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The Centre for Public Health Research has received \$5 million in funding from the Health Research Council for a ground-breaking five-year study that will see researchers working with industry to develop user-friendly solutions for three critical workplace exposure issues.

CPHR director Professor Jeroen Douwes told Safeguard that the project will use intervention trials to reduce exposures to pesticides in agriculture, solvents in the vehicle collision repair industry, and silica dust in construction.

The study is unusual, he says, because the health issues it is seeking to prevent have long latencies.

"In the past researchers have shied away from doing intervention studies on long-latency diseases because it may, in some cases, be decades before you see a reduction in exposure-related harm.

"Our focus, however, is to reduce the level of risk by bringing about significant reductions in exposure. While we won't see any immediate improvement in health effects, we know that in years to come there will be a reduction."

The number of participants will make the study one of the largest occupational intervention programmes of its type in the world, with 240 people being recruited from each of the three industry sectors, half of whom will be randomly selected for control groups.

Both the issues and the interventions will differ across the industries, Douwes says.

For vehicle repair workers, for instance, skin exposures are expected to be the primary issue, with initial investigations having found airborne exposure levels that are below the current Workplace Exposure Standard. But we did find that workers continue to wash their hands in solvent, so this is a relatively easy intervention – doing the measurements to show them why this practice is a problem."

In construction, using water to suppress dust when cutting concrete, and cleaning the work area with an industrial vacuum cleaner rather than a broom, is likely to have a positive impact on exposures, while for those working with pesticides different spraying techniques, or minor modifications to spray equipment, may be beneficial.

"In some cases interventions will cost a bit more money, but we want to work with the industry to find measures that can be applied relatively easily, and – more importantly – will be acceptable to the workers, because there is no point in coming out with an intervention that no one will use once we've gone."

In some situations PPE will be needed, but the study aims to avoid prolonged use wherever possible. "We want to work out where peak exposures are occurring, so we may be able to identify half an hour a day where it is critical to wear PPE, rather than using it throughout the day."

The project will be hands-on, with the 20-member research team using video exposure monitoring (VEM) to record real-time exposure levels during work activities.

"We will overlay an exposure graph on the video to identify the points where high exposures are occurring. We can show the worker what's happening, discuss options to reduce the exposure and then test the interventions immediately, again using VEM to show changes in exposure levels."

Interventions will be developed, tested and modified, in consultation with workers, over the course of the five-year project, with the hope that the wider industries will then roll out the successful strategies nationwide. The first to benefit from the findings, however, will be those in the control groups, who will be introduced to the new interventions as soon as the study is complete, Douwes says.

For the CPHR team the study is something of a landmark.

"As epidemiologists we're very good at identifying problems, but actually taking the next step and contributing to the solution in this way is something that's new for us, and that makes this project very exciting."

