



# Center for Worker Health

Wake Forest School of Medicine

## POLICY BRIEF

### Heat Illness Experienced by North Carolina Farmworkers

#### Summary

Heat exposure is a significant hazard for workers in manual occupations, including farmworkers. Yet little is known about the number of North Carolina farmworkers who experience heat illness. This study delineated the prevalence of heat illness among farmworkers, and actions farmworkers took to reduce the effects of heat. In August 2013, 101 North Carolina Latino male farmworkers completed interviews in which they reported on heat exposure and behaviors over the previous 3 months while working outdoors. Over a third of farmworkers reported heat illness. To reduce the effects of heat, farmworkers reported taking breaks in the shade and drinking more water. Fewer farmworkers took breaks in air-conditioning, or changed work hours or activities to reduce the effects of heat. Over a quarter of the participants spent their after-work time in housing that was extremely hot. Policy addressing heat illness is needed.

#### Why does it matter?

Heat illness occurs when high temperatures and humidity limit the body's ability to cool itself. Heat cramps, heat exhaustion, and heat stroke are three forms of heat illness. Many North Carolina farmworkers experience heat illness and several die from heat each year; over the period 1992-2006, almost 2.5 for every 100,000 North Carolina farmworkers died of heat illness (MMWR 2008; <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5724a1.htm>). Symptoms that indicate heat illness include hot and dry skin, sudden muscle cramps, dizziness, confusion, and nausea or vomiting.

Heat illness can be prevented through purposeful hydration (drinking water at the rate of half a liter every thirty minutes) and deliberate cooling of the body (resting in shade or air-conditioned areas). Changes in when tasks are undertaken (early or late in the day rather than in the middle of the day) can also reduce overheating. However, only two states, California and Washington, currently have policies requiring agricultural employers to address heat illness prevention.

#### What did the researchers do?

In August 2013, researchers interviewed 101 Latino male migrant farmworkers working in three North Carolina counties (Harnett, Johnston, Sampson). Farmworkers were asked about working and living conditions, the occurrence of heat illness symptoms in the previous 3 months while working outdoors, and behaviors to reduce the effects of heat illness. A farmworker was considered to have heat illness if he reported experiencing any of the symptoms of hot and dry skin, sudden muscle cramps, dizziness, confusion, or nausea or vomiting.



#### Research for this policy brief is reported in:

Arcury TA, Summers P, Talton JW, Chen H, Sandberg JC, Spears Johnson CR, Quandt SA. Heat illness among North Carolina Latino farmworkers. *J Occup Environ Med*. In press.

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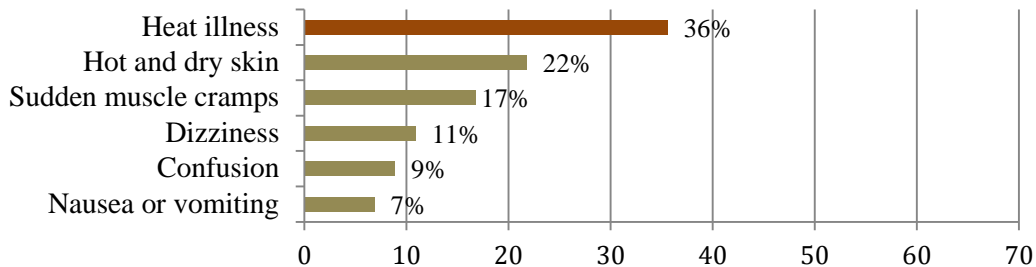
## What did the researchers find?

### *Heat Exposure*

- 68% of farmworkers reported having worked outdoors in extremely hot weather conditions in the previous 3 months.
- 27% reported spending after-work time in housing that was extremely hot.

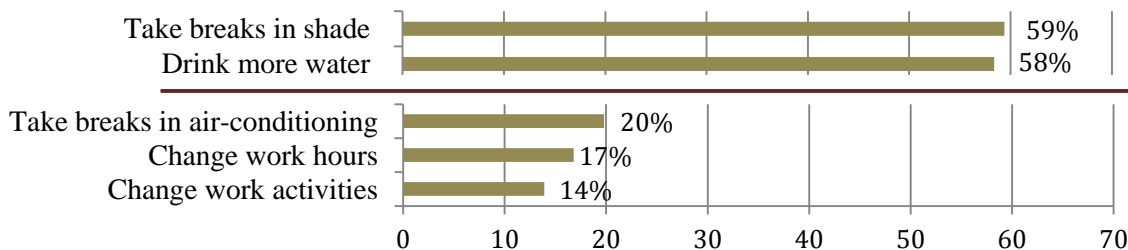
### *Heat Illness and Symptoms*

- 36% experienced heat illness, with hot and dry skin, sudden muscle cramps, and dizziness being common symptoms.



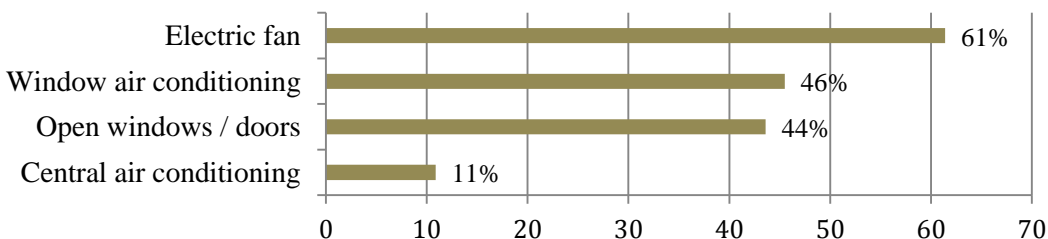
### *Reducing the Effects of Heat While Working Outdoors*

- The behaviors that most farmworkers used to reduce the effects of heat were those that they could control: taking breaks in the shade and drinking more water.
- Few took breaks in air-conditioning, changed work hours, or changed work activities, behaviors over which they had little control.



### *Reducing the Effects of Heat at Home*

- Most farmworkers used electric fans to cool their houses; fans move hot air, rather than cool the air.
- A substantial number of farmworkers had access to air conditioning.



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## Recommendations

- Policies that empower farmworkers to guard themselves against heat illness are needed.
- Enforcement of current regulations (OSHA Field Sanitation Standards) should be increased to ensure that workers have access to water when working.
- Labor camps should be required to have air conditioning.
- California's Cal/OSHA Heat Illness Prevention Standard (<http://www.dir.ca.gov/dosh/heatillnessinfo.html>) provides a policy framework; the California policy has been implemented, evaluated, and proven to reduce deaths. This standard includes:
  - Training all employees and supervisors about heat illness.
  - Providing enough fresh water so that each employee can drink at least 1 quart per hour, and encouraging them to do so.
  - Providing access to shade and encouraging employees to take frequent cool-down breaks in the shade for at least 5 minutes; they should not wait until they feel sick to cool down.
  - Developing and implementing written procedures for complying with the regulations.