

Original Article

Awarding and promoting excellence in hearing loss prevention

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Abstract

Objective: To describe the rationale and creation of a national award to recognize and promote hearing loss prevention. **Design:** In 2007, the National Institute for Occupational Safety and Health partnered with the National Hearing Conservation Association to create the Safe-in-Sound Excellence in Hearing Loss Prevention Award™ (www.safeinsound.us). The objectives of this initiative were to recognize organizations that document measurable achievements and to share leading edge information to a broader community. **Results:** An expert committee developed specific and explicit award evaluation criteria of excellence in hearing loss prevention for organizations in different industrial sectors. The general approach toward award criteria was to incorporate current 'best practices' and familiar benchmarks of hearing loss prevention programs. This approach was reviewed publicly. In addition, mechanisms were identified to measure the impact of the award itself. Interest in the award was recorded through the monitoring of the visitor traffic registered by the award web site and is increasing yearly. Specific values and strategies common across award winners are presented. **Conclusion:** The Safe-in-Sound Award™ has obtained high quality field data; identified practical solutions, disseminated successful strategies to minimize the risk of hearing loss, generated new partnerships, and shared practical solutions with others in the field.

Key Words: Hearing loss prevention; hearing conservation; noise-induced hearing loss; occupational health and safety; recognition program

Occupational noise-induced hearing loss (NIHL) is a significant social and economic global burden. The condition is permanent, with no recovery currently possible. It persists despite decades of study, regulation, and workplace interventions. Prevalence rates for NIHL vary, with estimates ranging from about 7% of the population in Western countries to 21% in emerging and developing nations (Nelson et al, 2005). Veteran and worker compensation costs associated with occupational NIHL are considerable. Hearing-impaired workers are estimated to comprise nearly 50% of the adult workforce in the United States (NCHS, 1994) and are expected to increase with the aging of the US population. The serious consequences of hearing loss include decrements in a person's ability to communicate at work and in social and family settings. A survey of 2300 hearing-impaired adults, by the US National Council on Aging, found that those with untreated hearing loss were more likely to report conditions like depression and anxiety and were less likely to participate in social activities compared to those who wear hearing aids (1999). Hearing loss leads to job stress and decreased job performance (Het & Quoc, 1995; Reilly et al, 1998; Seixas et al, 2001). Workers, supervisors, and hearing conservation administrators recognize that employee safety may be compromised when co-workers have a hearing impairment that impacts their ability to communicate and hear important environmental sounds (Morata et al, 2005). In a survey of 40 000 US households, hearing loss was shown to negatively impact household

income by an average of up to US\$12 000 per year, depending on the degree of hearing loss (US National Council on Aging, 1999).

Estimates across industrialized nations indicate a large health burden as a consequence of occupational hearing loss (Nelson, 2005). In the US, hearing impairment has been reported as one of the most common chronic conditions experienced by older adults and the rates rapidly increase with age (Crews et al, 2004). Data also indicate that older adults are reporting hearing impairment at increasingly younger ages (Benson & Marano, 1998). Yet many older adults with severe hearing impairment do not use assistive devices, because of their cost, lack of good support for selection and adaptation, and the stigma that is attached to their use (Kochkin, 2007).

The need for public health policy, early intervention, and preventive programs addressing the risk of NIHL has been well recognized for decades (EPA, 1973; ISO, 1971; WHO, 1997). Industry has also been required to comply with regulatory requirements to control hazardous noise exposures and implement hearing conservation programs (for overview see Neitzel, 2007). Yet, despite these regulations there are still indications that hearing conservation programs need to be improved and innovative strategies developed (Fausti et al, 2005; Daniell et al, 2006; Verbeek et al, 2009).

Since 1970, the National Institute for Occupational Safety and Health (NIOSH) has provided evidence-based direction targeting the prevention of occupational hearing loss through research mandated

Abbreviations

EPA	Environmental Protection Agency
EU	European Union
GPA	Good Practices Award
ISO	International Organization for Standardization
NAICS	North American Industrial Classification System
NHCA	National Hearing Conservation Association
NIHL	Noise-induced hearing loss
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
WHO	World Health Organization
STS	Standard threshold shift
VPP	Voluntary protection programs

as part of Public Law. 91-596. The mission of the NIOSH Hearing Loss Prevention Cross-Sector Research Program is to provide national and world leadership to reduce the prevalence of occupational hearing loss (<http://www.cdc.gov/niosh/programs/hlp/>). Since 2005, NIOSH research has focused on four strategic goals: (1) contribute to the development, implementation, and evaluation of effective hearing loss prevention programs; (2) reduce hearing loss through interventions targeting personal protective equipment; (3) develop engineering controls to reduce noise exposures and (4) improve understanding of occupational hearing loss through surveillance and investigation of risk factors (IOM, 2006; and available online at <http://www.cdc.gov/niosh/programs/hlp/goals.html>).

One of the approaches NIOSH took to address the first of these goals was to make it attractive for industry safety personnel to volunteer their success stories by nominating their hearing loss prevention initiatives for an award. The Safe-in-Sound Excellence in Hearing Loss Prevention Award™ was created in partnership with the National Hearing Conservation Association (NHCA) in late 2006 (www.safeinsound.us). The objective of this initiative was to obtain information about real world successful hearing loss prevention programs and public health practices currently in use in industry, and disseminate it widely. The rationale behind this initiative was that by disseminating evidence-based strategies Safe-in-Sound™ could enable other groups to effectively advance hearing loss prevention practice.

Awards and Incentives

In the health care and the occupational health arenas, recognition of benchmarks, awards, and incentive schemes are receiving increasing attention for their role in promoting excellence and adoption of preventive programs (Scott & Bertsche, 1991; Hertz et al, 1994; McAfee & Winn, 1998; Tait & Walker, 2000; US GAO, 2004; Noble, 2006; Morata, 2008; Singapore Government, 2011).

Few of the awards or incentive programs are dedicated specifically to noise control and hearing loss prevention. For 15 years, the Conseil National du Bruit (CNB, 2011) of France has presented the *Decibel d'Or* (Golden Decibel) for environmental initiatives to reduce noise emissions. Among the National Hearing Conservation Association (NHCA, 2011) awards, the Lifetime Achievement Award, Media Award, and Outstanding Hearing Conservationist Award recognize outstanding contributions by individuals and/or entities for achievement within the field of hearing conservation.

On a state level, the Illinois Academy of Audiology's Natalie Stukas Hearing Conservation Award acknowledges outstanding contributions to hearing conservation through advocacy, education, and research. Few health and safety recognition programs specifically target corporate initiatives for the prevention of occupational hearing loss. Some use incentives to target individual program components such as noise control or chemical exposures (Australia Health & Safety Organization, 1997; Deutsches Institut für Gütesicherung und Kennzeichnung, 2011; Worksafe Victoria, 2011, and NIOSH, 2011). Some are broader in scope, involving health exams and educational initiatives (NIOSH, 2011).

In the general occupational arena, the European Agency for Safety and Health at Work (EU-OSHA) has developed the Good Practices Awards (GPAs). The GPA aim to demonstrate, by example, the benefits of following good safety and health practices to all employers and workers, intermediaries including safety and health professionals and practitioners, and others providing assistance and information at the workplace level (for more information see <http://osha.europa.eu/en/campaigns>). Since 2000, EU-OSHA has invited businesses and organizations to submit case studies of innovative solutions to real workplace health and safety challenges. A specific topic is selected each year, and noise was the topic selected for the 2005 campaign (for details see <http://osha.europa.eu/en/campaigns/ew2005>). The winners are recognized and successful entries are published in a printed booklet, which is widely distributed and made available online, and also portrayed in videos and television airings. The GPA are seen as a useful tool for raising awareness of health and safety risks and potential solutions, and for promoting and encouraging the adoption of good practices (see Jukka Takala and Tim Tregenza's presentation at the award ceremony in 2008 at http://osha.europa.eu/en/campaigns/hw2008/awards/04-24-28-Prague-OHsreExample-sofSuccess_Jukka.ppt).

Design

Outcome measures and impact

Two of the more important challenges for any proposed award or incentive scheme involve outcome measures to be used (1) in the evaluation of the initiative's impact and (2) in the selection of awardees. In other words, the first question to be addressed is: 'How can the impact of this award or incentive scheme be evaluated in the short and long term, or how can one tell whether it is making progress towards its broader goal?'

Currently, there are few examples in terms of research to guide the evaluation of health and safety award program effectiveness. Taiwan is one of the few countries that have reported on efforts to evaluate the process and impact of their voluntary protection program as an incentive to improve safety and health and reduce occupational illnesses (ASCC, 2011). Ten years after the creation of a voluntary compliance program for occupational safety and health in Taiwan, dramatic reductions in the frequency of occupational injuries and illness were observed in the worksites granted government certification. Su et al, 2005 compared the frequency rate (lost workday cases per million work hours) and severity rate (total days lost per million work hours) of occupational injuries and illnesses between 724 government certified industries and all other Taiwanese industries. The 724 certified sites had a 49% lower injury and illness frequency rate during the past three years. The severity rate reduction was 80% during the same period (Su et al, 2005). These authors also noted an economic savings in terms of the cost of labor workday losses and a reduction in insurance rates for the certified sites.

Five of the Australian occupational health and safety jurisdictions have award or incentive schemes for general occupational safety and health (Australia Health and Safety Organization, 2011; Work Cover New South Wales, 2011; ASCC, 2011; see <http://safeworkaustralia.gov.au/aboutsafeworkaustralia/NationalActivities/AnnualSafeWorkAustraliaAwards/Pages/AnnualSafeWorkAustraliaAwards.aspx>). Currently, none involve the direct control of hearing hazards at work or broader hearing loss prevention initiatives.

In the United States, the Occupational Safety and Health Agency (OSHA) compares incidence rates of injury and illnesses among participants and non-participants of its Voluntary Protection Program (VPP), but recognizes flaws in their methods to ensure equivalency and quality. In 2009, the US Government Accountability Office evaluated the quality of the OSHA VPPs. The agency recommended improved oversight and controls to better ensure program quality. There are challenging issues to address when considering improved incentive program oversight in terms of extending the program fairly across employment sectors, securing equivalent reviewer expertise, and providing the resources to provide sufficient staff and travel to applicant worksites. Health and safety programs are dynamic processes, and this also complicates the evaluative process.

The second question to be addressed regarding outcome measures is 'How to evaluate candidates for the award?' The challenge of evaluating the award program itself is similar to the other challenge of evaluating the award candidates, particularly when factors other than program participation can affect key indicators such as illness rates. In the case of hearing loss, for example, even the application of simple metrics such as the number/degree of hearing losses, standard threshold shift (STS) rates, or visits to medical professionals for NIHL and/or noise-related tinnitus are influenced by reporting discrepancies, trends over time, reporting access, worker privacy issues, population demographics, and differences in employment sectors that make cross-comparisons difficult. A metric-driven, goal-oriented approach also assumes an 'all or none' performance and does not reward incremental steps toward program improvements to prevent NIHL.

The approaches taken by Safe-in-Sound™ to address the two questions pertaining to outcome measures and candidate evaluations are described next.

Development of the Safe-in-Sound Excellence in Hearing Loss Prevention Award™

Moving the Safe-in-Sound Award™ from project conception to implementation began with the NIOSH project director (second author) extending invitations to five experts to become committee members (John R. Franks, Lee Hager, James Lankford, Scott

Schneider, and Noah Seixas) and to the first author to serve as committee chairperson. Individual committee members have diverse backgrounds and areas of expertise in hearing loss prevention in construction, agriculture, regulatory practice, and general industry. An initial kick-off meeting was held on July 26, 2007 in Cincinnati, Ohio and subsequent meetings have been held by teleconferencing or in person during NHCA annual conferences. The expert committee has been responsible for the logo creation, award development, annual award winner selection and recognition ceremony. Three 'Safe-in-Sound Excellence in Hearing Loss Prevention Awards™' were established; one for each of the three North American Industrial Classification System (NAICS) sectors which originally provided funding for the project; Construction (23), Manufacturing (31–33), and Services (51–56, 61, 71–72, 81 & 92). In addition, a fourth award for 'Innovation in Hearing Loss Prevention' was established to recognize individuals and/or business entities, regardless of sector/NAICS code affiliation.

Several underlying premises have provided guidance for award design and implementation. An appreciation of these tenants is critical to understanding the rationale and ultimate project outcomes. First, the award criteria must be adaptable to different work conditions and administrative structures inherent within some work sectors. Second, it is desirable to see this award project grow to encompass all NAICS sectors, therefore expansion of the criteria for other sectors were also given consideration. Third, the ultimate goal of preventing NIHL was the focus of our efforts and *not* regulatory compliance. This will assure that the awards progress beyond an outdated US regulatory compliance audit. Fourth, the award applicants were given the freedom to demonstrate their evidence of hearing loss prevention in a manner that best exemplifies this goal and is more germane to their efforts. This approach was felt to be more inclusive and would also allow for the discovery of atypical successes in hearing loss prevention efforts. Fifth, innovation and quality are highly valued and recognized. Sixth, there currently is no gold standard for measuring the objective success of hearing loss prevention programs, therefore, we must rely on indicators that the applicants associate with success in their hearing loss prevention efforts. Lastly, the award criteria must be dynamic and adaptable to the ongoing process.

The Safe-in-Sound Award™ project implements a rigorous systematic review process to capture and evaluate the successes and lessons learned from examples of excellence in hearing loss prevention. Award applications are submitted online (<http://www.safeinsound.us/application.html>) and undergo a series of reviews including: pre-screen for completeness, preliminary scores, first-round decisions, supplemental information requests, second-round decisions, selective site visits, and final award decisions. The crystal awards (Figure 1) are presented annually at the NHCA annual conference by the NIOSH



Figure 1. Safe-in-Sound logo and crystal award.

director or his or her representative. Since 2008, attendees of the Annual National Hearing Conservation Association have been given an opportunity to critique and provide input to the award program and presentations. Current and past award winners can be reviewed at <http://www.safeinsound.us/winners.html>.

Results

Impact evaluation

In addition to gathering formal and informal feedback from hearing loss prevention experts attending the NHCA annual conferences, the occupational health community at large, and individual workers are reached through the web site www.safeinsound.us. The web site was promoted through advertising campaigns, related organizations, NIOSH exhibits at professional health and safety meetings, and publicity releases. The web site communicates the requirements for applying for the Safe-in-Sound Award™ and also collects and describes briefly the methods and innovations the award recipients have used to prevent hearing loss. In addition, the web site provides an opportunity to evaluate the short-term impact of this initiative. Inaugural awards were presented in February 2009, but since February 2008 the online traffic has been monitored to quantify target audience interest in the award. The web site traffic is increasing, but cyclical with two peak times. The first peak follows the presentation of the awards at NHCA in late February every year, and the second happens around the deadline for self-nomination for the next year award. After the deadline for nominations has passed, traffic goes down until the next round's award presentation approaches (see Figure 2).

The Safe-in-Sound™ web site traffic suggests growing interest in the award program and in the profiles of the award winning strategies, discussed in the next session. Another objective measure of the interest generated by the award is provided by the quantity and quality of nominations to the award. The number of quality nominations has been increasing since its creation.

Award winning strategies

The third round of Safe-in-Sound Awards™ was presented in 2011. Completion of three rounds of awards presents an opportunity to begin a review of successful strategies that characterize excellence in hearing loss prevention programs (HLPP). Many of these key elements and strategies are not new ideas, but are unique in terms of how extensively they are valued, how integrated they are at all organizational levels, and how these traditional approaches have been extended in application. These preliminary characteristics are generally categorized in terms of organizational values, work environment, hearing loss prevention program personnel, noise hazard identification and monitoring, hearing protection devices, training and motivation, program effectiveness, communication, and innovation. Table 1 provides the specific values and strategies that were common across award winners. It is encouraging to note that the characteristics and strategies outlined in Table 1 are easily transferable to other industries, organizations, and worksites.

Lastly, the benefits of receiving a Safe-in-Sound Award™ have been expressed by previous award winners. Prevention of NIHL is frequently an over-looked area of health and safety and the award serves to highlight their accomplishments and remind a larger audience of the importance of these efforts. The award recognizes an entire team or organization and not just the achievements of the leader or single individual. The organizations recognize that the award belongs to the group and this pride promotes continued efforts to minimize the risk of NIHL and enhances employee buy-in. The award is a strong reminder that all employees/members are committed to the HLPP and even though additional problems still need to be solved before NIHL can be eliminated, the award emphasizes that advancements are achievable and acknowledged. Many organizations/employers reported that the award provided leverage and opportunities to expand the reach of the current approaches; pilot programs have been adopted by other entities or in other geographical regions. New strategies are spreading corporate-wide and professional/government organizations are discussing new policies,

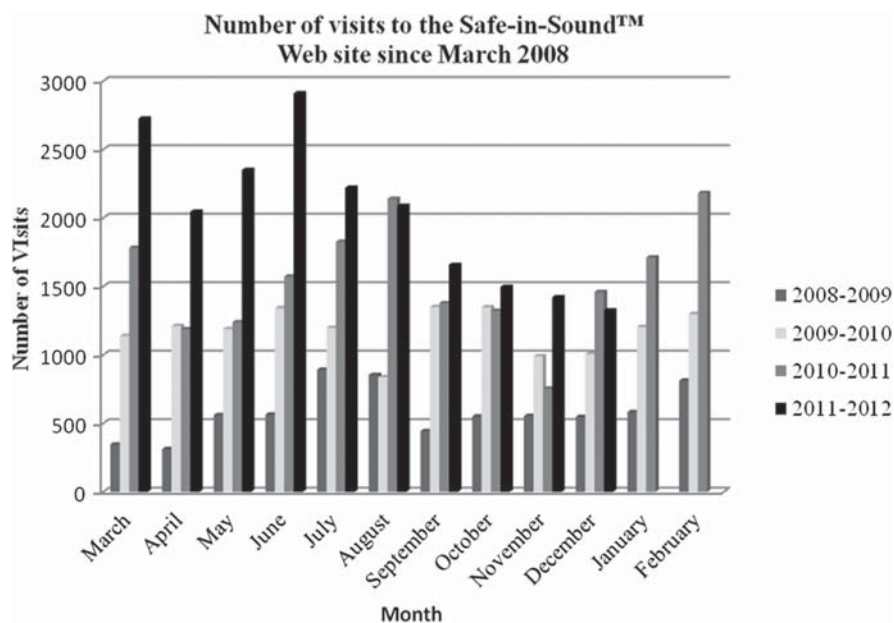


Figure 2. Number of unique visits to the Safe-in-Sound Web site, by 12-month periods, since March 2008. Bars indicate number of unique visits. *Visit* is defined as a sequence of requests from a uniquely identified client that expired after 30 minutes of inactivity.

Table 1. Safe-in-Sound Award™ winner values and characteristics

<i>Program area</i>	<i>Characteristics</i>
<i>Organizational values</i>	<p>Customers and/or employees first.</p> <p>Integrity in all actions.</p> <p>Commitment to highest quality products and services.</p> <p>Long-term commitment to goals.</p> <p>Encourage risk-taking and innovative problem solving.</p> <p>Invite external expertise to collaborate on program improvement.</p> <p>Trust employee judgments.</p> <p>Responsive to employee health and safety concerns.</p> <p>Participation in advanced educational opportunities.</p> <p>Family atmosphere; ‘take care of each other’ attitude.</p> <p>Adopt best-practices approaches to health and safety.</p>
<i>Work environment</i>	<p>Clear roles and shared responsibility.</p> <p>Accountability at all levels.</p> <p>Leverage internal expertise in new areas; e.g. engineering.</p> <p>Recognition that it takes time to overcome barriers, change attitudes, and address cultural differences towards hearing loss prevention. Educational approaches with policy change are the preferred techniques utilized to promote positive change.</p>
<i>Program personnel</i>	<p>Interdisciplinary, inclusive approach with related responsibilities (audiometric technician/audiologist, industrial hygienist, occupational nurse etc.)</p> <p>Integrated at all organizational levels (employee, supervisor, management, contractor, supplier etc.)</p> <p>Utilizes external expertise (audiologists, physicians, noise control engineers, hearing protector device manufacturers etc.)</p> <p>Routine and frequent (weekly) communication meetings with key HLPP personnel.</p> <p>Leverages the advocacy of KEY individuals at the worker (field) level to provide day to day program support, resource procurement, and accountability.</p> <p>Has a strong, passionate, and persuasive individual championing the effort.</p> <p>Key individuals (including management) lead by example.</p> <p>Key personnel understand the workplace demands and are accepted as a legitimate colleague. Able to access the inner circle of workers/professionals. For example; musicians teaching and leading musicians, soldiers training and advocating for fellow soldiers, peer encouraging hearing protector use.</p> <p>Accessible and timely service provision by specialty personnel: audiologists, industrial hygienists, physician etc.</p>

(Continued)

Table 1. (Continued)

<i>Program area</i>	<i>Characteristics</i>
<i>Noise hazard identification, monitoring and control</i>	<p>Noise abatement is the first priority, see examples at http://www.safeinsound.us/winners.html</p> <p>Buy-Quiet strategies in place.</p> <p>Equip individual workers with inexpensive sound level meters to identify hazardous noise areas and monitor noise controls.</p> <p>Workers are readily aware of the noise level for their current location and able to implement protective action if necessary.</p> <p>Easily identifiable locations and activities in which noise levels are hazardous: wall mounted sound level meters, colorful noise maps, extensive signage.</p> <p>Written process for hazard identification and response timelines.</p> <p>Provision of immediate and accessible sound level measurements via, individual SLMs distributed, wall-mounted SLMs etc.</p>
<i>Hearing protection devices</i>	<p>Workers provide input into hearing protection device selection and choice of options.</p> <p>Appropriate for the job task and minimizes communication problems.</p> <p>Fit and attenuation effectiveness validated on an individual wearer basis.</p> <p>Readily available in a variety of types and sizes.</p>
<i>Training and motivation</i>	<p>Individual worker training is provided at time of audiometric examinations.</p> <p>Cross-training across team-member discipline.s</p> <p>Training materials are designed to address the traditional topics while integrating detailed, specific information relevant to the employer and job responsibilities of each worker. For example, actual noise levels of tools the worker uses are referenced.</p> <p>Produce customized training materials, such as self-produced testimonial videos with co-workers.</p> <p>Training is reinforced frequently with field-based training supplements such as toolbox talks.</p> <p>Selected sub-set of workers receive additional training in hearing loss prevention; such as how to monitor effective hearing protector fit in co-workers, how to obtain additional HPDs when the distribution stations are depleted, how to measure sound levels.</p> <p>Integrates non-occupational noise issues; e.g. provides hearing protection for recreational/home use.</p>
<i>Program effectiveness evaluated</i>	<p>Adaptable to changes in the workplace e.g. new equipment, new processes, new materials, variable work schedules.</p> <p>Validated calibrations, certifications are monitored and current.</p>

(Continued)

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Table 1. (Continued)

Program area	Characteristics
	Established, routine audiometric monitoring programs with specific follow-up pathways.
	Accountability promoted at all program levels.
	Up to date databases are maintained and mined for critical information to drive resource expenditure and identify targeted program efforts (e.g. noise control spending, improved HPD etc.).
	Ability to demonstrate results in noise control or hearing loss prevention.
	Well established standard operating procedures and processes for problem identification and solution that are broadly utilized by the workforce.
	Extensive tracking system in place for program enrollment, training schedules/completion, and audiometric monitoring timelines.
<i>Communication</i>	Continuous quality improvement approach.
	Committed to community outreach, publicly visible, e.g. provides hearing protection at noise hazardous community events.
	Communication products are tailored to the worksite, updated, and readily accessible by employees; e.g. noise maps, zone signs, supervisor toolbox talks, newsletters, company intranet resources.
	Open and inclusive communication within the organization.
<i>Innovation</i>	Explore new metrics; quantification of noise exposures, audiogram analysis.
	Multi-faceted programs; consider not just the prevention of hearing loss, but addresses the unique auditory and communication demands of the worker.
	Program leaders advocate for state-of-the-art communication devices, hearing protection devices and HPD fit-check systems.
	Scientifically researches program and product effectiveness and explores experimentally driven solutions.
	Developed innovative products to address unique challenges for the hearing loss prevention program, e.g. hearing protector, noise dosimeter, sound monitoring devices, training products.

guidelines, and/or procedures. The Safe-in-Sound Award™ establishes credibility, especially for those award winners who stretch traditional boundaries with novel or unique approaches. Winners are able to secure additional advocates and even celebrity endorsements for their programs.

It is interesting that rather than the awards serving to only recognize those that have reached a pinnacle of achievement, it actually motivates the award winners to pursue additional program improvements and to reach higher goals. There is a reinforced and renewed commitment to invest in continued program quality improvement. Personal commitments are renewed, re-dedicated and re-energized. The award publicity acknowledges a positive health and safety achievement and

fulfills desires to publicly share personal achievements and disseminate their unique successes. Winning also extends opportunities to partner with others in the same trade or industry and ultimately broadens the impact of the winning HLPP. At the same time, award winners are able to create a public awareness of field-related challenges that are in need of advancements in products, professional expertise, problem solving, and scientific investigation. Award winners are connected to a larger pool of external resources through NIOSH researchers and NHCA members with expertise in NIHL prevention. New and expanded consultations, research, and advocacy have emerged after the annual award presentation. Ultimately, the Safe-in-Sound Award™ may contribute to improved performance and safer employees by acknowledging the value of proactive prevention activities. The award recognition has also provided momentum to improve other health and safety programs at the winning worksite/organizations and expand their initiatives within a corporation.

It appears that there are also tangible benefits to the organizations who only consider submitting a Safe-in-Sound Award™ application or to those who submit an unsuccessful application. Just the review of the information needed for completion of the online award application will serve to highlight program gaps or lack of evidence-based outcomes. The application process itself motivates some web site visitors to delay application and further improve their program. For unsuccessful applicants, the external review committee feedback and site visit discussions can potentially fuel additional program improvements. These applicants are encouraged to re-submit their application at a later date once improvements are made and outcomes measured.

Discussion

The Safe-in-Sound Excellence in Hearing Loss Prevention Award™ has been successfully implemented in the US since 2009. The mission of the NIOSH Hearing Loss Research Program is to provide national and world leadership to reduce the prevalence of occupationally-related hearing loss. NIOSH research currently focuses upon four strategic goals: (1) high quality research; (2) practical solutions; (3) partnerships, and (4) implementing research outcomes into common practice. The Safe-in-Sound Award™ project has been able to meet all these goals by identifying outcome measures and evaluation strategies for candidates of the awards and for evaluating the impact of the award itself. This has been accomplished in both the short and long term; by obtaining high quality field data, identifying practical solutions, disseminating successful strategies to minimize the risk of NIHL, generating new partnerships (NHCA/NIOSH), and sharing research findings and practical solutions with others in the field. In addition, it is expected that the diffusion of better hearing loss prevention methods should contribute to better hearing health in the general population.

Perhaps most encouraging, is that the award project has facilitated the extension of successful hearing loss prevention activities and strategies toward workers that are not traditionally considered in typical workplace HLPPs (e.g. musicians, military personnel). This could not have been possible with only a sector-driven approach to the award project. The award project has been able to identify successful strategies that can be translated to other venues.

Future directions

The European Union's previously described Good Practices Award is an example that inspires the further development of Safe-in-Sound

Excellence in Hearing Loss Prevention Awards™. The main differences between the two programs include breadth (Safe-in-Sound's focus is solely on hearing loss prevention), reach (Safe-in-Sound's focus is currently on specific industrial sectors: manufacturing, construction, and services) and recognition of uniqueness (Safe-in-Sound provides a specific award for innovations).

The development of other communication materials and their dissemination is the primary focus of this NIOSH/NHCA initiative for the immediate future. Members from the expert panel who made the selection of award recipients will complete work already underway with award recipients on the content for dissemination (award-winning strategies in hearing loss prevention) of communication materials expanding what is already available online. For the long term, the plan is to evaluate how the award has been perceived, utilized, and become instrumental in motivating professional activities relating to hearing loss prevention.

Summary

The Safe-in-Sound Award™ has attracted quality nominations, obtained high quality field data; identified practical solutions, disseminated successful strategies to minimize the risk of hearing loss, generated new partnerships, and shared practical solutions with others in the field. In the process, the Safe-in-Sound Award™ project has extended the reach and elevated the quality of hearing loss prevention programs.

Disclaimer

The findings and conclusions in this report are those of the author(s) and do not necessarily represent the views of the National Institute for Occupational Safety and Health.

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