

An Evaluation of the Between-User Reliability of Tier 1 Tools Used for Exposure Assessment under REACH

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Introduction

When applying the Tier 1 assessment tools to an exposure situation, users must select options from several possible input parameters. Previous studies have suggested that results from exposure assessments using expert judgement can vary considerably between assessors. In addition, similar results were observed for use of exposure tools, where different users may obtain different results based on similar information. This study aimed to investigate the between-user reliability for the Tier 1 tools.

Methods

Two assessment methods were used to evaluate consistency between users in making these input choices. A remote-completion exercise and focus group were used to identify and evaluate tool parameters and other factors potentially associated with between-user variability, for example users' employment sector, experience level and English language ability.

Results

In the remote-completion exercise, participants (N=146) generated dermal and inhalation exposure estimates (N=4066) from a defined set of exposure situation descriptions/Tier 1 tool combinations over a fixed time period. Qualitative information on decision-making processes associated with tool use was collected during the focus group.

The interactions between users, tools and situations were analysed and described. Within user variation was minor compared with between-user variation. Significant variation was observed between users when selecting task/ activity, dustiness and risk management measures within the tools.

Conclusions

The results showed that considerable variability was observed in results obtained by different users of the tools. This variability did not seem to be determined by the characteristics of the user. The results are based on representative participants, many of whom use the tools routinely. Therefore, these results suggest that more needs to be done to ensure consistency between tool users.