EDITORIAL

2014 Bedford Prize for the ‘Most Outstanding Paper’

Forty-nine years ago British Occupational Hygiene Society (BOHS) instituted the Thomas Bedford Memorial Prize for the ‘most outstanding’ paper in The Annals of Occupational Hygiene, ‘as an incentive to younger workers in the field’ (BOHS, 1966). That statement of purpose itself implies simpler days, when the editors would know all the authors well enough to estimate how old they were! Much may have changed, but the 2014 winning paper would certainly have pleased Thomas Bedford, because, like much of Bedford’s own work, it applies science to a practical workplace campaign for better control of an agent responsible for serious ill-health.

In brief outline, nominations of papers published in the two most recent volumes of the Annals are solicited from BOHS members and other readers. Nominations are then reviewed and voted upon by editorial board members, plus three senior members of BOHS, who each independently select four papers and put them in order of preference. The votes are tallied by the Chief Editor, audited independently and the outcome finally ratified by the BOHS Council.

The paper judged the ‘most outstanding’ of those we published in 2012 and 2013 is ‘Isocyanate exposure control in motor vehicle paint spraying: evidence from biological monitoring’, by Kate Jones, John Cocker, and Mark Piney, (Jones et al., 2013). The work was rooted in a campaign by the British Health and Safety Executive (HSE) to reduce disease incidence in the 12 000 spray painters in the motor vehicle repair industry. This group had 80 times the UK industry average incidence of asthma, attributable to isocyanate exposure. Most worked in enclosed spray booths and wore air-fed breathing apparatus, so the route of exposure was not obvious, but investigation found lapses of control resulting from ignorance of the behavior and persistence of the fine spray cloud, and of the damage it could do. HSE implemented a campaign to improve awareness amongst sprayers and their managers with demonstrations, including working models of a spray booth and spray room and video presentations. Their ambitious aim, in the words of the Jones et al. paper, was ‘to protect health and “change the culture” of the industry’. To assess the effect of the campaign, the authors used a database held by the Health and Safety Laboratory of urine isocyanate measurements from spray painters. Those attending the campaign workshops were given the opportunity to give samples after implementing controls. Those that still gave positive results were further advised and resampled. These biological sampling results showed marked improvements in those attending the course and later instruction, compared with the results in the database. Independent evaluation of the campaign also found it to have been effective in conveying key messages.

A number of aspects of this paper contributed to its nomination and selection. First, the use of biological monitoring to assess impact of an industry-wide intervention is both novel and powerful. The study faced difficulties of logistical and statistical design as well as the usual technical ones, and the demonstration of large effect on an industry-wide basis is all the more impressive. Second, use of biomonitoring is a creative approach to assessment in small businesses in which effective exposure monitoring by business personnel would be highly challenging, especially for something like isocyanates. Use of biomonitoring in this way extends our
ability to assess complex exposures in widely distributed settings. Third, the nature of the intervention was a public campaign supported by a governmental agency to voluntarily promote safer work processes and exposure controls. It is rare, but vital, that such campaigns undergo serious attempts to evaluate their success, using actual outcome measures such as exposure monitoring rather than the more common process measures.

It is worth noting that the paper receiving the second highest number of points by the selection committee was also an intervention effectiveness study using biomarkers (along with air and dermal measures) to assess exposure (McClean et al., 2012). In addition, this study used a novel ‘cross-over’ study design to simultaneously evaluate and compare the level of control achieved with a respiratory protective device, dermal protection, and substitution of a non-petroleum based cleaning fluid.

The fact that the ‘most outstanding’ paper and the next highest scoring manuscript were both intervention studies, using novel designs and rigorous exposure assessment methods underscores the value placed on practical solutions supported by good science among the occupational hygiene community. It further supports our priority of publishing intervention effectiveness studies, and shows the importance of our new category of Short Communication, in which practical solutions are presented with their supporting evidence (Seixas, 2015).

Thomas Bedford’s career sprang from official concern for the effect of worker fatigue and toxic chemicals on productivity and injury rates during and immediately after the First World War. He moved from this into work on heat stress, and then into the epidemic of lung disease amongst coal miners. His work on the sizes of dust in the lungs of diseased miners post mortem contributed to the first respirable dust criteria in the 1950s. In 1953, he was one of the founders and the first president of BOHS (Bedford, 1939; BOHS, 1963). His paradigm of observing a workplace problem, systematically investigating the cause, and implementing improvements based on science is exactly that followed by the Jones et al. paper, and the type of study the Annals is dedicated to publishing.

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REFERENCES