AIHA Comments on Needs and Challenges in Personal Protective Equipment (PPE) Use for Underserved User Populations

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Dear Dr. Howard:

AIHA, representing approximately 8,500 occupational and environmental health and safety professionals, supports efforts to provide PPE for all user groups – particularly underserved populations. Below is lightly edited and anonymized feedback we received from our members in response to the National Institute for Occupational Safety and Health’s (NIOSH) request for information on the needs and challenges of PPE use for underserved user populations. The below feedback is from AIHA’s Women in Industrial Hygiene (WIH)¹ volunteer group and build on the comments² we submitted to NIOSH on July 16, 2021 in response to this request for information.

Please describe your experiences related to PPE use, availability, accessibility, acceptability, and knowledge issues for underserved PPE user populations within the U.S. (e.g., individuals of small or large size; members of gender, racial, ethnic or other minority group of a specific occupation, non-traditional workers, etc.) Individuals with religious or cultural beliefs must be considered, such as those who may wear a turban, hijab, or long skirts. PPE needs to fit the individual worker and be effective. Additionally, employees with disabilities need to be considered. Standard PPE may not fit properly due to physical limitations of the human body. Disabilities may exist from birth, acquired, or be age related. Readily available, accessible, and proper fitting PPE is key for everyone, and one size does not fit all.

¹ WIH provides a platform for professional women to support career development, promote leadership skills, and to share information relevant to women working in industrial hygiene. For additional information, please visit https://www.aiha.org/get-involved/volunteer-groups/women-in-ih
Often women are forced to wear men’s uniform in a smaller size, conforming to the standard male size and shape. Ultimately, reducing the size of standard PPE rather than properly sizing PPE can create hazards due to improper fit. This will be the case for most PPE such as hard hats, gloves, boots, flame retardant clothing, hearing protection, and eye protection.

Please describe PPE gaps/barriers that remain to be addressed for underserved PPE user populations within the U.S. related to PPE use, availability, accessibility, acceptability, and knowledge issues (if any).

Vendors in general do not feel compelled to supply more size options (such as smaller/petite or larger/XXX) or women’s cut PPE due to what is considered a small market. Vendors and manufacturers will supply this PPE as custom orders, but often only at high prices and long lead times. Typically, PPE needs are immediate, but difficult to source in short timeframes.

PPE is simply not accessible in some geographic areas, and people are limited to whatever they can find. Some companies only stock the “most common” sizes.

What PPE research gaps/barriers remain to be addressed?

- **PPE Standardization:** What standards are being used for the “average” man and woman? The average person has changed over the last 40 years in physical size, ability, and lung capacity.
- **Glove size standardization:** Overall PPE fit issues can cause hazards due to finger size, length and/or reduced dexterity
- **Poor fit of PPE can cause hazards due to “universal” sizing of many PPE. PPE hazards can include a lack of coverage (too small), slippage or getting “caught in/by” from being too long, being painful to wear if not fitted properly, or be too heavy for smaller body structures. Common examples where PPE fit is difficult include chemical booties/shoe covers, aprons, gloves, level A suits, spat leggings, eye protection, hearing protection, helmets, PAPR hoods, and welding hoods.
- **PAPR hoods are one size, which does not always allow the hood to turn when one’s head turns due to fit (too large).**
- **Welding helmets are one size as well, which can be difficult for women or those with smaller body frames.**
- **PPE availability across all life stages and pregnant employees, including fall protection.**
- **Materials that are lighter, yet more protective.**
- **Hard hats can be difficult to fit depending on how one may wear their hair. The appearance of hair styles can vary based on cultural, racial and ethnic backgrounds.**
- **Coveralls and body garments rarely fit properly due to body frame and structure.**
- **Fire retardant clothing cannot be altered once purchased. This is a limitation on its own for individuals with varying body height and dimensions. Having styles cut for females vs. males is an area where additional research is needed.**
- **Fire retardant clothing is an issue for women undergarments, when these are often times made with metal and/or elastic.**
What PPE service gaps/barriers remain to be addressed?

- Glove size options.
- Flame resistant PPE in extended sizes, particularly smaller and women’s sizes or affordable/safe alteration options for these sizes (FR thread).
- Safety shoe selection for women.
- ESD rated safety shoes for individual who require sole inserts for medical reasons.
- Coveralls/uniforms in maternity sizes.
- Chemical and flame-resistant clothing to fit individuals on extreme ends of the “bell curve” spectrum due to height, weight, body dimensions, and disabilities.
- Making PPE more affordable and available for consumers. This would help to eliminate a bias toward buying one style of PPE to fit all.

What PPE policy gaps/barriers remain to be addressed?

Hiring discrimination, bias, and not taking a job due to PPE (or lack thereof) is a problem. Creating PPE for women or customizing PPE for individuals can be costly, which is what normally causes underserved populations to be forced into standard PPE that may not fit properly. Companies do not always want to invest in their employees in this regard. In an interview process, or even in a promotional situation, this factor could be what keeps someone from getting a job versus the average person. For those that do get hired, the poor fitting PPE becomes a safety hazard as these employees would be more likely to get injured (e.g., being pulled into equipment with loose fitting clothes, ear plugs that do not fit properly due to the difference between male and female ear canals causing potential increased incidence of hearing loss).

Many chemical plants continue to ban the use of contact lenses due to potentially outdated recommendations while handling hazardous chemicals with the potential for eye exposures. Further research and updated recommendations are needed in this area to ensure employees who medically require glasses and/or contact lenses have the appropriate eyewear options to do their jobs safely.

Automatically giving women pink PPE with butterflies and flowers is not acceptable. If men are given a choice for the color of their PPE, then so should women. This makes women stick out in the workplace rather than giving equality.

PPE should not only be provided, but assurance must be made for proper fit and comfort to ensure employee acceptance. It seems to have become a standard practice that we live with ill-fitting PPE because availability is an issue. One size does not fit all. One size fits most is not necessarily true either. PPE should be made to fit the worker, rather than forcing everyone to fit the same PPE. This can be achieved by providing more customizable PPE downstream for users or incentivizing manufacturers to extend their products to bell curve outlier populations.
**Conclusion**

AIHA thanks you for the opportunity to provide feedback from our members on the needs and challenges of PPE use for underserved user populations. If you have any questions about our comments or would additional information, please contact Mark Ames at mames@aiha.org or (703) 846-0730.

Sincerely,

Lawrence Sloan, MBA, FASAE, CAE
Chief Executive Officer
AIHA

**About AIHA**

AIHA is the association for scientists and professionals committed to preserving and ensuring occupational and environmental health and safety in the workplace and community. Founded in 1939, we support our members with our expertise, networks, comprehensive education programs, and other products and services that help them maintain the highest professional and competency standards. More than half of AIHA’s nearly 8,500 members are Certified Industrial Hygienists and many hold other professional designations. AIHA serves as a resource for those employed across the public and private sectors as well as to the communities in which they work. For more information, please visit [www.aiha.org](http://www.aiha.org).