

PPE and Productivity

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I recently read the February 2005 *Synergist* article (pp. 32-33) on PPE (personal protective equipment) costs by Ryan Stewart. In this article, Stewart considers many costs that determine choices of PPE equipment, and he makes good points about selections to be made. But there is one cost item that was not included that can have a large effect, and that is worker performance degradation due to the use of PPE.

There are many competing choices for various PPE items. Selections can be made in the manner that Stewart suggests, or solely on initial cost, or using other rational or irrational reasons. In almost no instance that I know of, the choice can be made on worker productivity while using that PPE item. Considering the amount of time that a worker is encumbered with PPE, performance degradation can result in an overall cost much larger than any other factor.

For example, scratched lenses on a respirator that degrade visual acuity from 20/20 to 20/30 result in a 20 percent reduction in correct responses on a console-monitoring task. This reduction in performance could be very costly from an economic or safety standpoint.

In our continuing work with respirators, we have focused on task performance as the bottom line, integrative figure of merit by which respirators should be evaluated. From the wearer viewpoint, such a focus makes sense because a worker who feels better about his PPE will work better and more productively. The PPE will be better tolerated, and more likely to be worn. From the corporate side, higher productivity means greater output or less cost. PPE that interferes greatly with task performance can cause workers to need either more time or more help to complete a task. As with many economic choices, initial costs for PPE are often comparatively very much smaller than continuing operating costs.

Recommendations for specific PPE items would often be better tolerated if worker performance while wearing those items were taken into account. Industrial hygienists who consider productivity while still maintaining adequate protection for wearers would also demonstrate that they are trying to help both employer and employees.

Unfortunately, at this point there is little productivity data available by which PPE choices may be compared. There is a lot of work to be done, and a good deal of it could be done locally by individual industrial hygienists. An accumulation of such productivity data would be of help to project managers seeking to estimate costs of new projects, supervisors who need to know how much time and effort to expend to complete a job, workers who would have a better basis for their uses of PPE, and PPE manufacturers who would know which of their innovations actually have merit.

Another benefit of such productivity data would be that, when all costs are taken into account, the cost of engineering controls may not appear so prohibitive. The workplace may become much safer.

The cheapest PPE for the employer is PPE not purchased. The most expensive PPE for the worker is PPE not used. What we want is to see PPE purchased and used, both for the same reason: it is the best available.