

WELDERS FOR WELDERS

A PROPOSAL



Informal, unprotected welder

A program that promotes the community of workers by enabling welders in the formal sector to support the health and safety of welders in the informal sector.



Formal, protected welder

Project Team

Robin Nicholas¹, Ashish Mittal², Tor Erik Danielsen³,
Mahinda Seneviratne⁴, Inakshi Naik⁵

INTRODUCTION

This program will create a means for welders who are already well-supported and protected in the formal sector, to help welders who are unsupported in the informal sector in India. Simply, well-protected welders will be able to donate personal expertise, small or large funds, and new or used equipment to support the health and safety of unprotected welders.

METHODS AND TRIAGE

The primary tool for this program is triage — starting where we are with what we have. The program will bring together safety experts to translate knowledge and culture by listening, asking questions, and advising welders. Then, a form of triage will be developed for each situation, adapting the hierarchy of controls to the available resources and the work culture.

Triage — Sample template for welding and fumes

Activity: Welding, acetylene		
Hazard: Fumes; respiratory hazards		
Available resources	Health and safety practices	Investment
↑ Protection	Best resources Targeted exhaust ventilation (Local exhaust ventilation) or Adjustable capture hood (Local exhaust ventilation)	One-time + small recurring
	Secondary resources Welding helmet with PAPR (PPE)* or Cartridge air-purifying respirators (PPE) and/or Exhaust fan to help remove toxic fumes from an enclosed or partially enclosed worksite (Mechanical dilution ventilation)	Variable/ recurring
	Minimal resources Moving the operation outside for better fresh air ventilation, if possible (Natural dilution ventilation) Surrounding community must be considered. and Awareness and training	Variable/ recurring

*PAPR - Powered air-purifying respirator / PPE - Personal protective equipment

INFORMAL WELDERS – A CASE STUDY



Informal welders in the case study

23 informal welders were interviewed to understand their perspectives and experiences at work. 18 welders work solo operations; 5 work

together in a single shop. All the welders are male and work in New Delhi. In general, it is a young workforce; although ages range from 20-55 years, the mean age is 31 and the median age is 28. All the welders work in enclosed or semi-enclosed work spaces with no added ventilation or respiratory protection. Most welders work on the floor with poor ergonomics and no protective clothing. Eye protection is minimal.

Key elements of the case study

Informal welders — Initial interviews		
Key health and safety experiences	Welders	
	No.	%
Eye pain both during and after work	13	57%
Skin burns – mostly on their hands <i>None of the welders used protective clothing.</i>	6	26%
Body pain – mostly back pain plus neck and arm pain <i>All the welders worked on the floor with poor ergonomics</i>	12	52%
Electrical shocks <i>Only 8 (39%) were able to prevent future shocks.</i>	14	61%
Written and predictable contract for their work	0	0%

Further exploration is needed to determine potential breathing problems, body pains, and headaches due to fumes and other causes.

EXPECTED RESULTS AND TECHNOLOGY TRANSFER

The initial program will start small to allow flexibility and self-evaluation. A triage template will be developed that identifies safety needs prioritized and balanced by considering available resources. Technology transfer of tools and information will be shared through a website, media, an app, training institutes, workshops, and conferences. Short training videos made by welders for welders can provide safety instructions. To go beyond limits of text and literacy, simple graphics without text can be developed to illustrate single safety steps.

CONCLUSION

Ultimately, a health and safety triage template and other tools can be developed and made available for others to adapt to their own needs. In the future, Welders for Welders could be applied to other skills in a broader context. By bridging two work environments, the proposed Welders for Welders program has the opportunity to promote a community of workers, with welders helping welders.

CONTACT

Robin Nicholas
Robin Nicholas Communications, Santa Fe, NM / USA
Email: robin.m.nicholas@gmail.com
Mobile: +1 505 660 0787

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¹Robin Nicholas Communications, Santa Fe, NM, USA, ²Management Consultancy Services–OHS, New Delhi, India, ³Norwegian Labour Inspection Authority, Oslo, Norway, ⁴SCOHSSEIS, Pennant Hills, Australia, ⁵NIOH South Africa (Formerly), Johannesburg, South Africa