Respirable Crystalline Silica Control Measures and Medical Surveillance Activities From Workplace Survey of U.S. Engineered Stone Countertop Fabrication Facilities

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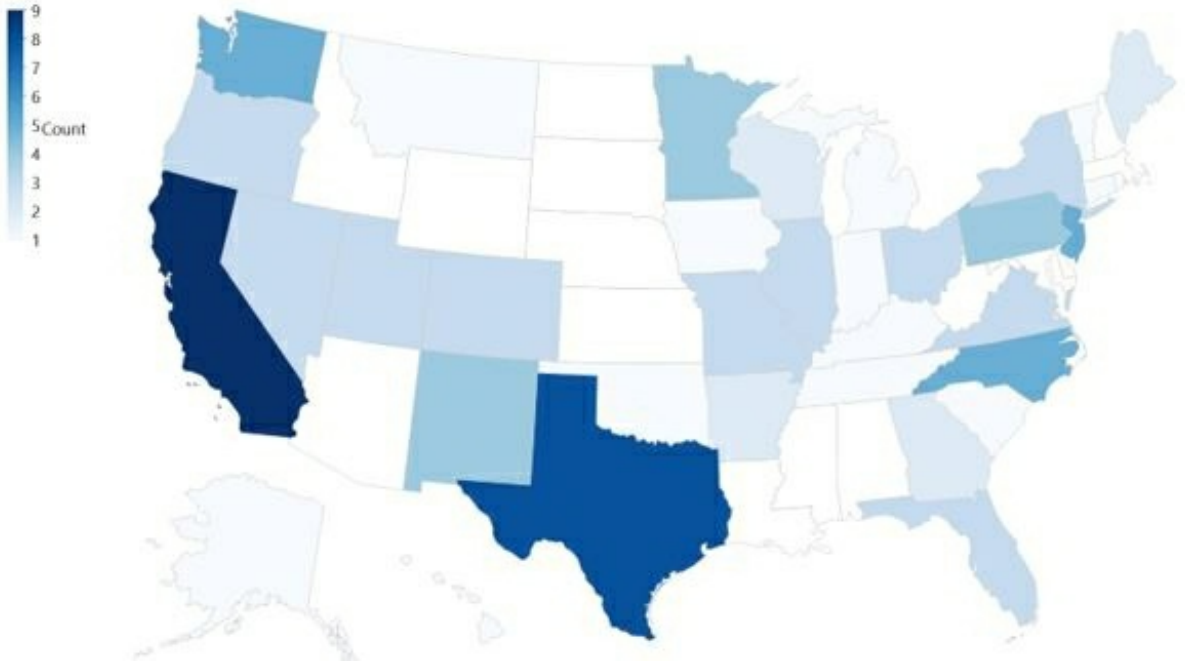
Rationale: Engineered stone (ES) countertop fabrication workers exposed to respirable crystalline silica (RCS) dust can develop silicosis, an irreversible and potentially fatal work-related lung disease. More than 50 cases of silicosis have been described among ES fabrication workers in Southern California since 2023, leading to emergency changes to silica regulations in the state. Silicosis cases have been reported in ES fabrication workers in other states, although the potential burden of disease nationwide is unknown. Countertop fabrication industry practices vary widely in terms of RCS control measures and adherence to medical surveillance requirements in the Occupational and Safety Health Administration (OSHA) silica standard. To better understanding industry practices, we surveyed U.S. countertop fabrication facilities.**Methods:** Beginning January 2024, an electronic survey was distributed by email in batches to U.S. companies identified in a database of countertop fabrication facilities or related industries. Survey questions included facility-level workplace characteristics, materials used, RCS control measures, medical surveillance activities, and awareness of the OSHA silica standard and Occupational Exposure Limits (OELs). Survey data were collected and managed using REDCap (Research Electronic Data Capture) tools; analyses were performed using JMP® 15 (SAS Institute., Cary, NC).**Results:** The survey has been distributed to 10,100 email addresses with 124 total responses as of October 2024, including 96 (77%) countertop fabrication companies. Facility locations covered 34 states, with the most in California (n=9) followed by Texas (n=8) (Figure). The median number of total workers was 16 (range: 1–130 workers); 8% reported temporary workers. From 50 complete responses, all reported fabricating both ES and natural stone countertops with 90% reporting increased ES use since 2019. Commonly reported RCS control measures included wet methods (96%), natural ventilation (56%), general exhaust ventilation (54%), and local exhaust ventilation (21%); 38% reported using some dry work. Most (65%) reported respiratory protection use, most frequently NIOSH Approved® N95® respirators (61%) and half-face respirators (42%); 60% reported respirator fit-testing. Most (82%) were aware of the OSHA silica standard, although 21% performed spirometry and 13% provided chest radiographs to fabrication workers. Less than half (43%) conducted air sampling for RCS; of those, 17% reported RCS results above the OEL.**Conclusion:** Despite the low response rate, our survey results from countertop fabrication facilities nationwide reiterate concerns known to contribute to RCS exposure and potentially the risk of developing silicosis among fabrication workers, such as dry work during fabrication and variable respiratory protection use and medical surveillance activities.

Figure: Count of Responding Countertop Fabrication Facilities by State, N=94



This abstract is funded by: NIOSH, CDC

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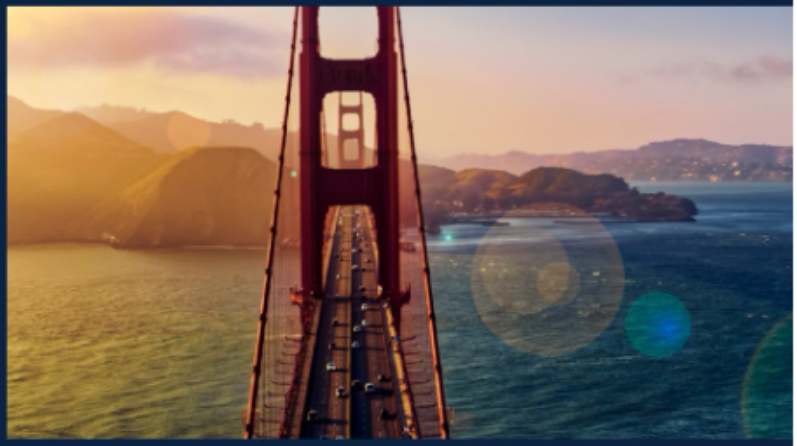

American Journal of Respiratory and Critical Care Medicine

Vol 211
May 1 2025

ABSTRACT ISSUE

ATS 2025
San Francisco, CA | May 16-21