RESEARCH SERIES

EARTHQUAKE EARLY WARNING IN SCHOOLS

The **ShakeAlert® earthquake early warning (EEW) system**, managed by the U.S. Geological Survey (USGS), is the first public alert system in the nation to provide rapid mass notification when an earthquake is detected. Although widespread mobile phone alerts began in California in 2019 followed by Oregon and Washington in 2021, little was known about what drives successful implementation of EEW in institutional settings such as schools.

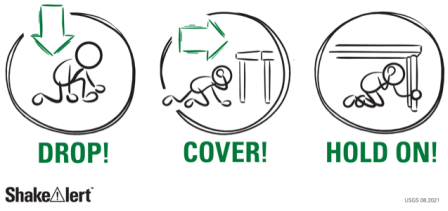
SCAN FOR PUBLICATIONS

METHODS

To address this gap, we conducted a mixed methods study on how K-12 schools in earthquake-prone areas can best adopt and implement EEW. Phase 1 involved interviews with 118 K-12 school administrators, teachers, parents, students, emergency managers, building officials, and engineers in Anchorage, Alaska (Jan. 2020) and Ridgecrest, California (Feb. 2020). Phase 2 involved an online survey of school district superintendents in Alaska, California, Oregon, and Washington in Spring 2022.

"I can see in schools, especially with little kids, if you have that 10 seconds, you can get everybody under their desks a lot quicker than waiting to see...Thinking about kids who are kindergarten, first, second, third [grades]—they might be a little bit more scared, nervous, not know what to do. That 10 seconds helps that teacher get those kids safe and secure. I think that's very beneficial."

- School Emergency Manager,



KEY FINDINGS

Phase 1: Qualitative Findings

» Participants were enthusiastic about the possible adoption of EEW in schools but had questions related to how it works and how much it costs.

» They emphasized the importance of messaging that conveys correct protective actions and a need to integrate EEW into existing school drills.

» Adults sometimes acted on the outdated earthquake education they received as children, which led to conflicting messages and confusing behavioral cues for children.

Phase 2: Quantitative Findings

» Across the four states, only 38% of school superintendents had previously heard of ShakeAlert. Awareness was highest in Oregon (56%).

» The greatest barriers to implementation were related to funding availability and concerns about reductions in available mitigation funds.

» The greatest perceived benefit of EEW was that it could allow students, teachers, and staff time to drop, cover, and hold on. Respondents also believed that EEW could enable school staff to help children take protective action and mentally prepare for shaking.

IMPLICATIONS FOR PRACTICE Although ShakeAlert awareness levels are low, participants recognize the system's potential to facilitate lifesaving protective actions in schools. More robust communication strategies are needed to inform school district leadership about EEW availability, system cost, and funding support. EEW implementation also needs to be coupled with regular drills that involve both students and school staff.

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