Heat-Related Illness Prevention and Policy Change for Migrant and Seasonal Farmworkers in Oregon

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Abstract
Farmworkers experience more heat fatalities than any other group of outdoor laborers. Migrant and seasonal farmworkers face many cultural barriers that leave them marginalized and unempowered. It is because of these cultural barriers that many employers do not offer sufficient safety education, shade, hydration, and cool-down rest to prevent Heat-Related Illness (HRI). The California Occupational Safety and Health Administration (Cal-OSHA) has implemented new policies that have been successful helping employers understand the regulations to protect the workers (Castellon, 2016). Oregon-OSHA will create and implement their own policies relating to HRI with the collaboration of Cal-OSHA. Best practices have shown that when training migrant and seasonal farmworkers, partnering with community-based organizations increases preventive practices and create improvements in work safety (Austin et al, 2001). ¡Salúd! Services will partner with local winery/vineyard employers to deliver education and technical assistance to local wineries/vineyards. ¡Salúd! Services will use college interns in their heat safety program, they will write proposals for safety grants and conduct weekly routine visits to the vineyards/wineries. These policy changes and the ¡Salúd! Heat Safety Program will reduce HRI and increase health equity for migrant and seasonal farmworkers in Oregon.

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PROPOSAL

Heat-Related Illness Prevention and Policy Change for Migrant and Seasonal Farmworkers in Oregon

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Farmworkers experience more heat fatalities than any other group of outdoor laborers. Migrant and seasonal farmworkers face many cultural barriers that leave them marginalized and unempowered. It is because of these cultural barriers that many employers do not offer sufficient safety education, shade, hydration, and cool-down rest to prevent Heat-Related Illness (HRI). The California Occupational Safety and Health Administration (Cal-OSHA) has implemented new policies that have been successful helping employers understand the regulations to protect the workers (Castellon, 2016). Oregon-OSHA will create and implement their own policies relating to HRI with the collaboration of Cal-OSHA. Best practices have shown that when training migrant and seasonal farmworkers, partnering with community-based organizations increases preventive practices and create improvements in work safety (Austin et al, 2001). ¡Salúd! Services will partner with local winery/vineyard employers to deliver education and technical assistance to local wineries/vineyards. ¡Salúd! Services will use college interns in their heat safety program, they will write proposals for safety grants and conduct weekly routine visits to the vineyards/wineries. These policy changes and the ¡Salúd! Heat Safety Program will reduce HRI and increase health equity for migrant and seasonal farmworkers in Oregon.
POPULATION DESCRIPTION

There are approximately 3 million migrant and seasonal agricultural workers in the United States, 42% identify as migrant and 58% identify as seasonal (NCFH, 2012). Seventy-five percent of the farmworkers in the United States are from Mexico (Student Action with Farmworkers, 2017). The United States Department of Labor (2013), describes a seasonal farmworker as someone who does not need to leave their permanent residence for more than one day to work and that at least half their earnings come from agricultural work. A migrant farmworker is someone who has to travel to agricultural work and is unable to return to their permanent residence within the same day.

Larson (2013) estimates there were 28,340 migrant workers and 61,949 seasonal workers that play in the state's economy. An estimated 174,000 migrant and seasonal farmworkers, and related family members support Oregon’s multi-billion-dollar agricultural industry. Most of these workers and their families do not have health care coverage through their employer. As a result, migrant and seasonal farmworkers experience higher rates of specific health problems such as diabetes, hypertension, cardiovascular disease and cancer than most other Oregonians. (Oregon Health Authority, n.d.) The NCFH (2012) reported that “Migrant and seasonal farmworkers represent some of the most economically disadvantaged people in the U.S. According to the 2007-2009 NAWS survey results, 23% of farmworker families had total family income levels below the national poverty guidelines”.

Most farmworkers are young men from Mexico who come to the United States in hopes of making some money to support their families at home, take care of themselves, with hopes of making enough money to build a house in Mexico and return home. Most leave their only support system, their culture, language, cuisine, all behind for a chance of making a better life for him and his family. Over half of the farmworkers are undocumented, which isolates them more from society (Gonzalez, 2015). As soon as migrant workers complete a contract with one employer, they will move on to the next farm, many times in other states. Many migrant workers don’t have a permanent residence or socialize much with the surrounding communities because they never stay too long in one area. Many will return home to their countries of origin in the winter, or sometimes establish a winter residence. Seasonal workers do have a permanent residence and are able to socialize and form relationships within a community. Depending on the season, they will work with local employers cultivating and harvesting seasonal crops. Although it is difficult for them to provide for their families financially during down seasons, having connections within the community usually makes accessing necessities easier.

Many of the agricultural workers encounter language barriers, cultural barriers, discrimination, and knowledge of qualifications for certain programs and medical systems and basic health education. (L. Garside, Personal Communication, 2016, September 7) In many ways, one could see them as having dual-marginality. Not only are they Hispanic agricultural workers, but
undocumented as well. These are two more barriers making it more difficult for them to get access to many basic needs to live.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Hired Farmworkers</th>
<th>All Wage and Salary Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citizenship status</td>
<td>Approximately 33% are non-U.S. citizens</td>
<td>Ninety percent are U.S. citizens</td>
</tr>
<tr>
<td>Education</td>
<td>About 30% completed 9th grade or below</td>
<td>Less than 5% completed 9th grade or below</td>
</tr>
<tr>
<td>Gender</td>
<td>Women account for about 20%</td>
<td>Women account for 50%</td>
</tr>
<tr>
<td>Hispanic ethnicity</td>
<td>Nearly 50% of all workers</td>
<td>About 14% of all workers</td>
</tr>
</tbody>
</table>

**ROOT CAUSE ANALYSIS/STATEMENT OF NEED**

Heat-related illness, according to Becker and Stewart (2011), is preventable conditions that can range from mild, moderate and in some instances, can result in death. Although heat-related illness is generally a preventable condition there is an average of nearly 450 deaths occur each year for people who work outdoors in the United States (Kearney, Hu, Xu, Hall & Balaney, 2016). While not all of these deaths are farmworkers, it is duly noted that farmworkers have a rate 20 times higher than all other U.S. workers. According to the CDC (2008), there have been approximately 102 agricultural workers and 68 crop production workers that have died from over exposure to heat from 1992-2006 reported in the United States. One could say approximately because many deaths go unreported due to HRI incidents are not identified at the time of death (Jackson and Rosenberg, 2010). Migrant and seasonal farmworkers are being paid by the piece instead of the hour, which incentivizes the workers to not stop for breaks, it is an initiative that employers use to get the workers to work faster and harder (Spector, Krenz, & Blank, 2015). Ultimately, this issue can be another factor leading up to an HRI.

According to Jackson and Rosenberg (2010), currently, there are no federal occupational safety regulations specifically addressing heat illness prevention. Other things, that have a great bearing on workers getting an HRI would be the education that the employer is supposed to be giving to each worker about HRI (what it is, symptoms, etc.). Many people who first start to work outside for the first time have difficulties acclimating their bodies, also leaving them more susceptible for HRI. Since there are no regulations, more times than not, there isn’t any shade provided for workers to rest in. If they are fortunate enough, they can use trees in the orchards or the side of a barn or building. California and Washington have adopted state regulations to reduce the incidence of HRI, but still, have deaths reported. According to Bethel & Harger (2014), that some of the reasoning behind no regulations being put in place in Oregon would be that the climate is milder in comparison to Washington and California. It must be pointed out, Adam-Poupart, Labrèche, Smargiassi, et al., (2013) that although the risk of HRI is higher in
hotter and humid areas of the world, HRI can occur even in temperate climates when a person’s internal temperature is high and clothing is not optional. The only thing Oregon employers must provide is sanitation, a hand washing station, and water for drinking. But, research shows that those requirements aren’t always provided or regulated (Bethel & Harger, 2014).

Some of the causes are not with just the lack of regulation but have to do with many different types of inequities and social injustices that the migrant and seasonal farmworkers endure. Because a high proportion of these workers are undocumented, it is necessary to consider their culture, where it may be unmanly to complain about the heat, and lack of water, shade, or breaks (Culp et al, 2011). According to Culp, Brooks, Rupe, and Zwerling (2008), Hispanic workers may be reluctant to mention they are dehydrated because they may fear the questions about their legality or other things that could disqualify them from work. Talking with authority figures is usually uncomfortable and they simply don’t want to complain because they don’t want to lose their jobs. (Menzel & Gutierrez, 2009)

Migrant and seasonal farmworkers live in very poor living conditions which also makes them more susceptible to HRI. The small cramped living quarters most live in are usually not air-conditioned. Therefore, their core temperatures don’t ever fully cool down over night. Many have no indoor plumbing and no kitchens. The workers usually have to share bathrooms, showers and outdoor kitchens. Most the time, there are not enough facilities for the number of workers at each camp. But, for many reasons mentioned, the seasonal and migrant agricultural workers are not ones for voicing their opinions on poor working conditions. (G. Hernandez, personal communication, September 24, 2016) Since many of the farmworkers are just passing through and don’t have their families with them, they feel more vulnerable without that social support.

A simplified model of heat-related illness conditions with associated symptoms. The heat illness conditions are not a physiological continuum such that individuals may not incur all conditions. Symptoms may vary by individual, heat illness condition, and time since onset. Some symptoms may be present in multiple conditions (Jackson, L.L., Rosenberg, H.R., 2010)
REVIEW OF INTERVENTIONS/EVIDENCE BASE

Integrated Approach that includes Culturally Competent Safety Training, Policy Change and Employer/Supervisor Involvement

Migrant and Seasonal farmworkers are more likely to benefit greater from an integrated approach because, at present time, no single intervention alone has been very successful in reducing heat-related illness. McLeroy, Bibeau, Steckler & Glanz (1988), propose that the ecological model for health promotion, which addresses the importance of interventions directed at changing interpersonal, organizational, community, and public policy, factors which support and maintain unhealthy behaviors. Furthermore, McLeroy and his colleagues also agree that the model assumes that appropriate changes in the social environment will produce changes in individuals and that the support of individuals in the population is essential for implementing environmental changes. Therefore, culturally competent safety training, policy change, and employer/supervisor commitment are all needed for this intervention to be successful. Jackson and Rosenberg (2010), suggest preventing heat illnesses in agricultural settings, a culture of heat awareness, safe work practices developed through industry specific research; and an environment where employers, managers, and workers exercise joint responsibility is needed. According to Sarah Horton, state laws that grant outdoor workers relief from the heat are only a first step in our efforts to reduce heat deaths, policy change on multiple fronts is necessary in order to combat the epidemic of heat-related deaths among farmworkers(as cited in “It’s not just the heat…,”2016) Comprehensive public health programs should generally attempt to implement measures at each level of intervention to maximize synergy and the likelihood of long-term program success (Frieden, 2010). The following sections outline best practices in each of these areas.

Culturally Competent Safety Training

The ¡Salud! Heat Safety Program will use culturally appropriate materials to train vineyard/winery employees about HRI so there is a better understanding of the symptoms, actions to take in reducing illnesses, their responsibilities along with the employers/supervisors, and potentially their rights under the new policies that will be put into regulation. In general, occupational safety and health training should be culturally specific, understood by individuals with minimal formal education, translated into Spanish, and brief so it holds workers’ attention (Culp et al, 2011). Tailoring the heat safety program will increase the effectiveness of the program and it will ensure the program sustainability. An intervention was done with lay health workers to teach women farmworkers a safety pesticide curriculum, although they were successful in having increased the knowledge of the farmworkers, they found that they needed a more structured program to be sure that the dose of interventions is large enough to overcome educational and cultural characteristics of immigrant communities. Policy changes are needed to
address circumstances outside of farmworkers' control that affects pesticide exposure (Arcury et al, 2008) When ¡Salud! trains the vineyard/winery employees, they will need to make sure they themselves, are aware of cultural-specific considerations that surround the topic of heat-related illness. Such as reporting lightheadedness to a work crew leader may be a sign of weakness or equated with effeminate behavior, not keeping with the tradition of machismo (Culp, Tonelli, Ramey, Donham, & Fuortes, 2011). Another example Sarah Horton gave about the importance of cultural competence is that, if an employee is undocumented they are less likely to inform a supervisor that they need a break or if they become ill because they are vulnerable to employer retaliation and charges of identity theft (as cited in “It’s not just the heat…”, 2016). Many employers use the “piece rate” of pay which is an incentive to increase crop production, which also has a direct correlation of increase HRI among farmworkers (Spector et al., 2015). ¡Salud! Services have a very good relationship with the community it serves and they are culturally aware of the needs of this population, so it makes perfect sense for them to deliver this safety program.

**Relationship between Employer/Employee**

The employers must make a commitment for all of the pieces to work, and for this intervention to be very successful. Arbury and colleagues (2014), discussed the importance of employers being aware of the importance of all elements of their heat illness prevention programs: acclimatization of new workers, designating a person to develop, implement and manage the program, monitoring the temperature, providing water and rest breaks that are in the shade, modifying work schedules to reduce overexposure to heat, training workers on the signs and symptoms of heat illness, monitoring workers for signs of heat stress and planning for emergencies and response. The employer must show the employees how important their safety and well-being is to them. It is suggested that farm managers should be required to take proactive measures to conduct ongoing risk assessments and health education while implementing engineering and administrative controls to reduce unnecessary deaths and prevent HRI for agricultural workers (Kearney et al, 2016). It is the employer’s responsibility to encourage workers to drink sufficiently to maintain hydration, to ensure water availability, to facilitate worker access, to provide regular rest breaks of appropriate duration for the work conditions, and to monitor workers for signs of illness. A worker is more likely to drink water if it is suggested or insisted. Having ¡Salud! create some incentives for employers maintaining this relationship between themselves and their employees could be the key factor in employers staying in compliance with policy changes and reducing heat related illness.

**PROGRAM ACTIVITIES**

The proposed intervention aims to decrease HRI among migrant and seasonal farmworkers of Oregon through state policy change and the ¡Salud! Heat Safety Program. ¡Salud! Services will
implement the first part of the proposed intervention until Oregon-OSHA can create and implement the new HRI policy changes. ¡Salud! Services will hire and train college interns to help with this program. The interns and ¡Salud! staff will educate employers and employees about HRI and create an infrastructure program with each employer. After the training, employees and employers will be tested on what they learned and will be documented. The whole process and observations will be documented by ¡Salud! Services to maintain transparency and efficiency. The interns will be going out daily, visiting different wineries and vineyards to make sure the employers are following the new infrastructure HRI program along with shade structures, hydration stations, and monitoring employees lunch breaks and shade-breaks. If the employer is not providing the necessary conditions for the employees, it will be documented by the interns. If the interns go out to a site a second time and they are not following the program, ¡Salud! Services will help restructure the HRI infrastructure plan to make it work for that site. If there are any complaints from employees, the ¡Salud! staff will encourage the employee to make a statement with the proper authorities such as OSHA. ¡Salud! will help them access the information on how to report, where to report, and to whom they should make the report. This will ensure a continued neutrality between, ¡Salud! Services, the employer, and employees. At the same time ¡Salud! Services will be keeping with their goals by supporting the employee by reducing barriers, creating access, provide guidance, health/occupational education, and to advocate for their basic needs. The ¡Salud! Heat Safety Program will begin on January 1, 2018, by hiring and training interns, later to start the program with the vineyards/wineries on March 1, 2018, and continue through harvest season around the last parts of September/October. The ¡Salud! Heat Safety Program will operate on a seasonal basis along with their other programs they offer to the vineyards/wineries. To ensure employer cooperation and compliance, ¡Salud! Services will offer incentives that include prestigious awards and recognition through the Oregon Wine Board, OSHA, and at the annual Oregon Wine Symposium Conference. Oregon-OSHA shall also begin writing up drafts for the new policies on January 1, 2018. Since Oregon-OSHA has their own procedures for a new policy or amending current policies, they will set their own timelines, partners, and activities. Cal-OSHA a key partner in this program, will be advising Oregon-OSHA during the drafting of new policies for HRI. Oregon-OSHA will use Cal-OSHA’s model of best practices because they have been successful with their own HRI policy amendments in 2015. Some of the intervention activities will be:

- ¡Salud! Heat Safety Program will train employers and employees about heat-related illness
- ¡Salud! Heat Safety Program will set up shade structures and hydration stations
- Oregon-OSHA will write new policies to help prevent heat-related illness and regulate them
A few of the S.M.A.R.T objectives of the proposed intervention are:

- 90% of farmworkers can correctly list the warning signs of HRI by October 2018
- 90% of employers can correctly list the warning signs of HRI by October 2018
- 75% of employers will have 80% compliance of their infrastructure programs by October 2018
- Oregon-OSHA draft and implement new HRI policies by January 2019
- Reduce HRI of migrant and seasonal farmworkers of Oregon by 75% by October 2020

The logic model on the following page demonstrates the relationships among program components.
<table>
<thead>
<tr>
<th>Inputs / Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Short-term outcomes</th>
<th>Long-term outcomes</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds</td>
<td>Write federal grant to address occupational health hazard-HRI</td>
<td>Grant money awarded for ¡Salud! Heat Safety Program</td>
<td>Sustainability of ¡Salud! Heat Safety Program</td>
<td>Better partnerships with vineyard &amp; winery employers and employees</td>
<td>¡Salud! Services maintains good relationships within community</td>
</tr>
<tr>
<td>Partnership w/¡Salud! Services</td>
<td>Hire college interns &amp; train to help run ¡Salud! Heat Safety Program</td>
<td>5 college interns trained for ¡Salud! Heat Safety Program</td>
<td>Sustainable heat safety program and college interns gain experience</td>
<td>Better partnerships with local colleges</td>
<td></td>
</tr>
<tr>
<td>Partnership w/Cal-OSHA</td>
<td>Advise Oregon-OSHA</td>
<td>Research and advising</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partnership w/Oregon-OSHA</td>
<td>Work with Cal-OSHA and others to draft new policy changes</td>
<td>Better practices adopted to draft better policies for HRI in Oregon</td>
<td>HRI policies are drafted for approval</td>
<td>HRI policies in Oregon changed</td>
<td>Decrease in HRI among migrant and seasonal farmworkers in Oregon</td>
</tr>
<tr>
<td>Employers of vineyards/wineries</td>
<td>Educate employers on HRI and create infrastructures</td>
<td>40+employers educated on HRI</td>
<td>Knowledge increased</td>
<td>Attitudes change and are more committed to employee’s well-being</td>
<td></td>
</tr>
<tr>
<td>Employees of vineyards/wineries</td>
<td>Educate employees on HRI</td>
<td>2500+employees educated on HRI</td>
<td>Knowledge increased</td>
<td>Behaviors change and are able to recognize the signs of HRI and protect themselves and co-workers</td>
<td></td>
</tr>
<tr>
<td>HRI curricula/materials</td>
<td>Order curricula/materials in Spanish/English</td>
<td>2500+HRI curricula/materials distributed</td>
<td>Testing scores increased</td>
<td>Sustained changes in employees &amp; employers</td>
<td></td>
</tr>
<tr>
<td>Shade structures &amp; hydration Station</td>
<td>Order materials for shade structures &amp; hydration stations</td>
<td>Shade &amp; hydration provided for 2500+ employees</td>
<td>Employees hydrate more &amp; take more cool-down breaks and less HRI</td>
<td>Employees work safer and reduce HRI even more</td>
<td></td>
</tr>
</tbody>
</table>

**REFERENCES**
Adam-Poupart A., Labrèche F., Smargiassi, A., Duguay, P., Busque, M.A., Gagné, C.,
Rintamäki, H., Kjellstrom, T., & Zayed, J. (2013). Climate change and occupational health and
safety in a temperate climate: potential impacts and research priorities in Quebec, Canada.
Industrial Health, 51(1), 68-78.

August 8). Heat illness and death among workers-United States, 2012-2013. Morbidity and
Mortality Weekly Report. 63(31), 661-665. Retrieved from
http://cdc.gov/mmwr/preview/mmwrhtml/mm6331a1.htm

farmworker residential pesticide exposure: Evaluation of lay health advisor intervention. Health
Promotion Practice, 10(3), 447-455. DOI:10.1177/1524839907301409

1325-1330

International Journal of Environmental Research and Public Health. 11, 9273-9285. DOI:
10.3390/ijerph110909273

from http://www.thecalifornian.com/story/news/2016/04/12/calosha-working-prevent-heat-
illness/82923906/

Centers for Disease Control. (2008). Heat-related deaths among crop workers---United states,


