



The Boston Safe Shops Model: An Integrated Approach to Community Environmental and Occupational Health

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KEY FINDINGS

- Culturally and linguistically appropriate technical assistance can entice hard-to-reach small businesses to improve their environmental practices and become good neighbors.
- Small businesses benefit from comprehensive help that can address their environmental and occupational health and safety, business finances, and health care concerns from one source.
- Public health agencies can play a pivotal role in coordinating a broad community partnership to creatively address the multiple and common needs of immigrant-owned small businesses.
- Small neighborhood shops can adopt advanced pollution prevention strategies and improve compliance with housekeeping and hazardous waste management requirements.

Small, immigrant-owned businesses, such as auto repair shops and nail salons, often face barriers to environmental and occupational health compliance and may be a source of neighborhood pollution complaints. The Boston Public Health Commission established the Safe Shops Project to improve safety and environmental practices in such businesses using a community partnership model that incorporates enforcement inspection findings, worker training, technical assistance, and referral to health care and business resources. This integrated technical assistance approach has led to improved occupational health and environmental conditions, adoption of pollution prevention technologies, novel problem-solving, and dozens of health screenings and insurance referrals for workers and their neighbors. (*Am J Public Health*. 2010;100:S52–S55. doi:10.2105/AJPH.2009.176511)

IN 2004 THE BOSTON PUBLIC

Health Commission received federal funding to create the Safe Shops program to help improve safety and environmental practices in small businesses, beginning with Boston's predominantly immigrant-owned auto body and repair shops located in low-income neighborhoods.¹ With additional funding in 2007, the Safe Shops model was extended to the nail salon sector. These sectors were chosen because of their similar potential hazards and because of the Boston Public Health Commission's connections to community organizations concerned about these businesses' environmental and occupational health impact. Our experience and the literature show that small businesses need and benefit from integrated and comprehensive approaches to the occupational and environmental health issues.^{2–4} Safe Shops'

bilingual and bicultural staff provide training and technical assistance to help shops make fundamental and lasting changes to improve shop conditions, become better neighbors, and model environmental leadership to raise standards citywide.

The program draws on the guidance and resources of a broad stakeholder group of program partners including environmental enforcement agencies, small business assistance centers, academic partners, local health centers, public health agencies, and community organizations to comprehensively address and integrate both business and community concerns. It has a staff of 4 (3 outreach workers and a coordinator) on an annual budget of approximately \$250 000 in grants from the Centers for Disease Control and Prevention, the US Environmental Protection Agency, and the Blue Cross Blue

Shield Foundation in addition to some city support.

Participating businesses generally have been referred by Boston's enforcement agencies or come to the program through door-to-door solicitation by an outreach worker. Following a business owner's agreement to participate, Safe Shops field staff conduct walk-through assessments, provide training sessions in individual businesses on best practices and technology for worker protection and pollution prevention, and work with owners to develop an improvement plan. They also assess worker and owner needs for health care, business loan assistance, and child care resources. Project staff facilitate connections to available resources such as free basic health screening events for workers and neighbors of participating shops, small business coaching, or technical assistance



Safe Shops participant Supreme Auto Center purchased several specialized spray guns that eliminate paint overspray and reduce the amount of airborne hazardous chemicals.

- Shops meeting cleanliness standards increased from 75% to 100%.

Jack Tracy, Principal Health Inspector for the City of Boston, believes that the Safe Shops project has led to dramatic improvements in the auto shop sector. According to Tracy:

Before Safe Shops, auto repair shops in Boston were generally a disaster. The standards have come up across the board and our enforcement actions are much reduced. I believe that the improvements will stick. It used to be that we would hit a shop with a list of violations and repeat visits would find the same problems all over again. Safe Shops has helped businesses maintain their improved practices.

with new equipment. Progress is evaluated through pre- and postintervention shop inspections and worker knowledge and practices surveys as well as documentation of significant improvements or problems by project staff.

All Safe Shops materials needed to replicate the project, including a “Safe Shops Tool Box for Auto Shops,” a training video available in English or Spanish, and a “Safe Nail Salon Training Program,” are available for free through the project’s web sites (<http://www.bphc.org/safeshops> and <http://www.bphc.org/safenails>). Subjects include pollution prevention techniques, emergency preparation and response, hazardous waste storage and disposal, personal protective equipment, and housekeeping.

SAFE SHOPS PROJECT

Table 1 shows the project’s programmatic activities and accomplishments. One of the unique aspects of this project is

the close collaboration between the city’s environmental health enforcement staff and the Safe Shops outreach personnel. The project provided information on shop locations to enable city inspectors to visit more shops in less time. One hundred twenty-nine auto shops were visited by city inspectors who distributed Safe Shops project materials and made referrals for training with the Safe Shops project. These inspectors also conducted environmental audits to provide the project with performance data. Preliminary data are available for 20 auto shops that received intensive training by Safe Shops project personnel. Pre- and post-training audits show the following improvements in environmental compliance in trained shops:

- Compliance with lab waste area containers increased from 45% of shops to 85%;
- Shops properly labeling waste oil, antifreeze, paints, and solvents increased from 30% to 85%;

- Shops in compliance with labeling and closing of lids for solvents and parts cleaners increased from 35% to 80%; and

A key, though challenging, goal of the Safe Shops Project is to facilitate the adoption of pollution prevention technologies among participants. Ten auto



Safe Nail Shops project worker Nancie Nguyen instructs salon workers in Vietnamese. A local seamstress was recruited to make attractive covers to promote adoption of proper respiratory protection.

shops have adopted greener equipment and practices including switching to aqueous brake cleaner in place of perchloroethylene (a probable human carcinogen), using a US Environmental Protection Agency “Design for the Environment”—recommended paint gun cleaner that air samples showed reduced acetone and toluene levels in shop air by 94% and 88% respectively, and retrofitting a paint spray booth to use water-based paints to eliminate more than 1200 lbs of volatile organic compounds per year. Although the Safe Shops Project is proud of these accomplishments, it hopes to increase the diffusion of these excellent off-the-shelf technologies to more shops.

SAFE NAIL SALON PROJECT

In its first year (2007), in addition to the activities described in

TABLE 1—Boston Safe Shops Program Activities and Accomplishments, by Sector: Auto Sector, 2005–2008, and Nail Salon Sector, 2008–2009

Program Activity	Auto Sector, No. or No. (%)	Nail Salon Sector, No. or No. (%)
Shops listed or mapped ^a	557	156
Shops visited by outreach worker	287 (52%)	121 (78%)
Initial environmental assessments	196	32
Follow-up assessments	161	NA
Initial worker knowledge/practice surveys	331	63
Follow-up worker knowledge/practice surveys	112	NA
Shops visited by outreach worker that participated in pollution prevention and worker protection training	125 (44%)	13 (11%)
Personnel trained	668	97
Participating shops that switched to less toxic chemicals or made significant operational changes	29 (23%)	NA
Public outreach events	27	2
Participants (including neighbors) in free basic health screenings (blood pressure, cholesterol, body mass index, and so on)	369	18
Screened individuals referred to Mayor’s Health Line for insurance and connection with health care providers	70 (19%)	8 (44%)

Note. NA=not available.

^a Via public directories and sidewalk searches

Table 1, the Safe Nail Salon project surveyed products used in Boston nail salons and distributed material safety datasheets of

the 45 most common products to participating salons, trained 30 community health care providers in recognizing work-related

health issues for nail technicians, and made 5 salon referrals to a community partner that can provide child care and business development resources.

A major occupational health concern in nail salons is inappropriate personal protective equipment. A Boston-area community survey found that 90% of nail technicians wear infection control masks believing that these will protect them from dust and chemicals.⁵ The Safe Shops Project is educating nail technicians that they should instead use National Institute of Occupational Safety and Health–approved N95 dust masks with impregnated carbon for low-level solvent control. However, feedback from trainees suggested that these masks were not likely to be used because of their appearance. The Safe Shops Project set about to address this barrier to appropriate personal protective equipment by commissioning a



An auto repair worker demonstrates use of a new hydrophobic mop designed to facilitate recycling of waste oil and prevent neighborhood contamination.

seamstress to manufacture attractive covers for the N95 masks.

NEXT STEPS

The Safe Shops Project has been recognized as a model practice by the National Association of City and County Health Officials and the project partners are determined to share the model. It has already inspired similar programs in at least 6 other locations in the United States. The Project is working on gaining a dedicated funding stream in the City of Boston and on securing additional grants to expand the project to new industry sectors including dry cleaning, home painting and renovation, and cleaning and custodial industries. The Project staff recognize that, as currently designed, the project is quite labor intensive

and, therefore, staff are engaged in efforts to leverage activities to serve more shops. The partnership with an enforcement agency increased the performance and reach of both the Safe Shops Project and the enforcement agency and points to the opportunity for further citywide improvement at less cost. ■

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Contributors

C. Roelofs drafted the article. P. Shoemaker and T. Skogstrom designed and supervised the program and revised the article. P. Acevedo, J. Kendrick, and N. Nguyen conducted the outreach, collected data, and reviewed the article.

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Human Participant Protection

IRB approval was not obtained because the project outlined is not research but a public health program which included a program evaluation component. It therefore does not include any human participants and is exempt from human subjects protections. Program participation was voluntary and no personal

information was obtained from participants.

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