing people in.

The negative experiences associated with freezes, heavy precipitation events, heatwaves, and wildfire episodes demonstrated why incentivizing works. The common observation of rationality was that people are more likely to prioritize their health and safety during extreme weather. However, people often felt entirely unsafe while existing in these spaces, which affected their overall decision to seek shelter. Operator participants felt strongly about the role that staff turnover and overall passion affected people in their workforce. As demonstrated through the climate-relationship interrelationship model, the outcome of overworked emergency service use negatively affects social inequity (Kidd et al., 2021).

A lack of a consistent workforce and the resurgence of minimal staffing negatively affected the quality of services they could provide to their clientele. Shelter staff are paid extremely low amounts, so many talked about how they had to live outside of the city. During snowstorms, many staff are unable to find transportation to work. In this situation, shelters surrounding the city center are often run by skeleton crews, who live within walking distance of the shelter they work at. This puts the local crew under extreme stress. They are often overworked during inclement weather events. Since the shelters are at minimal staffing during these events, services related to finding housing and receiving medical attention are put on hold. Effectively, the stress of inclement weather stalls rehousing for people experiencing homelessness, which in turn feeds back to homelessness prevalence (Kidd et al., 2021).

For Tent City 3 residents, going to a shelter was a last resort during extreme weather events. Emergency shelters, that open in response to extreme weather notices, are congregate spaces. Tent City 3 participants reported that going from a private situation, like their tents, to a public

one was unappealing. Tent City 3 members discussed how the idea of having to bring all their belongings with them to shelters, and then carry it around with them when they went to the bathroom because they feared stealing, was a deterrent to going to shelters. As a response to the Covid-19 pandemic, the Downtown Emergency Services Center transitioned from large, congregate settings, to smaller non-congregate settings for their shelters. The DESC bought multiple hotels, and people who now stay at those shelters either have their own rooms or share a room with one person. While the number of check-ins and amount of surveillance is maintained, the sense of security has improved, leading the DESC centers to be at capacity most nights. This transition from congregate to non-congregate marks an important transition in Seattle's approach to homelessness. Concerns over security and privacy might be abated by the option to stay in a single-person room.

The rigidity of the operational structure and policy enforcement in Seattle often discourages Tent City 3 members from utilizing programs and services meant for PEH. Correspondingly, operator participants also reported that they felt like they were more successful at their jobs when they were more lenient in their management style.

*"So, in a weird way it's a bigger hassle to go to a warming center or to a cooling shelter. Even though you know, you know you're suffering more here, it's almost easier just to hang out here and suffer to be honest."*

Tent City 3 Participant

*"Which I think the big picture answer is ignore rules for a little bit. Like ignore, like, you know, the referral system and all that stuff kind of goes out the window, and you just want to get people inside"*

Operator Participant

The urgency to “get people inside” during extreme weather events motivates operators to bend sobriety and other typical registration activities. One participant noted how the Capitol Hill Library was one of the only public places in Seattle that had restrooms open during the first year of the pandemic. Without the initial rule-bending from librarians of allowing people inside to use the restroom, insecurely housed individuals in the Capitol Hill area would have to travel far to access bathroom facilities. During extreme weather events, the Seattle Public Library system pools resources toward centralized libraries near downtown, like the Capitol Hill Library. Acknowledging that this area has the highest concentration of PEH, along with relatively more transportation options, employees from other libraries are directed to come to work the Capitol Hill Library during staffing shortages brought on during inclement weather events.

*“You know, we have like, like half the people are visiting staff. And the other half are like not in lead positions, like it's really hard to manage a branch like Capitol Hill in the ways that we want to be able to manage the environment, right, like not just kicking people out but actually like helping folks.”*

Library employees, who are familiar with PEH in library facilities, are more suited to when someone needs mental health or physical health support as opposed to “visiting staff.” The compassionate ability of the staff to allow someone to nap for a few minutes, or use a closed bathroom, makes the Capitol Hill Library a viable location for a concentration of homelessness services and outreach. Tent City 3 participants noted how compassionate responses from shelter operators encouraged them to seek shelter during extreme weather events.

*“The reason I say they're nice is because they went above what they needed to do. They allowed us to stay in their place, you know? The questions are nothing. They're very nice. They're like,*

*one guy gave me a ride back, with all my stuff and the next day, he said, pack less stuff. \*laughs\* And then I go right back to like, then tents. Just like that. Brought my dog and clothes. That's the one time I've been in one.*

Shelters that have anti-pet policies often discourage PEH from seeking shelter resources. For multiple Tent City 3 participants, the decision to leave a tent and go to a shelter was driven by the knowledge that freezing nighttime temperatures would make it hard to sleep in a tent. Operators know that this is the justification for that decision-making and will often undergo operational changes like allowing pets in to encourage PEH. Tense shelter spaces often discourage PEH from going to facilities. Stuffy and crowded conditions in indoor shelters can be demoralizing, creating a high-stress situation. Balancing the concern of not wanting to be in stressful situations, and the priority of protection from cold/heat were driving factors in decision-making. For people experiencing homelessness in Seattle, accessing resources and services is habitually a test of the city's capacity to demonstrate flexibility. Many shelters' workforces experienced high worker turnover rates, which affected the capability of shelter operators to serve their clientele. The ability to de-escalate tense situations, like fights, is learned through experience.

*"They don't have the experience of working in an environment that a needs to have flexible rules and live in gray areas and be where they're experiencing so much verbal abuse and harassment.... And so, there can be more conflicts more like rule setting staff like you know, trying to enforce rules that really don't need to be it doesn't need to turn into an argument. It's just like you need to take like six months to a year to learn how to not have an argument and learn how to be wrong and let yourself lose. That's really how you build rapport and just accept, yes, I understand you, you I'm sorry, we're wrong...you can get staff that come in and immediately get stressed out and me creates an environment that's less therapeutic.*

Tent City 3 and operator participants both viewed the strict application of rules as a discouraging reason to not go to shelters. In anticipation of increasing extreme weather, the ability of shelter

resources to adapt to the individual needs of PEH will be an influence on the decision-making. Throughout the Covid-19 pandemic, the unstable availability of medical and financial support resources. The sense of community fostered in sanctioned encampments, like Tent City 3, creates an environment of mutual support and understanding. The internal capacity of the Tent City 3 community to pool resources was fundamental to the survival of the encampment. In the same way, Seattle shelters experienced staffing and service shortages, Tent City 3 strengthened their community efforts to supplement the necessities that they were missing. Resources like housing and career services are available at shelters, but not at Tent City 3. There are evident gaps in in both situations, suggesting that optimizing relationships between informal housing options and shelter systems could help fortify community and resource accessibility.

## 8. Recommendations

### A. **Advocate for sanctioned encampments and end the sweep of unsanctioned encampments**

Tent Cities 3,4,5 are sites of community resilience for unsheltered PEH in Seattle. The visibility of homelessness in Seattle discourages the advocacy for sanctioned encampments, even though they are the cost-effective, temporary way of addressing unaffordable housing. A criticism of sanctioned encampments is the belief that they are the epicenter of crime and substance abuse. However, all sanctioned encampments in Seattle are high-barrier settings where substance abuse is banned, and supportive community roles are enforced. Dehumanizing narratives about PEH ultimately deny vulnerable people from receiving life-saving support like shelter. There are many reasons why an individual may experience homelessness, but none of those reasons usurps their human rights to dignity and compassion. Long-term solutions to homelessness should remain in focus, but provisional informal support networks like sanctioned encampments should be respected.

The sweep of unsanctioned encampments is a public health crisis. The disruption of encampments destabilizes extremely vulnerable people, pushing them further and further away from essential resources. If the argument is to be made that unsanctioned encampments lack public health surveillance, then the proper tools and services should be provided to communities. Encampments are given 72-hour notices to vacate premises in Seattle (FAS 17-01, 6.2). However, this rule is often not respected, and sweeps occur

much sooner than expected (Junejo et al., 2016). During extreme weather events, actions like sweeps can be life-threatening.

**B. Support homelessness services and programs by promoting an experienced, compassionate workforce**

A strong human connection is fundamental to clientele-operator relationships. Most non-managerial Seattle shelter workers cannot afford to live in the city, because they are not paid enough to afford rent. A lack of adequate wages, coupled with a stressful work environment, creates a high staffing turnover rate for shelters. Deficient, inexperienced staffing contributes to an underserved community. Minimal staffing, which has persisted throughout most of the Covid-19 pandemic, prevents many important operations from occurring at shelters. Instead of helping residents do laundry or look for jobs, staff must focus on registering and attending to immediate needs. Coupled with a lack of medical services available in downtown Seattle to PEH, staff also serve as a frontline to mental and physical health problems. Experienced staff also know the right time to compromise, as opposed to unseasoned staff. Simple acts, such as letting people smoke on shelter grounds or allowing personal pets in during inclement weather, encourage clientele to seek out shelter. Acquiring insight on how to motivate people to come inside during extreme weather is dependent on how patient and understanding an operator is. The combined stress of fulfilling all of these roles puts immeasurable pressure on the shelter system to adapt to increasing obligations.

### **C. Prioritize affordable housing options**

Quantifying the number of people experiencing unsheltered homelessness is unfeasible, indicating the actual total of PEH in the US to be higher than estimated. While people who are experiencing homelessness are visibly facing housing insecurity, everyone in Seattle is enduring an affordable housing crisis. Sufficient housing options are the only permanent solution. The prevalence of homelessness is furthered by social inequities, in turn worsening health disparities experienced by individuals who are housing insecure (Anderson et al., 2021). In Seattle, historically undeveloped, redlined communities are being gentrified (Fears, 2022). An increased risk of housing insecurity is putting these communities at a disparate risk for negative health outcomes.

## 9. Study Limitations

This research has limitations in the ability to communicate the perspective of PEH. Only PEH who live in tents were interviewed, leaving out the important perspective of people who choose to live in shelters. Without this separate viewpoint, there is limited representative power of expressing the reason why people choose to stay in shelters. Shelters, rightly so, were very protective of their clientele and discouraged interviewing of current residents. Lacking this opinion potentially skews the priorities in decision-making.

Another limitation this study has is the limited scope of the area it represents. Since most homelessness resources are concentrated in the downtown Seattle area, we chose not to interview people living outside of this area. The perspective of unsheltered PEH, who make the decision to not live in the surrounding downtown area, limits the comprehensiveness of accessibility and availability concerns. The nuances of not living in an area where resources and services are concentrated could potentially understate the prominent issues related to challenges faced by PEH.

Finally, because all Tent City 3 interviews occurred on March 1<sup>st</sup>, 2023, there is a potential that certain community members' voices are left out. Participants that were present from 2 pm- 6 pm on this day, when the daytime low temperature was 28 degrees Fahrenheit, made the decision to not go to a daytime shelter (See Appendix I). The perspective of people who made the decision to go to a daytime shelter during freezing temperatures on that is not covered, which limits the relativity towards the accurate proportion of people at Tent City 3 who go to shelters.

Additionally, people who work during the day were also left out of participant recruitment.

## 10. Conclusion

The combined burden of handling the Covid-19 pandemic, and responding to extreme weather, has thrown Seattle's shelter system in repetitive upheaval for the past few years. The threat of climate change makes improving affordable housing options more urgent than ever, as the threat of floods, storms, wildfires, and heatwaves continues to intensify. The precarious health of PEH increasingly becomes more environmentally and medically vulnerable, as their exposure to unmitigated exposure to weather escalates. In this research, we explored how PEH in Seattle is adapting to extreme weather. The results from this study demonstrated that there are many gaps in resources available to PEH. Additionally, the findings from this work revealed how necessary a reevaluation of how Seattle approaches the issue of homelessness is in regard to shelter policies and city laws

Recommendations from this study promote efforts for increased societal intervention on the issue of homelessness. The Covid-19 pandemic revealed how fragile social and medical services are. The presence of three sustainable sanctioned encampments in Seattle is an opportunity to re-examine how a temporary housing solution can disburden a strained shelter system. We can learn from these informal support networks and augment the existing communities. Ultimately, the findings of this research are tools for advocacy for unsheltered PEH in Seattle. Strong interpersonal relationships, well-developed community ties, and preserved autonomy help protect unsheltered PEH from the immeasurable environmental exposures that they endure

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MD

# Appendices

## Appendix I- Tent City 3 Interview Day Weather

Weather Report for the week of March 1st, 2023

### Updated Snow Forecast

**Summary**  
Another round of precipitation will spread across the region Monday night through Tuesday. Snow levels will linger between 0-500 feet. Accumulations will be highly dependent on temperature and elevation. Near sea-level, expect accumulations primarily be on grassy and elevated surfaces, however road accumulations will be possible in heavier showers.

**Impacts**  
The heaviest precipitation is expected between 6-10 AM which could impact the Tuesday morning commute.

**Plan Now**  
Plan for hazardous travel conditions and prepare alternate plans. If traveling in winter conditions, slow down and leave extra following distance.

NATIONAL WEATHER SERVICE | Seattle, WA  
Issued 2:05 PM February 27, 2023

### Estimated Snowfall

**WINTER WEATHER POSSIBLE**  
Tonight through Tuesday

30 Hour Snowfall Forecast  
Mon 4:00PM - Tue 10:00PM PST

Area with the potential for a Puget Sound Convergence Zone leading to quick additional accumulations.

Weather Forecast Office  
Seattle, WA  
Issued Feb 27, 2023 9:48 AM PST

weather.gov/sew

## Lowland Snow

Expected for Western Washington

**Lowland snow possible Monday night through Tuesday** across western Washington for potentially **challenging travel conditions**. The heaviest snow is expected Tuesday morning.

**Have Travel Plans...**

Check forecast and travel conditions before departing.

Visit WSDOT app or [wsdot.com/Travel/Real-time/Map/](https://wsdot.com/Travel/Real-time/Map/) for the most up to date road information

**Winter Driving Tips...**

Leave extra distance between you and the people in front of you

**SLOW DOWN** Slow down and allow extra time for your destination

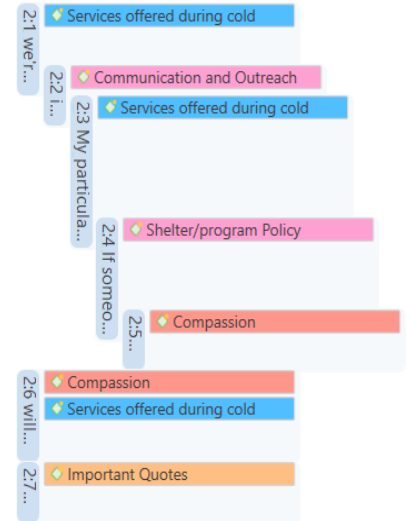
weather.gov  
 National Weather Service • Seattle, Spokane,  
 Pendleton, Portland  
 Updated Mon Feb 27, 2023 3 PM

US Department of Commerce,(2023). Seattle/Tacoma, WA. NOAA’s National Weather Service., from <https://www.weather.gov/sew>

## Appendix II- Coding

### Demonstration of qualitative coding in Atlas.ti

Yeah, um, this this, this winter was particularly scary because there were multiple events that sort of snuck up on us. And I think that the city wide response pivoted pretty fast, but we're more prepared to open up these severe weather shelters when we're expecting it to get colds and so having that extends into February. I don't think that the responses would really fast and it's hard to get that information out to clients. Like, you know, people that are sleeping on the street and stuff like that. My particular experience is that, you know, we hunker down, we make sure that we have supplies that we need from our donations for like winter coats. And, you know, appropriate, just appropriate clothing. What we do at our shelter is we offer that if any of our case management teams or like internal teams have people that are outside, we like offer the common area and cots in the common area. If someone wants to, if they need their clients to get off the street now, no one really took us up on that this time, but it's like an option in an emergency for a specific person, but it's not something that we can really advertise. One particular thing we focus on is helping clients that are particularly vulnerable. Like guiding them in safe practices. So like before they leave in a T shirt, and light pants will be like, hey, come back in for a second and you know this real fast while I get you a coat, and sometimes we'll go through a two three coats a week. Go today, but like, you know, managing that's a very small percentage of our clients. But those are the folks that we were scared about the most folks that are just experiencing too many mental health symptoms to be able to dress appropriately.



## Appendix III- Interview Guides

### PEH Guide

**Climate change affects Seattle by affecting the way the atmosphere holds moisture. As average temperatures rise annually, flash flooding and snowstorms become more intense. In the summer, the occurrence of wildfire and heat wave events also increases.**

#### **Important Definitions:**

- **Extreme Heat** from UW Emergency Management: “Temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks are defined as extreme heat. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a “dome” of high atmospheric pressure traps hazy, damp air near the ground. Excessively dry and hot conditions can provoke dust storms and low visibility. Droughts occur when a long period passes without substantial rainfall. A heat wave combined with a drought is a very dangerous situation.”
- **Extreme Cold** from Seattle City Government: “Excessive cold especially when accompanied by wind can cause frostbite and hypothermia. Wind chill is the temperature it “feels like” outside and is based on the rate of heat loss from exposed skin caused by the effects of wind and cold. As the wind increases, the body is cooled at a faster rate, causing the skin temperature to drop. Frostbite is an injury to the body caused by freezing body tissue. The most susceptible parts of the body are the extremities, especially fingers, toes, ear lobes, or the tip of the nose. Hypothermia is an abnormally low body temperature, below 95 degrees Fahrenheit. Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion.”
- **Congregate Shelter** from the HUD Office of Policy Development and Research: “An emergency shelter where the residents share a common sleeping area.”

· **Emergency Shelter** from HUD Office of Policy Development and Research: “A facility with the primary purpose of providing temporary shelter for homeless people.”

· **Accessible Design** from UW DO-IT: “Accessible design is a design process in which the needs of people with disabilities are specifically considered. Accessibility sometimes refers to the characteristic that products, services, and facilities can be independently used by people with a variety of disabilities.”

**The purpose of this interview is to ask questions about the flexibility of established shelters to act as emergency weather shelters, communication, accessibility, community outreach concerns, staffing concerns, the effects of rain, snow, wildfires, heat, and other climatic events on health, accessibility, availability, means of transportation during weather events, covid impacts, and overcrowding.**

1.1 How long have you lived at Tent City 3?

1.2 How long have you lived in Washington?

1.3 How often do you use congregate (established) shelters?

1.4 How often do you use emergency shelters?

1.5 During this current snowstorm, did you decide to go to a shelter or stay in your tent shelter?

2.1 When it’s extremely cold outside, or there is a storm (precipitation event), do you go to shelters or prefer to stay outside/in your tent?

2.2 From your perspective, do you feel like your tent prevents you from exposure to cold?

2.3 Do you seek shelter in congregate/established or emergency shelters when it’s extremely cold?

2.4 When it’s extremely hot outside or if there is wildfire smoke, do you go to shelters or prefer to stay outside?

2.5 From your perspective, do you feel like your tent prevents you from the heat?

2.6 Do you seek shelter in congregate/established or emergency shelters when it’s extremely hot?

- 3.1 How do you find out shelters that are open?
- 3.2 How do shelters communicate to people that they are full (at capacity)?
- 3.3 How do you find out about shelter transportation options and other shelter services? or areas for improvement?
- 3.4 What type of services do you get from a shelter? (i.e. laundry, showers, social services job services)

Heat-related illnesses include negative health effects associated with exposure to wildfire smoke (or associated air pollution), dehydration, overheating, and overall, a lack of protection/shelter from the elements

- 4.1 Have you ever experienced a heat-related illness while experiencing homelessness?
- 4.2 How do shelter staff typically assist someone experiencing a heat-related illness?
- 4.3 Do you want to share your thoughts on your experience during the last heat event?
- 4.4 What motivated your decision to stay in your tent or go to a shelter during this last heat event?
- 4.5 From your perspective, how has Covid affected your ability to get services at Tent City 3?
- 4.6 How has Covid affected your ability to get services at other shelters?

- 5.1 How has the Covid-19 pandemic affected the quality of services provided at shelters?
- 5.2 In general, do you feel supported by the staff members at shelters?

Cold-related illnesses include negative health effects associated with exposure to freezing temperatures, lack of heating, increased infectious disease spread, and overall, a lack of protection/shelter from the elements.

- 6.1 Have you ever experienced a cold-related illness while experiencing homelessness?
- 6.2 How do shelter staff typically assist someone experiencing a cold-related illness?

- 7.1 For people with disabilities, do you feel like shelters are accessible?
- 7.2 For people with disabilities, do you feel like the accessibility of a tent city compares to that of a shelter?

8.1 Are there any gaps in resources at the tent city that you'd like to discuss?

8.2 Do you have any final thoughts on what we discussed, or is there anything else we have not discussed that you would like for us to know about?

## Operator Guide

### **Definitions:**

- Extreme Heat from UW Emergency Management: “Temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks are defined as extreme heat. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a “dome” of high atmospheric pressure traps hazy, damp air near the ground. Excessively dry and hot conditions can provoke dust storms and low visibility. Droughts occur when a long period passes without substantial rainfall. A heat wave combined with a drought is a very dangerous situation.”
- Extreme Cold from Seattle City Government: “Excessive cold especially when accompanied by wind can cause frostbite and hypothermia. Wind chill is the temperature it “feels like” outside and is based on the rate of heat loss from exposed skin caused by the effects of wind and cold. As the wind increases, the body is cooled at a faster rate, causing the skin temperature to drop. Frostbite is an injury to the body caused by freezing body tissue. The most susceptible parts of the body are the extremities, especially fingers, toes, ear lobes or the tip of the nose. Hypothermia is an abnormally low body temperature, below 95 degrees Fahrenheit. Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion.”

### **Community resiliency in the built environment: The effect of climate change on Seattle’s emergency weather shelters**

Draft 1.3

### **Introduction**

Thank you for agreeing to participate in an interview with UW researchers about Seattle shelters and homeless services. This interview should take about 30 minutes to complete. If you don’t mind, we’ll record this interview so that we can make sure we capture all the information you have to share. We’ll keep your responses anonymous, so none of your responses will be linked to you personally. We’ll delete the recording after we’ve transcribed the interview.

Shall we begin?

### **Interviewee information**

1. Please tell us about yourself – for example:
  - 1.1. What shelter(s) do you work for?
  - 1.2. What is your role in this organization?
  - 1.3. How long have you worked in homeless shelter and services?

## **Established Shelters**

2. In your experience, how do you feel like extreme cold/extreme heat affects the services you provide at your shelters?
  - 2.1. How does the number of people needing services to fluctuate during extreme cold/extreme heat events?

## **Emergency Weather Shelters**

3. During extreme cold/heat events, what are the staffing/resourcing priorities when opening emergency weather shelters?
  - 3.1. How, if at all, do shelter services change during freeze events?

## **Community Outreach**

4. What challenges does your organization face regarding communication/increasing awareness of shelter resources?
  - 4.1. From your perspective, are there ineffective methods of outreach?
  - 4.2. What are effective methods of outreach? or areas for improvement?

## **Cold-related illness**

Cold-related illnesses include negative health effects associated with exposure to freezing temperatures, lack of heating, increased infectious disease spread, and overall, a lack of protection/shelter from the elements.

5. What does resources your shelter have to protect people from cold-related illnesses?
  - 5.1. Has the Covid-19 pandemic affected your shelter's ability to disperse resources during the winter?

## **Heat-related illness**

Heat-related illnesses include negative health effects associated with exposure to wildfire smoke (or associated air pollution), dehydration, overheating, and overall, a lack of protection/shelter from the elements.

6. What resources does your shelter have to protect people from heat-related illnesses?
  - 6.1. Has the Covid-19 pandemic affected your shelter's ability to disperse resources during the summer?

## **Communication and Accessibility**

7. In your opinion, are resources available during extreme heat events, extreme cold, and wildfire episodes accessible equitability equally across Seattle?

### **Staffing**

8. Acknowledging the pandemic, do you feel supported by the shelter management systems during extreme weather events?
  - 8.1. How does your shelter's capacity to provide services change during influxes of staffing shortages?
  - 8.2. How does worker turnover/ volunteering base affect the quality of services your shelter is able to provide?

### **Gaps in Resources**

9. Are there any gaps in resources that affect your ability to do your job that you would like to share with us?

### **Most Recent Heat Event**

10. Do you want to share your thoughts on how well your shelter did in the last heat event?

### **Most Recent Cold Event**

11. Do you want to share your thoughts on how well your shelter did in the last cold front?

### **Final Thoughts**

Those are all the questions we have for you. But before we end this interview...

12. Do you have any final thoughts on what we discussed, or is there anything else we still need to discuss that you would like for us to know about?

### **Thanks**

Thank you very much for sharing your thoughts, and for making time for this interview.

## Appendix IV- CORE EQ Checklist

Item	Guide questions/description	Included in Analysis Plan
Domain 1: Research team and reflexivity		
1. Interviewer/facilitator	Which author/s conducted the interviews or FGDs?	Data Analysis Results-Population
2. Credentials	What were/are the researcher's credentials?	Study Design and Methods Research Team
3. Occupation	What was their occupation at the time of the study?	Study Design and Methods Research Team
4. Gender	Was the researcher male or female?	Study Design and Methods Research Team
5. Experience and training	What experience or training did the researcher have?	Study Overview ERC/IRB approval

Item	Guide questions/description	Included in Analysis Plan
6. Relationship with participants established	Was a relationship with participants established prior to study commencement?	Data Collection Data Sources and Collection Processes
7. Participant knowledge of the interviewer	What did the participants know about the researcher?	Study Design Participant Recruitment
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator?	Data Analysis Participant Demographics
Domain 2: study design		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study?	Framework Model Theory
10. Sampling	How were participants or articles selected?	Study Design and Methods Study Population Overview

<b>Item</b>	<b>Guide questions/description</b>	<b>Included in Analysis Plan</b>
11. Method of approach	How were participants approached?	Study Design and Methods  Data Sources and Collection Processes
12. Sample size	How many participants or articles were in the study?	Study Design and Methods  Study Population Overview
13. Non--participation	How many people refused to participate or dropped out, or articles were excluded during review? For what reasons?	N/A
14. Setting of data collection	Where was the data collected or what regions of articles are represented?	Study Design and Methods  Data Logistics and Storage
15. Presence of non-- participants	Was anyone else present besides the participants and researchers?	Data Analysis  Table 3: Data Overview
16. Description of sample	What are the important characteristics of the sample?	Study Design  Study Population Overview

<b>Item</b>	<b>Guide questions/description</b>	<b>Included in Analysis Plan</b>
17. Interview guide or alternative data collection tool	Were examples from questions, prompts, guides provided by the authors?	Data Collection  Table 1: Examples questions from operator and PEH interview guides
18. Repeat interviews	Were repeat interviews carried out, or were multiple articles from the same study reviewed?	N/A
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Data Collection  Data Logistics and Storage
20. Field notes	Were field notes made during and/or after the interview/FGD or article review?	Data Analysis  Coding Description Overview
21. Duration/Length	What was the duration of the interviews/FGDs or length of the articles?	Data Analysis  Table 3: Data Overview
22. Data saturation	Was data saturation discussed?	N/A

Item	Guide questions/description	Included in Analysis Plan
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	N/A
Domain 3: analysis and findings		
24. Number of data coders	How many coders helped code the data?	Data Analysis Coding Description Overview
25. Description of the coding tree	Did authors provide a description of the coding tree (ie: codebook)?	Data Analysis Coding Description Overview
26. Derivation of themes	Were codes/categories identified in advance (deductive) or derived from the data (inductive)?	Data Analysis  Late-stage analysis/interpretation:
27. Software	What software, if applicable, was used to manage the data?	Data Analysis  Late-stage analysis/interpretation

<b>Item</b>	<b>Guide questions/description</b>	<b>Included in Analysis Plan</b>
28. Participant checking	Did, or will, participants or article authors provide feedback on the findings/results?	Study Overview Project Goal and Aims
29. Quotations presented	Were participant quotations or article text presented to illustrate the themes/findings/results? Was each quotation identified?	Data Analysis Results-Thematic Description
30. Data and findings consistent	Was there consistency between the data presented and the identified themes?	Data Analysis Late-stage analysis/interpretation
31. Clarity of major themes	Were major themes clearly presented in the findings?	Data Analysis Results-Thematic Description
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Discussion