

## *NIOSH Alert: Preventing Occupational Exposures to Lead and Noise at Indoor Firing Ranges*

### Summary of External Peer Reviewer comments

The Alert was reviewed by 9 external reviewers from academia, government, industry, and professional organizations. No major structural changes to the Alert were required to address the external reviewers' comments. Most of the reviewers' suggested editorial and content modifications to the Alert to improve its clarity and accuracy. The major changes recommended are summarized below:

- Expand the OSHA standard on Lead to include information regarding biological monitoring and medical surveillance. One reviewer felt that the OSHA requirements are weak and NIOSH should recommend more stringent monitoring requirements in the Alert based on recent scientific findings.
- Expand on the details provided on several of the case reports. Several reviewers indicated that some case studies may not be representative of actual conditions inside firing ranges and requested more information on the recommendations provided to alleviate the risks from exposure to lead and noise.
- Improve the section on ammunition substitution to include information on frangible bullets. Two reviewers indicated that the ammunition substitution section can be improved by discussing recent developments and commercial use of new types of bullets with low or no lead emissions.
- Improve the engineering controls recommendations to include information on new state of the art backdrop systems and the use of electronic simulation.
- Include information about work practices in the hierarchy of controls recommendations section. Two reviewers felt that work practices should be incorporated more tightly into administrative controls.
- Expand on exposure and medical health monitoring by including additional sections from the OSHA 1910.1025 to provide more details on employee monitoring and medical surveillance.
- One reviewer felt that the Alert did not address the issue of cost and economic feasibility of the recommendations provided in this Alert, especially for smaller firing ranges and whether the costs associated with implementing some or all of the recommendations would be economically prohibitive.