EVALUATION REPORT

Quantitative Evaluation of the Peer2Peer Project and the ROSE Model

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We respectfully acknowledge that we live and work on the unceded traditional territory of the Coast Salish Peoples, including the traditional territories of xʷməθkwəy̓əm (Musqueam), Sḵwx̱w̱ u7mesh (Squamish), Səli lwətaɬ (Tsleil-Waututh), WSÁNEĆ (Saanich), Lkwungen (Songhees), Wyomilth (Esquimalt) peoples.

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Glossary

BC	British Columbia
COVID-19	Coronavirus disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
OPS	Overdose Prevention Services –operate under a Ministerial Order from the BC Minister of Health
ProQOL	Professional Quality of Life Scale
ROSE Model	R: Recognition of Peer Work, O: Organizational Support, S: Skill Development and E: for Everyone
SCS	Supervised Consumption Sites –operate under the 56.1 federal exemption of the Controlled Drugs and Substances Act and usually overseen by Health Authorities
SF-12	Short Form – 12 Health survey

Background

There has been a stark increase in illicit drug toxicity deaths in recent years across Europe and North America (1–7). On April 14, 2016, British Columbia's (BC) provincial health officer declared a public health emergency in response to this devastating increase in overdose deaths, which is still in effect today (8). On March 17, 2020, a second public health emergency related to the pandemic of the coronavirus disease (COVID-19) was declared (9). Drug toxicity deaths have risen since the implementation of public health measures including physical distancing and an increase in drug toxicity (7). In January 2021, 185 drug toxicity deaths were reported, the highest ever recorded in a month in BC (7).

Peer workers, those with past or present drug use experience who use that lived/living experience to inform their professional work, are at the forefront of overdose response initiatives in BC (10–12). They are involved in a variety of roles, including peer witnessing at overdose prevention services (OPS) and supervised consumption sites (SCS), outreach services, mobile overdose response, delivery and collection of harm reduction supplies, advocacy, and referrals to services such as housing agencies (13). Peer workers are also important in facilitating access to and uptake of harm reduction practices, which are directly tied to saving lives (14). The advent of COVID-19 led to reduced hours and closure of several OPS and SCS and attendance at these observed consumption sites declined from 68,720 visits in January 2020 to 32,531 in March 2020 (15–18). This has further increased the importance of peer workers.

Working in overdose response settings can be traumatizing, with lasting social, emotional, and mental health effects (11,19–23). Exposure to ongoing loss and trauma may be particularly stressful, as the individuals they support are often close friends or people they consider family (24). Peer workers not only *work* in a stressful environment, but often *live* the same reality (25–27). Furthermore, unlike other first responders such as nurses and paramedics, peer workers often lack access to supports and counselling through their organizations (28,29). In the long run, this may lead to burnout and affect peers' physical and mental health

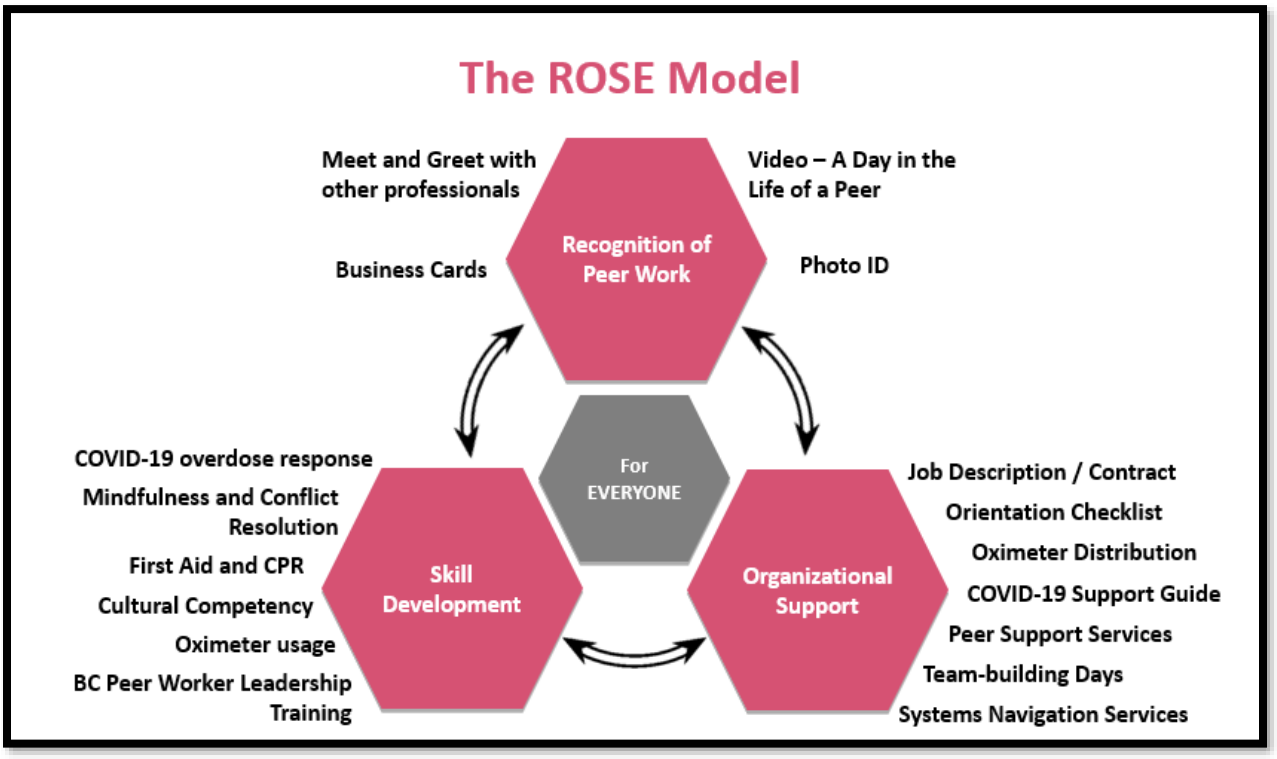
The Peer2Peer Project aims to identify, develop, implement, and evaluate models and strategies to support peers working in BC overdose response environments (30).

Three key supports areas were identified by peer workers and this formed the basis of the intervention model that was developed, titled 'ROSE'; R: Recognition of Peer Work, O: Organizational Support, S: Skill Development and E: for Everyone. The objectives of the ROSE Model are to: 1) Increase awareness and recognition among individuals without lived/living experience about the crucial work done by peer workers in overdose response settings through the Recognition component of the intervention, 2) Facilitate equitable access to workplace resources for peer workers, enabling them to work optimally in a stressful work setting with reduced emotional, mental, and social stress through the Organizational Support component of the intervention, and 3) Provide training and education for peers to improve their skills and gain professional self-confidence through the Skill Development component of the intervention. Through these objectives, the ROSE Model aims to facilitate culture change within organizations, leading towards a more equitable and just workplace.

Each component of the ROSE Model consists of multiple strategies including videos to create awareness, tangible objects such as photo IDs and business cards to professionalize their roles, creation of job descriptions and contracts to formalize peer worker roles and add role clarity, external training opportunities for peer workers, as well as training materials and videos that peer workers can use to

refresh their knowledge (31). Figure 1 below indicates all the strategies that were implemented as part of the ROSE Model.

Figure 1. Strategies within the ROSE Model



This report aims to highlight pre- and post-ROSE implementation changes in workplace conditions and job satisfaction, and relationships and support networks which can potentially be attributed to the ROSE Model. Through proving the effectiveness of an intervention tailored specifically to the realities of peer workers, we hope to incentivize further programming to support peers in British Columbia and beyond.

Methods

Study Participants and Settings

The Peer2Peer project was piloted at two organizations located in four cities: 1) SOLID Outreach Society in Victoria, and 2) RainCity Housing in Vancouver and the Fraser region (Maple Ridge and Coquitlam). The study participants were peer workers at these sites who were recruited to participate in the survey by their organizational managers. Participation was voluntary and participants were given a $25 honorarium to thank participants for sharing their insights and acknowledge the time it took to complete the survey. The inclusion criteria for participation were: 1) working, formally or informally, in overdose response settings, 2) identifying as a peer worker, 3) being over the age of 18, and 4) being able to complete a survey in English.

Data Collection

The survey consisted of demographic questions, measures of peer workers' perceptions of health and quality of life, substance use patterns, and working conditions. The majority of the questions were from

validated tools such as the Short Form – 12 (SF-12) Health survey (32), the Canadian Community Health Survey (33), the Professional Quality of Life Scale (ProQOL) (34), and the Job Satisfaction Survey (35).

The survey was administered at two different times; the baseline survey was conducted in September 2019, before the ROSE Model was developed and implemented and the follow-up survey was administered between September 2020 and March 2021. The period for the follow-up survey was selected for two reasons: 1) September 2020 marked one year since the implementation of the ROSE Model, and 2) Informal discussions with peer workers at the pilot sites revealed a high amount of stress and burnout due to the increased number of overdose deaths since the onset of COVID-19 and an overall increased workload due to the pandemic. The follow-up survey consisted of repeat questions to assess pre/post changes in responses as well as additional questions to evaluate the ROSE Model and to assess the impact of COVID-19 on the peer workers.

The survey was administered to peer workers at the pilot sites by peer research assistants (PRAs). Prior to survey administration, informed consent was obtained from participants. The PRAs read out the questions and recorded the peer workers' responses. The survey data was entered into MS-Excel and later exported to R statistical software, version 4.0.5 (36) where data analysis progressed.

Data Analysis

All analysis was conducted using R, version 4.0.5 (36). For all analysis, the level of significance was set to 0.05, i.e., a p-value less than 0.05 was considered statistically significant.

For the pre- vs post- intervention analyses, the Likert scale responses were converted into numerical values (1-5). Non-parametric Mann-Whitney U tests (also known as Wilcoxon rank-sum tests) were used to measure differences between the baseline and follow-up surveys and assess statistical significance of differences using the full data. Non-parametric Wilcoxon signed-rank tests were used to measure if differences between the baseline and follow-up surveys were statistically significant using only the paired data.

Fisher's exact tests were conducted to measure the association between survey questions and the demographic factors of age (categorized as '40 and under', '41-50', or '51+'), gender identity ('Man', 'Woman', or 'Other'[1], or location ('Victoria', 'Vancouver', 'Maple Ridge', or 'Coquitlam').

The findings were shared with PRAs during the bi-weekly Peer2Peer Project meetings for interpretation and insights.

Ethics

The study received Research Ethics approval from the University of British Columbia Behavioural Research Ethics Board (REB #: H18-00867) and harmonized approval from University of Victoria and Island Health.

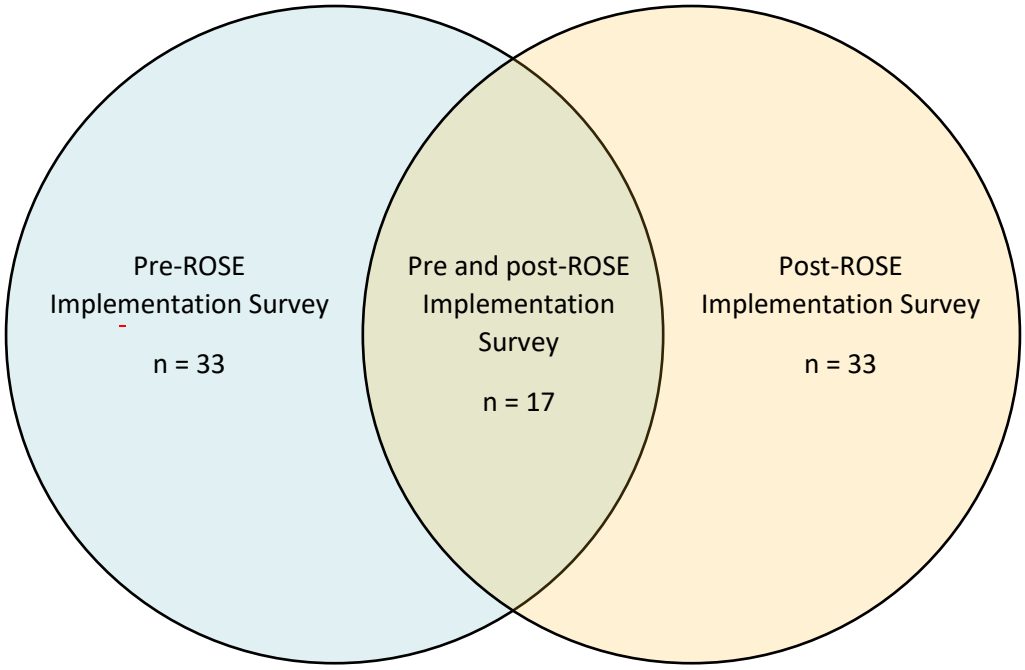
[1] To be inclusive of different genders and allow for participants to list what they identify as, our survey provided the following options: Man, Woman, Trans Man, Trans Woman, Gender non-conforming and Other, with a blank for individuals to fill in their other gender. No individuals selected Trans Man or Trans Woman; one participant picked "Other" but did not specify.

Results and Discussion

Demographics

Table 1 summarizes the demographic profile of the participants for the baseline as well as the follow-up survey. In total, 50 participants took the baseline survey and 50 took the follow-up survey (Figure 2). Of those, 17 participants took both the baseline and follow-up surveys and so have paired pre- and post-intervention data. The remaining 33 participants on each survey were unique to either the baseline or follow-up survey – they did not take both.

Figure 2. Sample size of baseline pre-ROSE implementation survey and follow-up post-ROSE implementation survey



In general, the demographic profiles of the baseline and follow-up surveys were similar. The majority of participants on both surveys were male (54%) and did not identify as indigenous (68% in baseline, 72% in follow-up). Participants' mean age was similar across the surveys (43.3 years in baseline, 43.9 years in follow-up). The highest percentage of participants was from Victoria (34% in baseline, 46% in follow-up). The Peer Witness program in Coquitlam was dissolved prior to September 2020 hence there was no participation from Coquitlam during the follow up survey.

Table 1. Demographic profile of participants for the baseline and follow-up surveys

	Total N (column %) N = 83	Baseline Only N (column %) N = 33	Paired Participants (Baseline & Follow-up) N (column %) N = 17	Follow-up Only N (column %) N = 33
Gender				
Man	44 (53%)	17 (52%)	10 (59%)	17 (52%)
Woman	36 (43%)	15 (45%)	7 (41%)	14 (42%)
Other	1 (1%)	1 (3.0%)		0 (0%)
Unknown	2 (2%)	0 (0%)		2 (6.1%)
Age*				
40 and under	33 (40%)	12 (36%)	7 (41%)	14 (42%)
41-50	28 (34%)	14 (42%)	6 (35%)	8 (24%)
51+	19 (23%)	6 (18%)	3 (18%)	10 (30%)
Unknown	3 (4%)	1 (3.0%)	1 (5.9%)	1 (3.0%)
Ethnicity				
Reported Indigenous	23 (28%)	11 (33%)	5 (29%)	7 (21%)
Not Reported Indigenous	58 (70%)	22 (67%)	12 (71%)	24 (73%)
Unknown	2 (2%)	0 (0%)		2 (6.1%)
Location				
Vancouver	31 (37%)	13 (39%)	3 (18%)	15 (45%)
Victoria	32 (39%)	9 (27%)	8 (47%)	15 (45%)
Maple Ridge	10 (12%)	2 (6.1%)	6 (35%)	2 (6.1%)
Coquitlam	9 (11%)	9 (27%)		0 (0%)
Unknown	1 (1%)	0 (0%)		1 (3.0%)

*Where baseline and follow-up interviews were completed, age is at first interview

Evaluation of the ROSE Model

This section will explore the questions related to the awareness, perceived need, and perceived effectiveness of the strategies that make up the ROSE Model. These questions were only present in the follow-up survey.

Awareness of Strategies

Awareness of strategies was assessed using the question 'Has this [strategy] been implemented at your organization?'. All of the strategies indicated in Figure 3 were implemented at all the pilot sites, albeit at different times, so this first question was used to measure participants' awareness of the strategies. The strategy that participants were most aware of was photo IDs, with 90% aware and only 6% unaware. Awareness of oximeters provided by the Peer2Peer Project was second, with 82% of participants answering that they were aware. Third was formal job descriptions (78% aware) followed by pulse oximeter training and first aid/CPR training (tied at 74% aware).

As photo IDs and oximeters are both physical objects that were given to participants, it is unsurprising that most were aware of these strategies. However, business cards are also physical objects and only 54% of participants were aware of them. This discrepancy could be due to how these strategies were implemented. Business card templates were provided to the organizations but it was the responsibility of the organizations to print them for peer workers, using the organizations' own resources. It is possible that this was not fully implemented and/ or the resources required were not available, such as a printer. In contrast, the Peer2Peer Project team purchased a photo ID card printer and made sure that cards were printed for all the peer workers employed at each site during the time of implementation. Similarly, the pulse oximeters were purchased by the Peer2Peer Project team and couriered to each site. The additional support from the Peer2Peer Project team seems to have been helpful to ensure that the strategies were implemented as intended.

The oximeter training was offered in the form of a video and an information sheet which was handed out along with the oximeters. This linkage with the physical object is potentially why the oximeter training was remembered. As participants were likely consistently using the oximeters to respond to overdoses, the training may remain fresh in their minds. Furthermore, since the training video is posted online, it can be taken at any time and referred back to as needed, benefiting even the new hires. This suggests the effectiveness of online trainings which can be taken the participants' convenience and are more sustainable in the longer term.

First aid/CPR training is well-known and the name is easily recognizable, so it is likely that participants could easily identify it. This training was led by external trainers (St. Johns Ambulance) and participants who successfully completed the training received a certificate which was recognized by WorkSafe BC as Occupational First Aid Level 1 and engendered pride and achievement. However, 20% were not aware of this training. Although multiple sessions of the First Aid/CPR training were offered for each site, it is possible that not all peer workers were able to attend or were hired after the training sessions were offered and may have been unaware of the training. Opportunities to attend these training sessions should be made regularly available in order to ensure that new staff have the chance to attend.

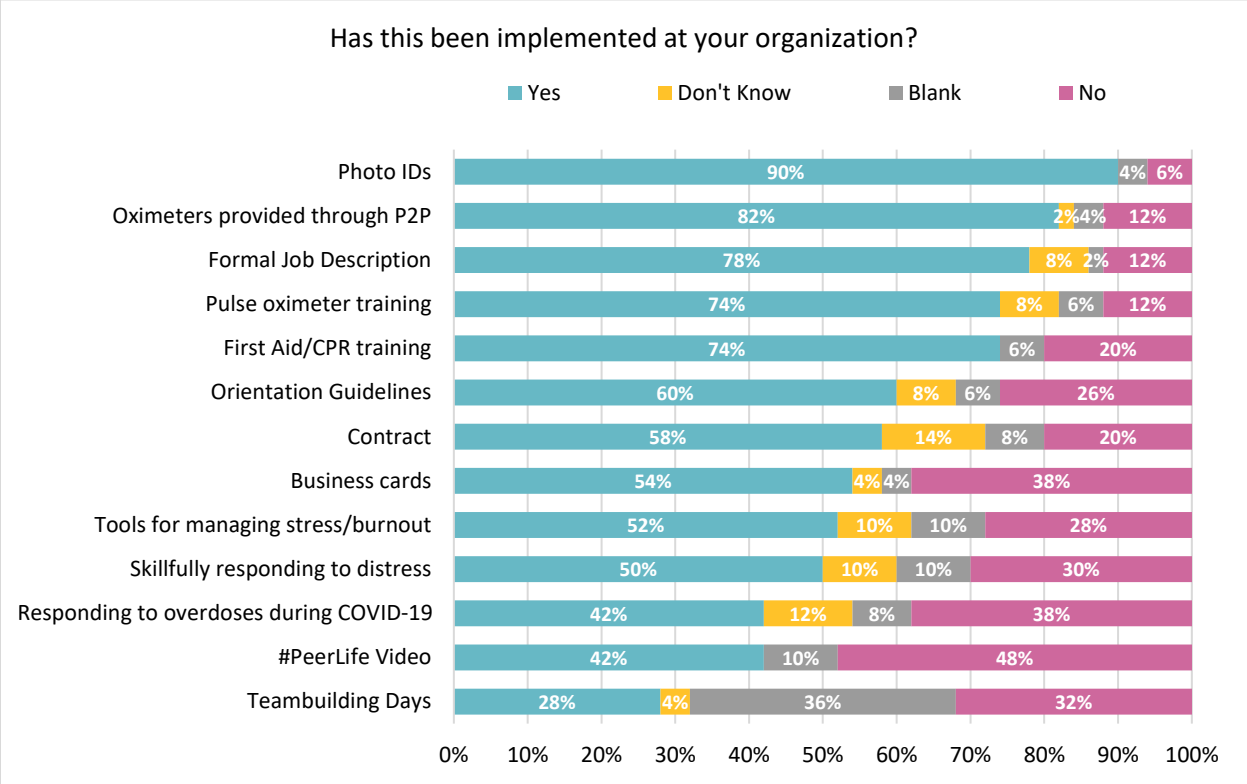
The five strategies that participants were least aware of were: teambuilding days (28% aware), the #PeerLife video (42% aware), the infographic and training videos about responding to overdoses during COVID-19 (42% aware), and the skillfully responding to distress and tools for managing stress/burnout trainings put on by the Crisis Centre (50% and 52% aware respectively).

Peer research assistants suggested that the low awareness of these strategies was likely partially caused by the names of these strategies as they appeared in the survey. Since the strategies were listed by title only (without a description), the lack of awareness could be of the titles, rather than of the actual strategies. If this survey is administered again, a description of each strategy should be added so that participants could recognize strategies based on content rather than title alone.

The #PeerLife video was a video documenting the day in a life of a peer worker that was posted online. The video was originally planned to be used in engagement activities with other professionals such as police, but due to COVID-19, these events did not happen. Prior to video creation, peer workers at all sites were invited to be featured in this video. However, only a few were interested and these were mainly the PRAs already a part of the Peer2Peer Project team. Once developed, the video was shared with organizational managers and viewings were organized at some sites. However, as this video was not a specific training or object, participants may have missed the viewing and/or were hired after these viewings. The low access to technology and low computer literacy among peer workers may have also been barriers.

A large number of participants left the 'teambuilding days' question blank. This is most likely due to the layout of the survey. The 'teambuilding days' question was at the top of a new page immediately followed by a section header and so may have been overlooked. Additionally, although the first teambuilding day was conducted at all sites (Holiday party), the second teambuilding day was not held due to COVID-19 gathering restrictions. Other potentially morale-boosting strategies were implemented instead, such as handing out thank you cards and gift cards to peer workers, but (understandably) participants may not have associated this with teambuilding.

Figure 3. Distribution of responses for the question 'Has this been implemented at your organization?'



Differences by Demographic Characteristics

There were no significant differences in awareness of strategies based on age (categorized as '40 and under', '41-50', or '51+') or gender identity ('Man' or 'Woman'). There were significant differences in awareness of some strategies based on location (Appendix A). Participants in Vancouver were significantly less aware of certain strategies, including business cards, the #PeerLife video, teambuilding days, first aid/CPR training, tools for managing stress/burnout, skillfully responding to distress, and responding to overdoses during COVID-19. PRAs suggested that this was probably because of the high number of new staff in Vancouver who may not yet be aware of strategies or may have joined after certain strategies were offered.

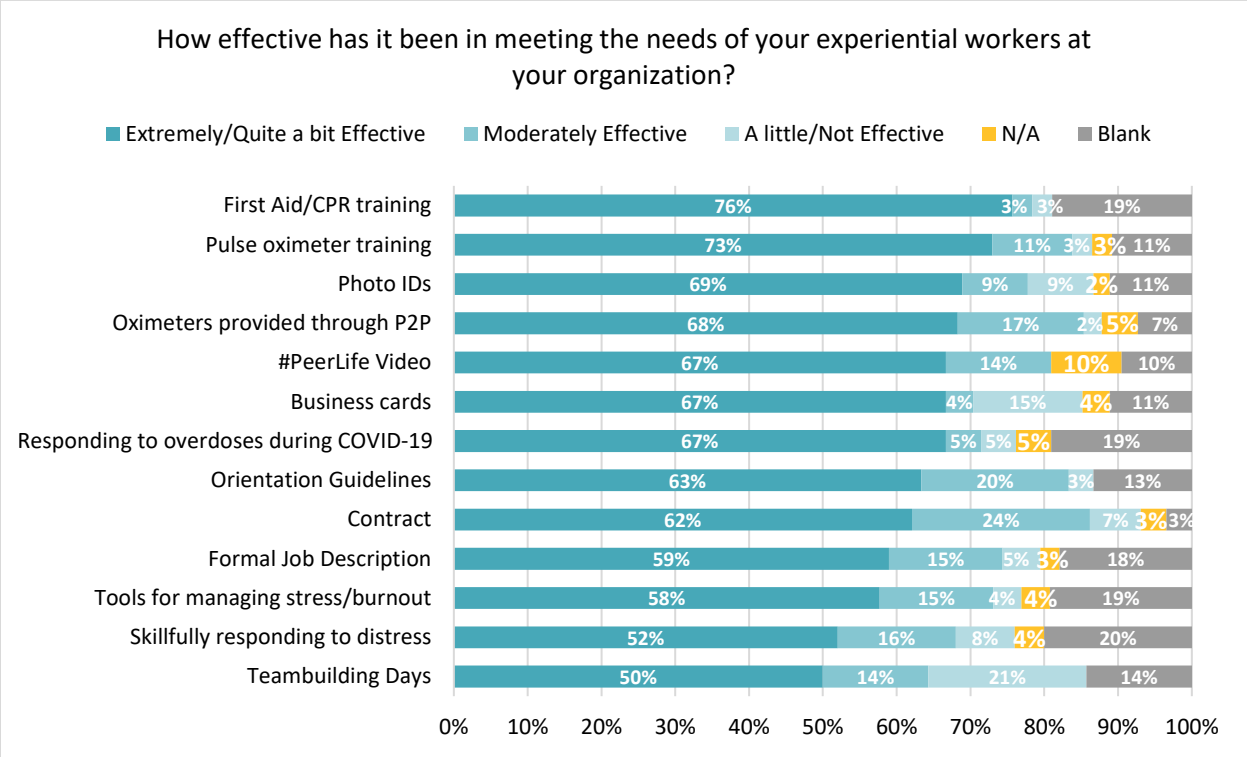
Effectiveness of Strategies

The third question measured the effectiveness of each strategy. The answers to this question have been restricted to only participants who said that they were aware of the strategy (responded 'Yes' to the question 'Has this been implemented at your organization?'). As only the participants who responded 'Yes' to the awareness question were included, the sample sizes for each strategy are different (See Appendix B).

As seen in Figure 4, the two strategies that the most participants said were 'extremely' or 'quite a bit' effective were first aid/CPR training (76%) and pulse oximeter training (73%). These are both very specific trainings that likely improve participants' ability and confidence to respond to overdoses. The next two strategies that participants found the most effective were photo IDs (69%), and oximeters provided by the Peer2Peer Project (68%). These are both objects that can improve the recognition and legitimacy of the peer worker role. A 2020 evaluation of the pulse oximeter program found that they not only improved

peer workers' confidence and objectivity when responding to overdoses, but also enhanced communication and collaboration with first responders such as paramedics (37). There have been increasing reports in BC of substances containing mixtures of opioids and benzodiazepines and the identification of unregulated etizolam in urine drug screens, causing people to remain unconscious even after naloxone was administered and breathing was restored (38–40). Pulse oximeters have been useful in assessing, from a safe distance, when oxygen levels are within normal range, and rescue breaths are not needed, which is of particular importance since the onset of COVID-19 (37,41).

Figure 4. Distribution of responses for the question 'How effective has it been in meeting the needs of your experiential workers at your organization?' among participants who responded 'Yes' to the question 'Has this been implemented at your organization?'



Differences by Demographic Characteristics

For the Fisher's Exact test, effectiveness was dichotomized as 'Effective' (responding that the strategy was 'Extremely', 'Quite a bit', or 'Moderately' effective) and 'Not effective' (responding that the strategy was 'A little' or 'Not' effective). There were no significant differences in perceived effectiveness based on age or gender identity (Appendix C). There was a single significant difference based on location. Business cards were seen as less effective by participants in Vancouver. 100% of participants in Maple Ridge and 91% of those in Victoria responded that business cards were effective in contrast to only 25% of those in Vancouver. As mentioned earlier, the development and printing of business cards was left in the hands of the managers at each site, so it is possible that this particular strategy was not implemented in Vancouver. This would explain why only 4 participants from Vancouver responded that they were aware of the strategy.

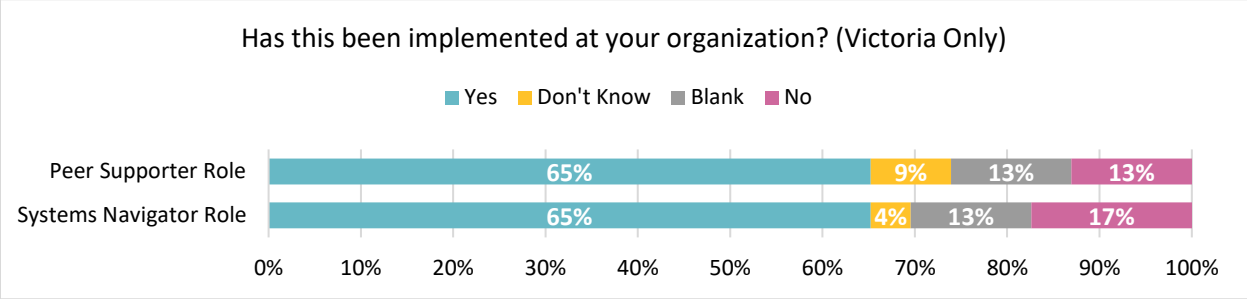
Peer Supporter and Systems Navigator Role

The Peer Supporter and Systems Navigator Roles were only implemented at SOLID Outreach Society in Victoria, so questions about these strategies were restricted to only include the 23 participants in Victoria.

Awareness of Strategies

Figure 5 shows that the majority of the participants in Victoria were aware of these roles, with 65% responding that the strategies had been implemented at their organization. However, the qualitative evaluation of the Peer Supporter and Systems Navigator roles done in 2020 found that there was a lack of awareness of these roles (42). This indicates a need to further improve awareness and uptake for these roles.

Figure 5. Distribution of responses for the question 'Has this been implemented at your organization?' from Victoria only



Effectiveness of Strategies

The sample size for these questions is small as it only includes people from Victoria who were aware of the strategy (responded 'Yes' to the question 'Has this been implemented at your organization?').

As seen in Figure 6, these are the strategies that the smallest proportion of participants thought were 'quite a bit' or 'extremely' effective (47% and 40% respectively). However, very few people said that the strategies were 'not' or 'a little' effective with the majority instead choosing 'moderately' effective. This suggests that while these roles are on the right track, there are improvements to be made. Several recommendations for these roles were made during the qualitative evaluation of these roles (42). Adjusting these roles accordingly would likely increase their effectiveness.

Figure 6. Distribution of responses for the question 'How effective has it been in meeting the needs of your experiential workers at your organization?' from Victoria only

Differences by Demographic Characteristics

There were no significant differences in awareness or perceived effectiveness of the strategies based on age or gender identity (Appendices D and E).

Key Takeaway Messages: The ROSE Model Awareness and Effectiveness

We found that photo IDs, First Aid/CPR training, oximeters, and oximeter training as the most recognized and effective strategies for supporting peer workers. As the perceived effectiveness of these strategies among participants who were aware of them was quite high, the strategies seem to be functioning well and no major changes appear necessary. If the ROSE Model expands to other sites, the implementation of these strategies should be prioritized.

Additionally, as significantly fewer people from Vancouver were aware of many of the strategies (likely due to many new staff), explanations of the strategies/resources for peer workers should be included in the orientation guidelines to make sure that new staff are well informed. Efforts should also be made to remind seasoned peer workers about the strategies to increase both awareness and participation.

Workplace Conditions and Job Satisfaction

As the ROSE Model is an organization-level intervention, it was expected to create a ripple effect and have direct and indirect consequences throughout the organizations. This section of the report examines and compares the results of the baseline and follow-up surveys to evaluate how peer workers' job satisfaction and workplace conditions have changed since the implementation of the ROSE Model.

This section is broken into two subsections: 1) Respect and Recognition and 2) Deriving Meaning from Work.

Respect and recognition of peer workers was expected to be impacted by the 'Recognition' component of the ROSE Model. In fact, the strategies within the 'Recognition' component were explicitly designed to improve this. Through meaningful engagement of peer workers in all aspects of the Peer2Peer project, including the design, implementation and evaluation of the ROSE Model, it was expected that peer workers would feel empowered and attain self-efficacy to take on leadership roles within their organizations and set an example for other people with lived/living experience. This would, in turn, help them derive more meaning from their work.

Respect, Recognition and Appreciation at Work

Fair Pay

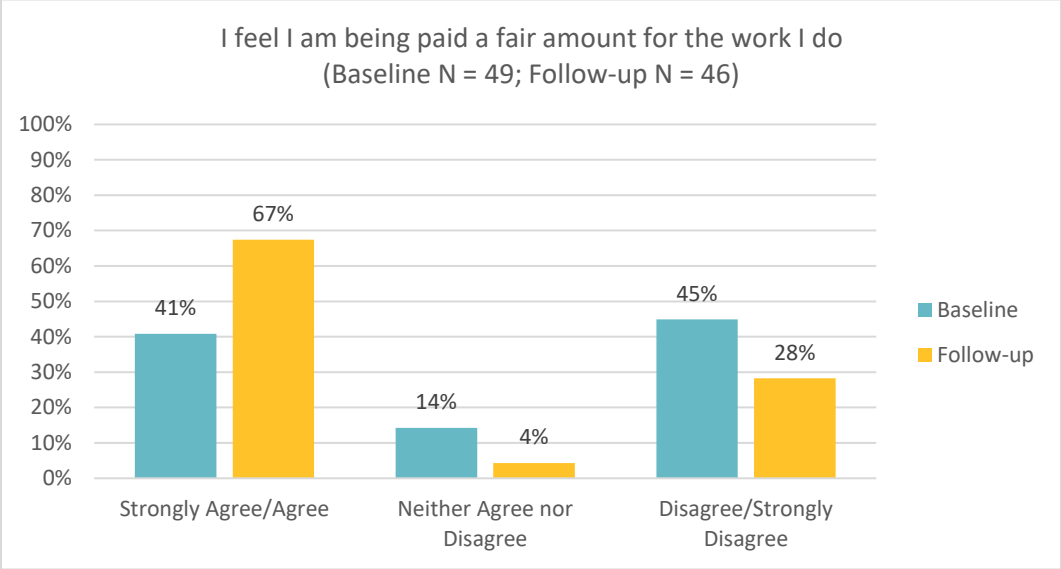
Equitable pay is one of the most tangible symbols of respect for a worker. As such, perception of one's pay being fair or equitable indicates whether that individual feels they are respected in their workplace. As illustrated in Figure 7, there was a significant increase in participants in the follow-up survey feeling that they are being paid fairly for the work that they do compared to the baseline survey ($p = 0.016$). The number of people who responded that they 'Strongly Agree' or 'Agree' have increased from 41% to 67% while 'Disagree' or 'Strongly Disagree' have decreased from 45% to 28%.

This significant increase was also seen among the paired participants, i.e., those that were common across the baseline and follow-up surveys ($p= 0.024$).

It is unclear why there is a change in the perception of pay being equitable, since there has been no change in pay between the baseline and follow-up surveys. However, this perception of increase in pay may be due to the increased number of benefits available through COVID relief efforts.

Sadly, 28% of people in the follow-up survey still believe that they are not being paid fairly. This is not surprising given that one of the key stressors faced by peer workers is their inequitable pay (43). Furthermore, previous studies have indicated that employment opportunities that value lived/living experience are limited (44–47). Wages should be adjusted to ensure that peer workers feel valued financially.

Figure 7. Distribution of responses for the question 'I feel I am being paid a fair amount for the work I do'



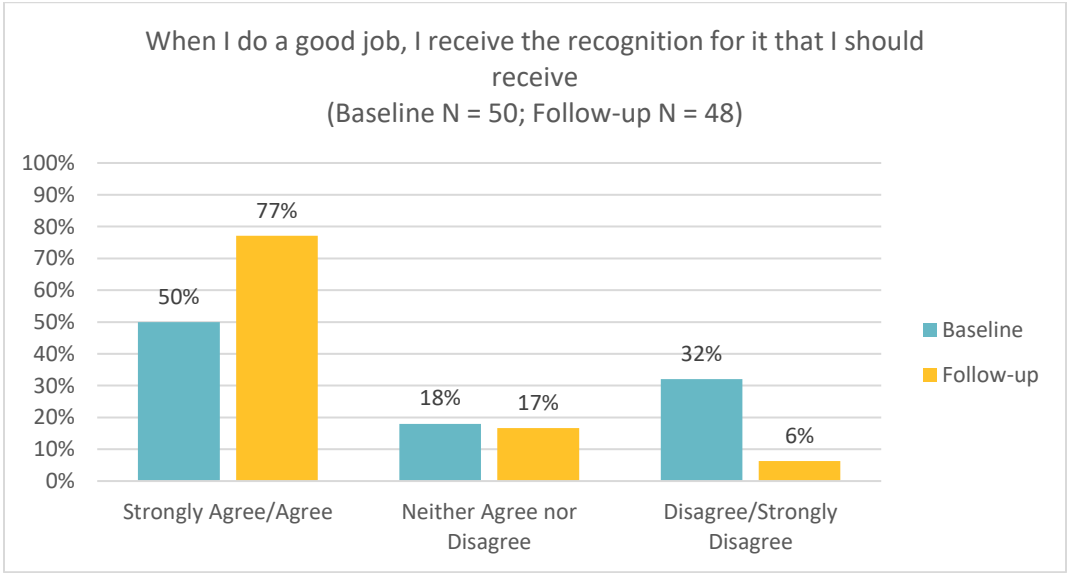
Recognition at Work

Another important marker of respect is appreciation and recognition for doing great work. Figure 8 shows that significantly more participants in the follow-up felt that they receive proper recognition when they do a good job ($p < 0.001$). The percentage of participants who answered 'Strongly Agree' or 'Agree' increased from 50% to 77%. A corresponding reduction was seen in 'Disagree' or 'Strongly Disagree' which decreased from 32% to 6%.

A similar, though non-significant, trend was seen in the paired data ($p = 0.3$).

The majority of participants in the follow-up survey felt that they were receiving the recognition that they should receive (77% answered 'Strongly Agree' or 'Agree').

Figure 8. Distribution of responses for the question 'When I do a good job, I receive the recognition for it that I should receive'

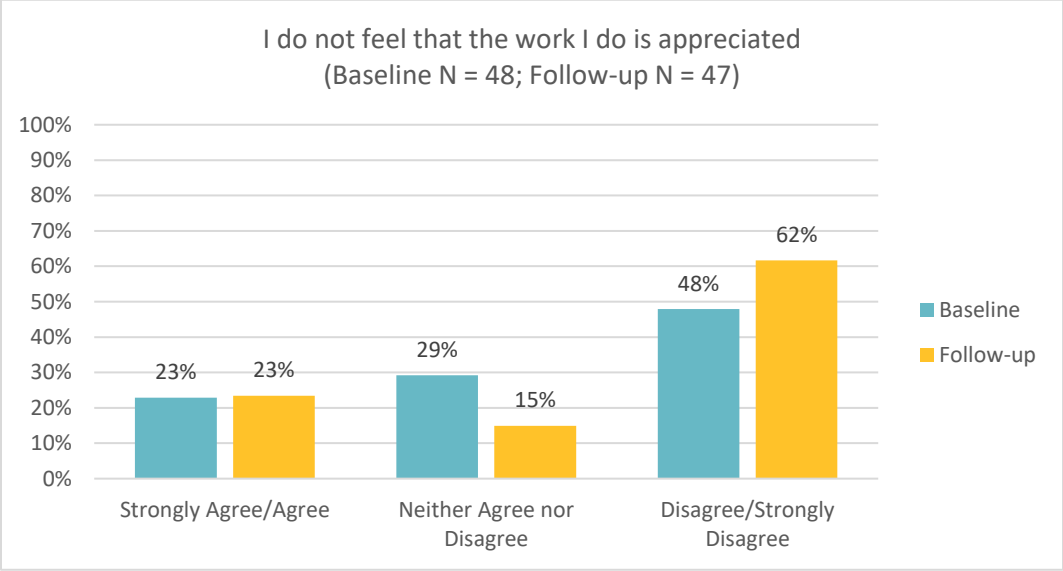


Appreciation at Work

Although very similar to the previous question ('When I do a good job, I receive the recognition for it that I should receive'), the negative wording means that the 'best' answer here is 'Strongly Disagree'. Peer research assistants questioned the reliability of this question, suggesting that participants may have been confused by the wording.

As shown in Figure 9, the proportion of participants who chose 'Disagree' or 'Strongly Disagree' increased from 48% to 62%. However, there was no significant difference between the baseline and follow-up survey.

Figure 9. Distribution of responses for the question 'I do not feel that the work I do is appreciated.'



Key Takeaway Messages: Respect, Recognition and Appreciation at Work

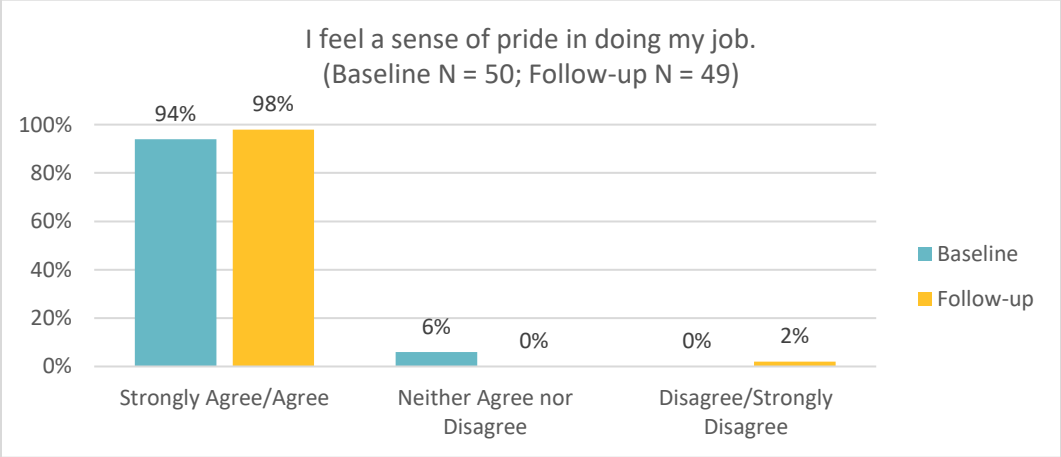
- Significant increases in participants feeling that they are paid fairly and receive proper recognition when they do a good job show that peers feel more appreciated at work
- Very few participants feel that they do not receive the recognition they deserve when they do a good job
- A considerable number of participants still do not feel that they are paid fairly. Peer workers should be paid based on the best practice guidelines for paying peer workers (44,45).

Deriving Meaning from Work

Pride

Having pride in one's job can help individuals derive a sense of meaning from their work. Figure 10 shows that the vast majority of participants feel proud of the work that they do. 94% of participants on the baseline survey selected 'Strongly Agree' or 'Agree' which increased slightly to 98% in the follow-up. A similar trend was seen when restricting to only paired participants. There were no statistically significant changes between the baseline and the follow-up (p = 0.075).

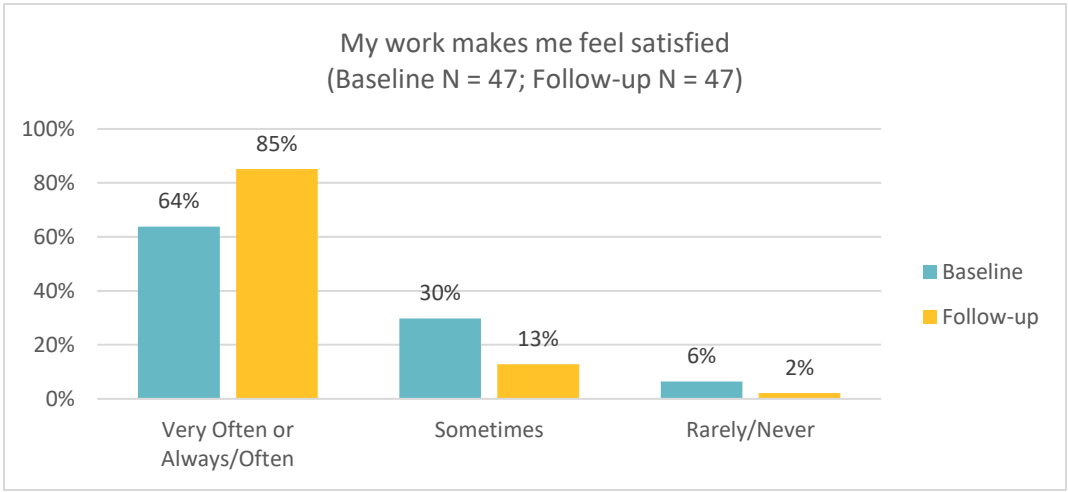
Figure 10. Distribution of responses for the question 'I feel a sense of pride in doing my job.'



Job Satisfaction

Job satisfaction is another important marker of how well an organization is supporting workers. As seen in Figure 11, participants were significantly more satisfied by their work in the follow-up data (p = 0.032). The percentage of participants who 'Very Often or Always' or 'Often' felt satisfied by their work increased from 64% to 85%, while the percentage of participants who 'Rarely' or 'Never' felt satisfied dropped from 6% to only 2%. The same trend is seen after restricting to only paired participants.

Figure 11. Distribution of responses for the question 'My work makes me feel satisfied'



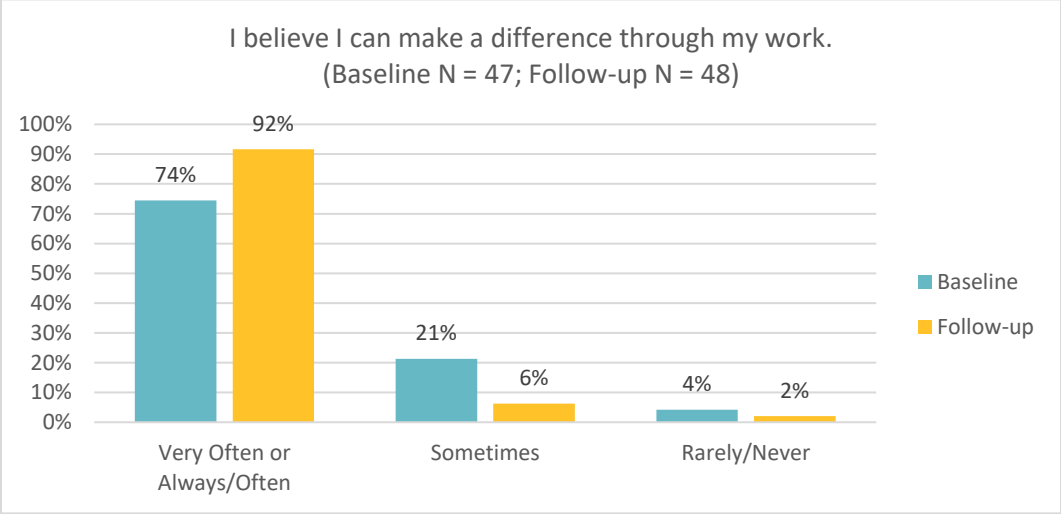
Making a Difference through Work

Similar to a sense of pride in work, believing that the job can make a difference is an important way that individuals derive meaning from the work that they do. Figure 12 displays that more people believe that they can make a difference through their work in the follow-up survey, but the difference is not statistically significant ($p = 0.09$). The percentage of people who answered 'Very Often or Always' or 'Often' increased from 74% to 92%.

However, after restricting to only paired participants, there is no longer a clear trend.

The majority of participants in the follow-up survey do believe that they can make a difference through their work (92% responded 'Very Often or Always' or 'Often). Only 2% of participants in the follow-up survey 'Rarely' felt they could make a difference and no one 'Never' felt that way.

Figure 12. Distribution of responses for the question 'I believe I can make a difference through my work.'



Differences by Demographic Characteristics

Fisher's Exact test was used to test for significant differences in how participants answered questions based on their age, gender identity, or location.

There were only a few statistically significant differences, and all the differences were only significant on either the baseline or the follow-up survey, not both.

In the baseline survey, a significantly smaller percentage of participants who were aged 41-50 felt satisfied with their work compared to participants aged 51 and over. This is perhaps because the participants in the 51+ age category had been involved in peer work for longer and may not derive the same meaning and satisfaction from their work as they did when they were younger.

In the baseline survey, significantly fewer participants in Coquitlam felt that they were recognized when they did a good job in comparison to those in Victoria or Maple Ridge. Similarly, significantly more participants in Victoria felt a sense of pride in doing their job compared to those in Maple Ridge or Vancouver. These location-specific differences may indicate differences in the supports available for peer workers at different sites. Given these site differences, our results suggest that some sites may need to pay extra attention to provide supports for peer workers.

Key Takeaways: Deriving Meaning from Work

- Significantly more peer workers feel satisfied by their work after implementation of the ROSE Model.
- Almost all peer workers are proud of their jobs, however the change pre- vs. post. Implementation is insignificant because the baseline was already high (94% of participants feeling proud of their jobs.)
- The majority of peer workers believe that they can make a difference through their work.

Stressors

This section of the report will cover peer workers' top sources of stress and examine any changes pre- vs. post- implementation of the ROSE Model. We acknowledge that the onset of COVID-19 may have also resulted in changes in peer workers' workload and stressors, thus not all changes can be attributed to the implementation of the ROSE Model.

Workload, burnout, and compassion fatigue were expected to be influenced by all aspects of the ROSE Model. As peer workers felt more respected, recognized, and supported at work, the amount of burnout and compassion fatigue was expected to reduce. Furthermore, some of the skill development opportunities specifically provided peer workers with tools for managing stress and burnout, as well as for practicing self-care.

Although these changes happened at work, it was expected that they might impact the broader landscape of stressors in participants' lives.

Top Stressors

To measure the aspects of life that participants found the most stressful, a question on both the baseline and follow-up surveys provided a list of options and asked participants to pick their top three stressors and rank them 1-3. Although many participants interpreted the question correctly, some chose three options but did not rank them, while others ranked all the options listed. Due to the differences in interpretation of the question, it was decided to abandon the ranking system during analysis and simply dichotomize each stressor as 'mentioned' or 'not mentioned' for each participant.

The results of this question can be seen in Table 2 and Figure 13. On both the baseline and follow up surveys, the top 4 most mentioned stressors were the same: Financial situation (1st in both), Time Pressure (2nd on both), Mental health (3rd in baseline, tied for 2nd in follow-up), and Physical Health (4th in both).

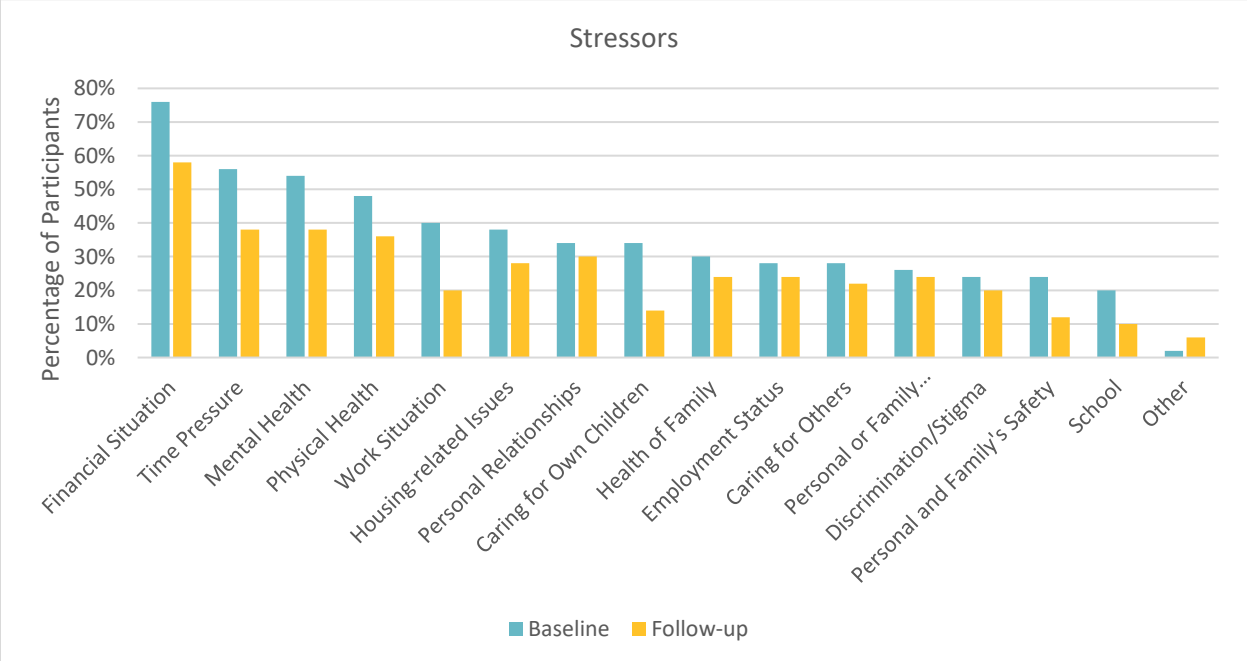
Interestingly, 'Work Situation' decreased in ranking from 5th to 11th and this may be, at least partially, due to the ROSE Model strategies which were all organization-level strategies. 'Caring for Own Children' also decreased in ranking from 7th (tied) to 13th. Since no ROSE Model strategies addressed this stressor directly, this change may be due to increased financial support from the government during the pandemic which provided peer workers with more financial resources to meet their own and their family's needs.

The least mentioned stressors were also similar across the surveys: Personal and Family's Safety (tied with discrimination and stigma for 13th in baseline, 14th in follow-up), School (15th in both), and Other (16th in both).

Table 2. Distribution of participants' most mentioned stressors in response to the question 'Thinking about stress in your day-to-day life, what would you say are the top three most important things contributing to feelings of stress you may have? Rate them as 1, 2 and 3.

	Rank		N (%)	
Stressor	**Baseline**	**Follow-up**	**Baseline**	**Follow-up**
Financial Situation	1	1	38 (76%)	29 (58%)
Time Pressure	2	2	28 (56%)	19 (38%)
Mental Health	3	2	27 (54%)	19 (38%)
Physical Health	4	4	24 (48%)	18 (36%)
Work Situation (e.g. Hours of work, working conditions, stressful work)	5	11	20 (40%)	10 (20%)
Housing-related Issues	6	6	19 (38%)	14 (28%)
Personal Relationships	7	5	17 (34%)	15 (30%)
Caring for Own Children	7	13	17 (34%)	7 (14%)
Health of Family	9	7	15 (30%)	12 (24%)
Employment Status	10	7	14 (28%)	12 (24%)
Caring for Others	10	10	14 (28%)	11 (22%)
Personal or Family Responsibilities	12	7	13 (26%)	12 (24%)
Discrimination/Stigma	13	11	12 (24%)	10 (20%)
Personal and Family's Safety	13	14	12 (24%)	6 (12%)
School	15	15	10 (20%)	5 (10%)
Other	16	16	1 (2%)	3 (6%)

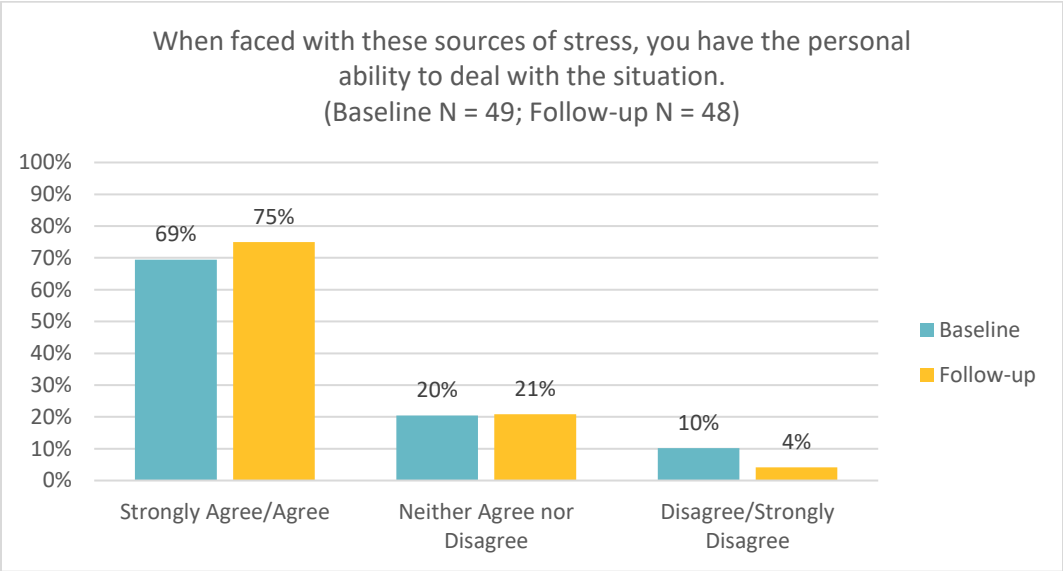
Figure 13. Distribution of participants' most mentioned stressors in response to the question 'Thinking about stress in your day-to-day life, what would you say are the top three most important things contributing to feelings of stress you may have?



Personal Ability to Deal with Stressors

As a follow up question, participants were asked about their personal ability to deal with stressors. However, Figure 14 shows that there was no clear change in participants' personal ability to deal with sources of stress in the full (p = 0.2) or paired data (p = 0.59).

Figure 14. Distribution of responses for the question 'When faced with these sources of stress, you have the personal ability to deal with the situation.'



Key Takeaways: Stressors faced by Peer Workers

- The top sources of stress for peer workers are their financial situation, time pressure, mental health, and physical health.
- The number of participants who are stressed about their work situation has decreased from 40% to 20%. This may be a sign that the ROSE Model has improved participants' overall work situation.
- There was no significant change in how prepared participants felt in dealing with sources of stress on their own. The majority of participants felt that they had the personal ability to deal with their stressors.

Relationships and Support Network

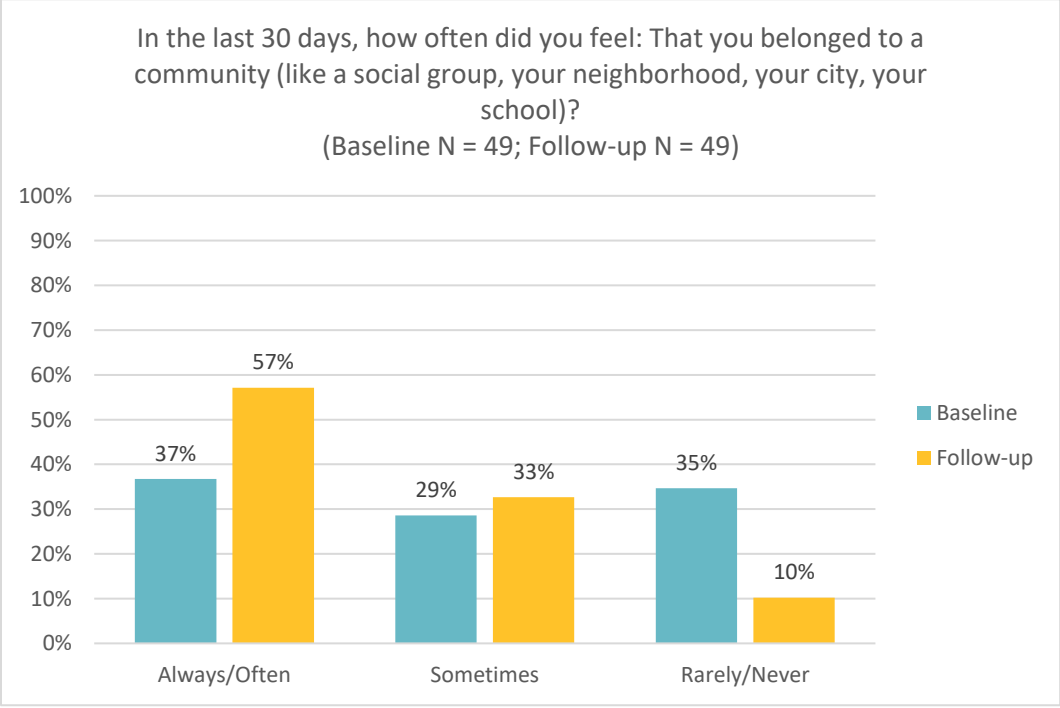
The final portion of this report examines how peer workers' relationships and support networks have changed. Relationships and support networks are an important determinant of health, particularly mental health (48,49).

All the branches of the ROSE Model were expected to influence this section. For example, courses taken in the skill development arm, such as conflict resolution, were added to improve peer workers ability to settle interpersonal disputes. Organizational supports such as teambuilding days and the peer supporter role were designed to improve workplace relationships and facilitated peer-to-peer debriefing. Improving the respect and recognition of peer workers was also expected to help develop relationships between colleagues and other professionals.

Belonging to a Community

Feelings of belonging and community connection were used as an indicator of how supported peer workers felt. There was an increase in how often participants felt that they belonged to a community over the previous 30 days (Figure 15). The number of participants who felt they 'Never' or 'Rarely' belonged fell from 35% in the baseline survey to 10% in the follow-up while 'Always' or 'Often' rose from 37% to 57%. Although the p-value for this change is small at 0.051, it does not quite meet the 0.05 threshold for statistical significance. A similar, though less pronounced change is seen in the paired-only data.

Figure 15. Distribution of responses for the question 'In the last 30 days, how often did you feel: That you belonged to a community (like a social group, your neighborhood, your city, your school)?'



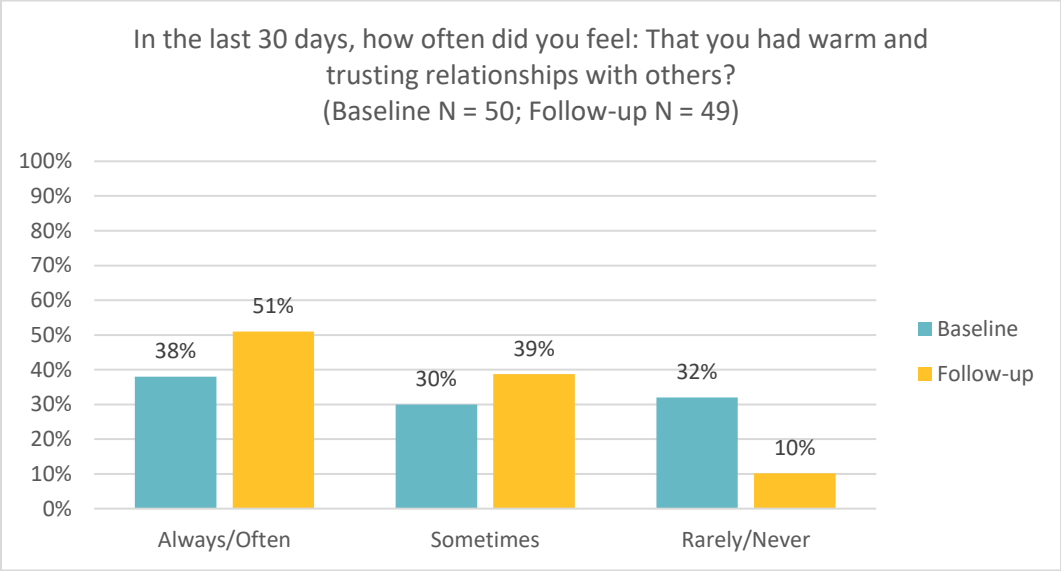
Warm and Trusting Relationships

Warm and trusting relationships are also key to a solid support network. As demonstrated in Figure 16, significantly more participants in the follow-up felt that they had warm and trusting relationships with others ($p = 0.02$). The percentage of participants who said they had 'Never' or 'Rarely' felt this in the

previous 30 days fell from 32% in the baseline to 10% in the follow-up while 'Always' or 'Often' rose from 38% to 51%.

The significant increase was still present after restricting to only paired data (p = 0.025), so it was not an artifact of some fundamental difference between the people in the baseline and follow-up samples.

Figure 16. Distribution of responses for the question 'In the last 30 days, how often did you feel: That you had warm and trusting relationships with others?'



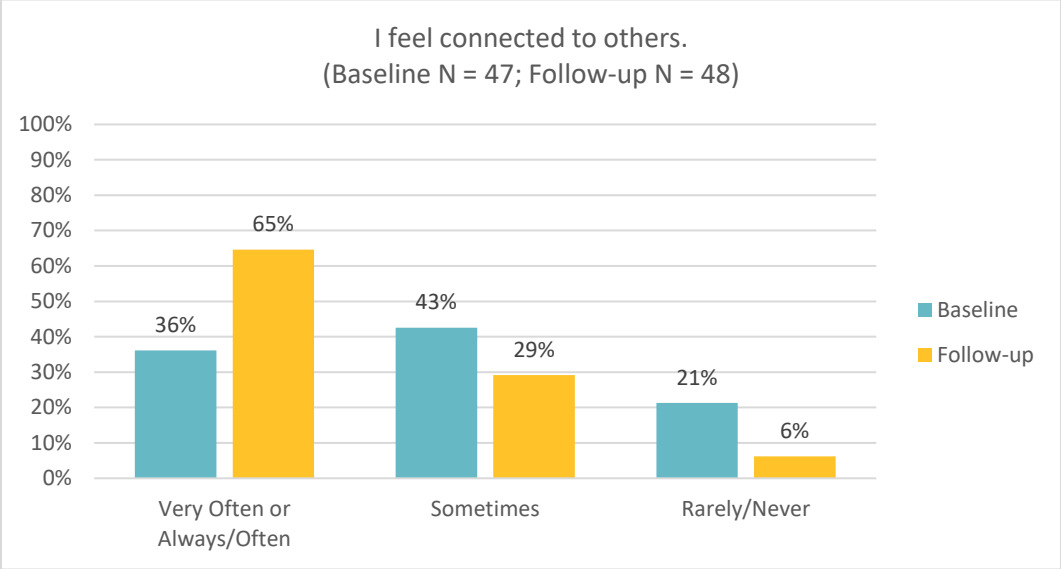
Connection to Others

Feelings of connectedness to other people were also identified as an indicator of supportive relationships. Figure 17 shows that the increase in how connected participants felt to others was also significant (0.003), with the percentage of 'Rarely' or 'Never' decreasing from 21% to 6% and 'Very Often or Always' or 'Often increasing from 36% to 65%.

Once again, this difference was not only present in the full data but was also significant in the paired data on its own (p = 0.021).

This difference was surprising as it was expected that the COVID-19 pandemic would have caused participants to feel less connected to others.

Figure 17. Distribution of responses for the question 'I feel connected to others.'



Key Takeaways: Relationships and Support Network

- Peer workers feel significantly more connected to others in spite of the pandemic.
- Significantly more peer workers feel that they have warm and trusting relationships with others after implementation of the ROSE Model.

Limitations

Although this study has many strengths, it also has limitations. While the majority of the peer workers at the pilot sites participated in the survey, the sample size is quite small for statistical analyses. Additionally, the wording of certain questions may have caused confusion and resulted in some participants reversing the answering scale accidentally. Recall bias may be present as some of the questions asked participants to think back on their experiences over the previous 30 days. There may also be response bias as peer research assistants administered the survey so this may have influenced how participants answered the more sensitive questions. Lastly, the ROSE Model was not the only change that took place between the baseline and follow-up surveys. Other changes to support peer workers were made by individual sites, such as a new trauma councillor at SOLID Outreach. The COVID-19 pandemic also began, which has caused huge shifts in how peer workers operate. Although the changes presented in this report correlate with the implementation of the ROSE Model, causation cannot be confirmed.

Conclusion

The ROSE Model was developed with the intention to: 1) Facilitate equitable access to workplace resources for peers, enabling them to work optimally in a stressful work setting with reduced emotional, mental, and social stress, 2) Provide training and education for peers to improve their skills and gain professional self-confidence, and 3) Increase awareness and recognition among individuals without lived/living experience about the crucial work done by peer workers in overdose response settings (*ROSE paper, submitted for publication)*. It was hoped that, as an organizational-level intervention, the ROSE Model would foster cultural change within organizations and create an overall better work environment for peers.

In this report we have shown that there were significant increases in respect and recognition of peer workers. Interpersonal work relationships and communication at work have also improved, while signs of burnout and compassion fatigue have decreased. Additionally, job satisfaction has increased. Peer workers now identify their work situation as a stressor less than they did before the ROSE Model was implemented. Peer workers' relationships and support networks have also improved.

Although there are still improvements to be made, the ROSE Model has helped improve the workplace conditions, job satisfaction, and support networks of peer workers at the pilot sites and should be expanded to other overdose response settings.

Appendices

Appendix A. Tables containing the distribution of responses for the five strategies participants were most aware of based on the question 'Has this been implemented at your organization?'

	Total Sample	Photo IDs				Oximeters Provided by P2P				Job Description				Pulse Oximeter Training				First Aid Training			
	N (%) N = 50 (100%)	Population that responded N (%) N = 48 (96%)	Yes N (%) N = 45 (94%)	No N (%) N = 3 (6.2%)	p-value[1]	Population that responded N (%) N = 47 (94%)	Yes N (%) N = 41 (87%)	No N (%) N = 6 (13%)	p-value[1]	Population that responded N (%) N = 45 (90%)	Yes N (%) N = 39 (87%)	No N (%) N = 6 (13%)	p-value[1]	Population that responded N (%) N = 43 (86%)	Yes N (%) N = 37 (86%)	No N (%) N = 6 (14%)	p-value[1]	Population that responded N (%) N = 47 (94%)	Yes N (%) N = 37 (79%)	No N (%) N = 10 (21%)	p-value[1]
Gender					>0.9				0.4				>0.9				0.3				
Man	27 (54%)	25 (52%)	23 (92%)	2 (8.0%)		26 (55%)	23 (88%)	3 (12%)		23 (51%)	21 (91%)	2 (8.7%)		23 (53%)	20 (87%)	3 (13%)		25 (53%)	22 (88%)	3 (12%)	
Woman	21 (42%)	21 (44%)	20 (95%)	1 (4.8%)		20 (43%)	17 (85%)	3 (15%)		20 (44%)	16 (80%)	4 (20%)		19 (44%)	16 (84%)	3 (16%)		21 (45%)	15 (71%)	6 (29%)	
Unknown	2 (4.0%)	2 (4.2%)	2 (100%)	0 (0%)		1 (2.1%)	1 (100%)	0 (0%)		2 (4.4%)	2 (100%)	0 (0%)		1 (2.3%)	1 (100%)	0 (0%)		1 (2.1%)	0 (0%)	1 (100%)	
Location					>0.9				0.087				0.2				0.12				**0.002**
Vancouver	18 (36%)	17 (35%)	16 (94%)	1 (5.9%)		18 (38%)	18 (100%)	0 (0%)		18 (40%)	15 (83%)	3 (17%)		18 (42%)	17 (94%)	1 (5.6%)		17 (36%)	9 (53%)	8 (47%)	
Victoria	23 (46%)	22 (46%)	20 (91%)	2 (9.1%)		21 (45%)	16 (76%)	5 (24%)		19 (42%)	18 (95%)	1 (5.3%)		17 (40%)	12 (71%)	5 (29%)		21 (45%)	20 (95%)	1 (4.8%)	
Maple Ridge	8 (16%)	8 (17%)	8 (100%)	0 (0%)		7 (15%)	6 (86%)	1 (14%)		7 (16%)	5 (71%)	2 (29%)		7 (16%)	7 (100%)	0 (0%)		8 (17%)	8 (100%)	0 (0%)	
Unknown	1 (2.0%)	1 (2.1%)	1 (100%)	0 (0%)		1 (2.1%)	1 (100%)	0 (0%)		1 (2.2%)	1 (100%)	0 (0%)		1 (2.3%)	1 (100%)	0 (0%)		1 (2.1%)	0 (0%)	1 (100%)	
Age					0.8				>0.9				0.5				0.5				0.5
40 and under	20 (40%)	20 (42%)	18 (90%)	2 (10%)		18 (38%)	16 (89%)	2 (11%)		18 (40%)	16 (89%)	2 (11%)		17 (40%)	13 (76%)	4 (24%)		20 (43%)	15 (75%)	5 (25%)	
41-51	14 (28%)	12 (25%)	12 (100%)	0 (0%)		14 (30%)	12 (86%)	2 (14%)		12 (27%)	9 (75%)	3 (25%)		13 (30%)	12 (92%)	1 (7.7%)		13 (28%)	12 (92%)	1 (7.7%)	
51+	15 (30%)	15 (31%)	14 (93%)	1 (6.7%)		14 (30%)	12 (86%)	2 (14%)		14 (31%)	13 (93%)	1 (7.1%)		12 (28%)	11 (92%)	1 (8.3%)		13 (28%)	10 (77%)	3 (23%)	
Unknown	1 (2.0%)	1 (2.1%)	1 (100%)	0 (0%)		1 (2.1%)	1 (100%)	0 (0%)		1 (2.2%)	1 (100%)	0 (0%)		1 (2.3%)	1 (100%)	0 (0%)		1 (2.1%)	0 (0%)	1 (100%)	

[1]Fisher's exact test

Distribution of blank/don't know or N/A is not shown in this table; these were treated as missing values. Missing or unknown values were excluded from the Fisher's exact test.

Appendix B. Sample sizes and distribution of responses for the question 'How effective has it been in meeting the needs of your experiential workers at your organization?' among participants who responded 'Yes' to the question 'Has this been implemented at your organization?'.

How effective has it been in meeting the needs of your experiential workers at your organization?

Intervention	Total Sample*	Extremely/ Quite a bit Effective	Moderately Effective	A little/Not Effective	N/A	Blank
First Aid/CPR training (St. Johns)	37	28 (75.7%)	1 (2.7%)	1 (2.7%)	0 (0%)	7 (18.9%)
Pulse oximeter training (video and info sheet)	37	27 (73%)	4 (10.8%)	1 (2.7%)	1 (2.7%)	4 (10.8%)
Photo IDs	45	31 (68.9%)	4 (8.9%)	4 (8.9%)	1 (2.2%)	5 (11.1%)
Oximeters provided through P2P	41	28 (68.3%)	7 (17.1%)	1 (2.4%)	2 (4.9%)	3 (7.3%)
Responding to overdoses during COVID-19 (infographic and training videos)	21	14 (66.7%)	1 (4.8%)	1 (4.8%)	1 (4.8%)	4 (19%)
Business cards	27	18 (66.7%)	1 (3.7%)	4 (14.8%)	1 (3.7%)	3 (11.1%)
#PeerLife Video	21	14 (66.7%)	3 (14.3%)	0 (0%)	2 (9.5%)	2 (9.5%)
Orientation Guidelines	30	19 (63.3%)	6 (20%)	1 (3.3%)	0 (0%)	4 (13.3%)
Contract	29	18 (62.1%)	7 (24.1%)	2 (6.9%)	1 (3.4%)	1 (3.4%)
Formal Job Description	39	23 (59%)	6 (15.4%)	2 (5.1%)	1 (2.6%)	7 (17.9%)
Tools for managing stress/burnout (Crisis Centre)	26	15 (57.7%)	4 (15.4%)	1 (3.8%)	1 (3.8%)	5 (19.2%)
Skillfully responding to distress (Crisis Centre)	25	13 (52%)	4 (16%)	2 (8%)	1 (4%)	5 (20%)
Teambuilding Days	14	7 (50%)	2 (14.3%)	3 (21.4%)	0 (0%)	2 (14.3%)

*Only includes participants who answered 'Yes' to the question 'Has this been implemented at your organization?'

Appendix C. Tables containing the distribution of responses for the five most effective strategies by demographic factor based on the question 'How effective has it been in meeting the needs of your experiential workers at your organization?'

	First Aid Training				Pulse Oximeter Training				Photo IDs				Oximeters Provided by P2P				#PeerLife Video			
	Sample (said YES to Awareness) N (%) N = 30 (60%)	**Effective N (%) N = 29 (97%)[1]**	**Not effective N (%) N = 1 (3.3%)[2]**	**p-value[3]**	**Sample (said YES to Awareness) N (%) N = 32 (64%)**	**Effective N (%) N = 31 (97%)[1]**	**Not effective N (%) N = 1 (3.1%)[2]**	**p-value[3]**	**Sample (said YES to Awareness) N (%) N = 39 (78%)**	**Effective N (%) N = 35 (90%)[1]**	**Not effective N (%) N = 4 (10%)[2]**	**p-value[3]**	**Sample (said YES to Awareness) N (%) N = 36 (72%)**	**Effective N (%) N = 35 (97%)[1]**	**Not effective N (%) N = 1 (2.8%)[2]**	**p-value[3]**	**Sample (said YES to Awareness) N (%) N = 17 (34%)**	**Effective N (%) N = 17 (100%)[1]**	**Not effective N (%) N = 0 (0%)[2]**	**p-value[3]**
Gender				>0.9				>0.9				>0.9				>0.9				>0.9
Man	18 (60%)	17 (94%)	1 (5.6%)		17 (53%)	16 (94%)	1 (5.9%)		20 (51%)	18 (90%)	2 (10%)		20 (56%)	19 (95%)	1 (5.0%)		10 (59%)	10 (100%)	0 (0%)	
Woman	12 (40%)	12 (100%)	0 (0%)		14 (44%)	14 (100%)	0 (0%)		17 (44%)	15 (88%)	2 (12%)		15 (42%)	15 (100%)	0 (0%)		7 (41%)	7 (100%)	0 (0%)	
Unknown					1 (3.1%)	1 (100%)	0 (0%)		2 (5.1%)	2 (100%)	0 (0%)		1 (2.8%)	1 (100%)	0 (0%)					
Location				>0.9				0.5				0.5				0.5				>0.9
Vancouver	9 (30%)	9 (100%)	0 (0%)		17 (53%)	17 (100%)	0 (0%)		16 (41%)	13 (81%)	3 (19%)		17 (47%)	17 (100%)	0 (0%)		1 (5.9%)	1 (100%)	0 (0%)	
Victoria	14 (47%)	13 (93%)	1 (7.1%)		9 (28%)	8 (89%)	1 (11%)		14 (36%)	13 (93%)	1 (7.1%)		13 (36%)	12 (92%)	1 (7.7%)		9 (53%)	9 (100%)	0 (0%)	
Maple Ridge	7 (23%)	7 (100%)	0 (0%)		5 (16%)	5 (100%)	0 (0%)		8 (21%)	8 (100%)	0 (0%)		5 (14%)	5 (100%)	0 (0%)		7 (41%)	7 (100%)	0 (0%)	
Unknown					1 (3.1%)	1 (100%)	0 (0%)		1 (2.6%)	1 (100%)	0 (0%)		1 (2.8%)	1 (100%)	0 (0%)					
Age				>0.9				>0.9				0.4				>0.9				>0.9
40 and under	13 (43%)	12 (92%)	1 (7.7%)		13 (41%)	12 (92%)	1 (7.7%)		14 (36%)	13 (93%)	1 (7.1%)		14 (39%)	13 (93%)	1 (7.1%)		6 (35%)	6 (100%)	0 (0%)	
41-51	8 (27%)	8 (100%)	0 (0%)		10 (31%)	10 (100%)	0 (0%)		10 (26%)	10 (100%)	0 (0%)		10 (28%)	10 (100%)	0 (0%)		8 (47%)	8 (100%)	0 (0%)	
51+	9 (30%)	9 (100%)	0 (0%)		8 (25%)	8 (100%)	0 (0%)		14 (36%)	11 (79%)	3 (21%)		11 (31%)	11 (100%)	0 (0%)		3 (18%)	3 (100%)	0 (0%)	
Unknown					1 (3.1%)	1 (100%)	0 (0%)		1 (2.6%)	1 (100%)	0 (0%)		1 (2.8%)	1 (100%)	0 (0%)					

[1]This table only includes participants who responded 'Yes' the intervention had been implemented. 'Effective' was defined as responding that the intervention was 'Extremely', 'Quite a bit', or 'Moderately' effective

[2]'Not effective' was defined as responding that the intervention was 'A little' or 'Not' effective

[3]Fisher's exact test. Distribution of blank/don't know or N/A is not shown in this table; these were treated as missing values. Missing or unknown values were excluded from the Fisher's exact test.

Appendix D. Tables containing the distribution of responses for the question 'Has this been implemented at your organization?' by demographic factor among participants in Victoria

	Total Sample	Peer Supporter Role			
	N (%) N = 23 (100%)	**Population that responded N (%) N = 18 (78%)**	**Yes N (% of participants) N = 15 (83%)**	**No N (% of participants) N = 3 (17%)**	**p-value[1]**
Gender					>0.9
Man	16 (70%)	13 (72%)	11 (85%)	2 (15%)	
Woman	6 (26%)	5 (28%)	4 (80%)	1 (20%)	
Unknown	1 (4.3%)		0 (NA%)	0 (NA%)	
Age					0.8
40 and under	9 (39%)	7 (39%)	5 (71%)	2 (29%)	
41-51	6 (26%)	4 (22%)	4 (100%)	0 (0%)	
51+	8 (35%)	7 (39%)	6 (86%)	1 (14%)	

[1]Fisher's exact test

Distribution of blank/don't know or N/A is not shown in this table; these were treated as missing values. Missing or unknown values were excluded from the Fisher's exact test.

	Total Sample	Systems Navigator Role			
	N (%) N = 23 (100%)	**Population that responded N (%) N = 19 (83%)**	**Yes N (% of participants) N = 15 (79%)**	**No N (% of participants) N = 4 (21%)**	**p-value[1]**
Gender					>0.9
Man	16 (70%)	14 (74%)	11 (79%)	3 (21%)	
Woman	6 (26%)	5 (26%)	4 (80%)	1 (20%)	
Unknown	1 (4.3%)		0 (NA%)	0 (NA%)	
Age					0.5
40 and under	9 (39%)	9 (47%)	6 (67%)	3 (33%)	
41-51	6 (26%)	4 (21%)	4 (100%)	0 (0%)	
51+	8 (35%)	6 (32%)	5 (83%)	1 (17%)	

[1]Fisher's exact test

Distribution of blank/don't know or N/A is not shown in this table; these were treated as missing values. Missing or unknown values were excluded from the Fisher's exact test.

Appendix E. Tables containing the distribution of responses for the question 'How effective has it been in meeting the needs of your experiential workers at your organization?' by demographic factor among participants in Victoria

	Peer Supporter Role			
	Sample (said YES to Awareness) N (%) N = 13 (26%)	**Effective N (% of participants) N = 12 (92%)[1]**	**Not effective N (% of participants) N = 1 (7.7%)[2]**	**p-value[3]**
Gender				>0.9
Man	10 (77%)	9 (90%)	1 (10%)	
Woman	3 (23%)	3 (100%)	0 (0%)	
Age				0.2
40 and under	4 (31%)	4 (100%)	0 (0%)	
41-51	3 (23%)	2 (67%)	1 (33%)	
51+	6 (46%)	6 (100%)	0 (0%)	

[1]This table only includes participants who responded 'Yes' the intervention had been implemented. 'Effective' was defined as responding that the intervention was 'Extremely', 'Quite a bit', or 'Moderately' effective
[2]'Not effective' was defined as responding that the intervention was 'A little' or 'Not' effective
[3]Fisher's exact test
Distribution of blank/don't know or N/A is not shown in this table; these were treated as missing values. Missing or unknown values were excluded from the Fisher's exact test.

	Systems Navigator Role			
	Sample (said YES to Awareness) N (%) N = 13 (26%)	**Effective N (% of participants) N = 13 (100%)[1]**	**Not effective N (% of participants) N = 0 (0%)[2]**	**p-value[3]**
Gender				>0.9
Man	10 (77%)	10 (100%)	0 (0%)	
Woman	3 (23%)	3 (100%)	0 (0%)	
Age				>0.9
40 and under	5 (38%)	5 (100%)	0 (0%)	
41-51	3 (23%)	3 (100%)	0 (0%)	
51+	5 (38%)	5 (100%)	0 (0%)	

[1]This table only includes participants who responded 'Yes' the intervention had been implemented. 'Effective' was defined as responding that the intervention was 'Extremely', 'Quite a bit', or 'Moderately' effective
[2]'Not effective' was defined as responding that the intervention was 'A little' or 'Not' effective
[3]Fisher's exact test
Distribution of blank/don't know or N/A is not shown in this table; these were treated as missing values. Missing or unknown values were excluded from the Fisher's exact test.

References

1. Fischer B, Murphy Y, Rudzinski K, MacPherson D. Illicit drug use and harms, and related interventions and policy in Canada: A narrative review of select key indicators and developments since 2000. Int J Drug Policy. 2016 Jan;27:23–35.

2. Rudd RA, Aleshire N, Zibbell JE, Matthew Gladden R. Increases in drug and opioid overdose deaths — United States, 2000–2014. Morb Mortal Wkly Rep. 2016 Jan;64(50–51):1378–82.

3. Wallace B, Barber K, Pauly B (Bernie). Sheltering risks: Implementation of harm reduction in homeless shelters during an overdose emergency. Int J Drug Policy. 2018 Mar;53:83–9.

4. Kimber J, Hickman M, Strang J, Thomas K, Hutchinson S. Rising opioid-related deaths in England and Scotland must be recognised as a public health crisis. Lancet Psychiatry. 2019 Aug;6(8):639–40.

5. Belzak L, Halverson J. The opioid crisis in Canada: A national perspective. Health Promot Chronic Dis Prev Can. 2018 Jun;38(6):224–33.

6. Public Health Agency of Canada, Lindsay B. Opioid-related harms in Canada. CBC News. 2020;

7. British Columbia Coroners Service. Illicit Drug Toxicity Deaths in BC January 1, 2011 - May 31, 2021 (posted June 29) [Internet]. 2021 [cited 2021 Jul 28]. Available from: https://www2.gov.bc.ca/assets/gov/birth-adoption-death-marriage-and-divorce/deaths/coroners-service/statistical/illicit-drug.pdf

8. Anderson K, BC Gov News. Provincial health officer declares public health emergency | BC Gov News. BC Gov News. 2016 Apr;

9. BC Gov News. Province declares state of emergency to support COVID-19 response. BC Gov News. 2020 Mar;

10. Bardwell G, Kerr T, Boyd J, McNeil R. Chracterizing peer roles in an overdose crisis: Preferences for peer workers in overdose response programs in emergency shelters. Drug Alcohol Depend. 2018 Sep;190:6–8.

11. Kennedy MC, Boyd J, Mayer S, Collins A, Kerr T, McNeil R. Peer worker involvement in low-threshold supervised consumption facilities in the context of an overdose epidemic in Vancouver, Canada. Soc Sci Med. 2019 Mar;225:60–8.

12. Wallace B, Pagan F, Pauly B. The implementation of overdose prevention sites as a novel and nimble response during an illegal drug overdose public health emergency. Int J Drug Policy. 2019 Apr;66:64–72.

13. Marshall Z, Dechman MK, Minichiello A, Alcock L, Harris GE. Peering into the literature: A systematic review of the roles of people who inject drugs in harm reduction initiatives. Vol. 151, Drug and Alcohol Dependence. Elsevier Ireland Ltd; 2015. p. 1–14.

14. Irvine MA, Kuo M, Buxton JA, Balshaw R, Otterstatter M, Macdougall L, et al. Modelling the combined impact of interventions in averting deaths during a synthetic-opioid overdose epidemic. Addiction. 2019;114(9):1602–13.

15. Woo A. Virus measures may be hurting overdose prevention in Vancouver, official says. The Globe and Mail. 2020;

16. Pagliaro J. City's busiest supervised injection site to reopen after month-long closure over COVID-19. The Star. 2020;

17. BC Centre for Disease Control. Overdose Prevention Services Indicators [Internet]. 2021 [cited 2021 Aug 9]. Available from: http://www.bccdc.ca/health-professionals/data-reports/overdose-response-indicators

18. BC Centre for Disease Control. Observed Consumption Services [Internet]. 2019 [cited 2021 Sep 7]. Available from: http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/Overdose/Final_OCSStatement_June2019.pdf

19. Bardwell G, Anderson S, Richardson L, Bird L, Lampkin H, Small W, et al. The perspectives of structurally vulnerable people who use drugs on volunteer stipends and work experiences provided through a drug user organization: {Opportunities} and limitations. Int J Drug Policy. 2018 May;55:40–6.

20. Wagner KD, Davidson PJ, Iverson E, Washburn R, Burke E, Kral AH, et al. "I felt like a superhero": The experience of responding to drug overdose among individuals trained in overdose prevention. Int J Drug Policy. 2013;25(1):1–1.

21. Shepard BC. Between harm reduction, loss and wellness: on the occupational hazards of work. Harm Reduct J. 2013;10(1):5–5.

22. Declaire C. On the front line of a crisis, overdose-prevention staff could use some help. CBC News. 2018;

23. Teti M, Bowleg L, Spencer S. Who Helps the Helpers? A Clinical Supervision Strategy to Support Peers and Health Educators Who Deliver Sexual Risk Reduction Interventions to Women Living With HIV/AIDS. J HIVAIDS Soc Serv. 2009;8(4).

24. Pauly B (Bernie), Mamdani Z, Mesley L, McKenzie S, Cameron F, Edwards D, et al. "It's an emotional roller coaster… But sometimes it's fucking awesome": Meaning and motivation of work for peers in overdose response environments in British Columbia. Int J Drug Policy. 2021 Feb;88.

25. Tookey P, Mason K, Broad J, Behm M, Bondy L, Powis J. From client to co-worker: A case study of the transition to peer work within a multi-disciplinary hepatitis c treatment team in Toronto, Canada. Can Harm Reduct J. 2018;15(41.).

26. True G, Alexander LB, Fisher CB. Supporting the role of community members employed as research staff: Perspectives of community researchers working in addiction research. 187 67 75., editor. Soc Sci Med 1982. 2017;187.

27. Wilson L, Vannice S, Hacksel C, Leonard L. Peer worker or client?: Conflicting identities among peer workers engaged in harm reduction service delivery. Addict Res Theory. 2017 Sep;26(5):361–8.

28. Johnson L. 'We're starving for it': Paramedics get new resiliency training due to overdose crisis | CBC News. 2017;

29. Joint Task Force on Overdose Prevention and Response. Progress Update on B.C.'s Response to the Opioid Overdose Public Health Emergency. 2017;

30. Peer2Peer (P2P) [Internet]. [cited 2021 Jul 20]. Available from: https://towardtheheart.com/peer2peer-project

31. Peer2Peer. The ROSE Initiative [Internet]. Toward the Heart. [cited 2021 Aug 3]. Available from: https://towardtheheart.com/assets/uploads/1624401271al1BjKNavzBDHPZalxFY2M4JDd1Yb3plfenRb5e.pdf

32. Ware JE, Kosinski M, Keller SD. A 12-Item Short-Form Health Survey: Construction of Scales and Preliminary Tests of Reliability and Validity. Med Care. 1996 Mar;34(3):220–33.

33. Canada H. Canadian Community Health Survey [Internet]. 2005 [cited 2021 Jul 25]. Available from: https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/health-nutrition-surveys/canadian-community-health-survey-cchs.html

34. The Centre for Victims of Torture. Professional Quality of Life (ProQOL) [Internet]. ProQOL. [cited 2021 Jul 25]. Available from: https://proqol.org/

35. Spector P. Job Satisfaction Survey [Internet]. Paul Spector. 1994 [cited 2021 Jul 25]. Available from: https://paulspector.com/assessments/pauls-no-cost-assessments/job-satisfaction-survey-jss/

36. The R Foundation. R: The R Project for Statistical Computing [Internet]. 2020 [cited 2020 Aug 4]. Available from: https://www.r-project.org/

37. Feldman-Kiss D, Mamdani Z. The Use of Pulse Oximeters to Supplement Overdose Response in British Columbia: Perceptions of Experiential Workers. BC Centre for Disease Control; 2020 p. 24.

38. Shapiro A, Sim D, Wu H, Mogg M, Tobias S, Patel P, et al. Detection of etizolam, flualprazolam and flubromazolam by benzodiazepine-specific lateral flow immunoassay test strips [Internet]. BC Centre on Substance Use and Provincial Toxicology Centre; 2020 Jul p. 13. Available from: https://www.bccsu.ca/wp-content/uploads/2020/08/BenzoTestStrip_Report.pdf

39. St. Denis J. Why B.C.'s illicit drugs are increasingly deadly [Internet]. Prince George Citizen. 2020 [cited 2021 Sep 9]. Available from: https://www.princegeorgecitizen.com/local-news/why-bcs-illicit-drugs-are-increasingly-deadly-3741116

40. Brend Y. Mysterious drug mix causing harder-to-revive overdoses, sparking new panic on DTES [Internet]. CBC. 2019 [cited 2021 Sep 9]. Available from: https://www.cbc.ca/news/canada/british-columbia/new-kind-of-overdose-dtes-benzo-filler-anxiety-depression-drug-making-narcan-fail-1.5096395

41. BC Centre for Disease Control. Collated BC resource: enzodiazepine/etizolam in illicit opioids [Internet]. Toward the Heart. 2021 [cited 2021 Sep 9]. Available from: https://towardtheheart.com/assets/doap/collated-benzo-etizolam-in-opioid-bccdc-resources-may_799.pdf

42. Mamdani Z, Pauly B, Buxton JA. Evaluation of the Peer Supporter and Systems Navigator Roles at SOLID Outreach Society. BC Centre for Disease Control; 2021 May p. 38.

43. Mamdani Z, McKenzie S, Pauly B, Cameron F, Conway-Brown J, Edwards D, et al. "Running myself ragged": stressors faced by peer workers in overdose response settings. Harm Reduct J. 2021 Feb 11;18(1):18.

44. Richardson L, Small W, Kerr T. Pathways linking drug use and labour market trajectories: the role of catastrophic events. Sociol Health Illn. 2016 Jan 1;38(1):137–52.

45. Henkel D. Unemployment and Substance Use: A Review of the Literature (1990-2010). Curr Drug Abuse Rev. 2011 Mar 1;4(1):4–27.

46. Richardson L, Wood E, Kerr T. The impact of social, structural and physical environmental factors on transitions into employment among people who inject drugs. Soc Sci Med. 2013 Jan 1;76(1):126–33.

47. Boyd J, Richardson L, Anderson S, Kerr T, Small W, McNeil R. Transitions in income generation among marginalized people who use drugs: A qualitative study on recycling and vulnerability to violence. Int J Drug Policy. 2018 Sep 1;59:36–43.

48. Health Canada. Strategies for Population Health: Investing in the Health of Canadians [Internet]. Ottawa: Health Canada; [cited 2021 Aug 22]. 51 p. Available from: https://publications.gc.ca/collections/Collection/H88-3-30-2001/pdfs/other/strat_e.pdf

49. Wilkinson RG, Marmot MG, editors. Social determinants of health: the solid facts. 2nd. ed. Copenhagen: Centre for Urban Health; 2003. 31 p.