

Syrian refugee communities. The Syrian conflict has resulted in one of the greatest humanitarian crises of the 21st century. Over 5.6 million Syrians have become refugees, mostly residing in the neighboring countries of Turkey, Jordan, and Lebanon. Bleak prospects for Syrian refugee youth have raised concerns of a 'lost generation' of children who have had their housing, schooling, and childhoods interrupted. The combination of inadequate national refugee policies, abject poverty, and withering international aid for the crisis have made child labor endemic among many Syrian refugee communities in Jordan, Lebanon, and Turkey (Küppers & Ruhmann, 2016; International Labour Organization et al., 2017; Habib et al., 2019). This address will share stories that elucidate how child labor takes root in conflict settings and how the international community can better address the challenges facing those who are most vulnerable.

K-05 INTERVENTION STUDIES IN OCCUPATIONAL HEALTH: THE MISSING LINK

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10.1136/OEM-2019-EPI.5

Interventions are very common in workplaces mainly to improve productivity and efficiencies, but also in order to comply with regulatory requirements (environmental and occupational) and to improve the health of workers. Consequently, exposure to chemical agents, at least in Western Europe and the US, have declined in the last 4–5 decades. However, there is a remarkable paucity of properly conducted intervention studies in occupational health, in particular in relation to chemical and biological agents and their health outcomes. As a result, we don't have a very good understanding of what interventions actually work to reduce exposure and to improve the health of workers. Very wide estimates of the effectiveness of control measures have been noted from observational studies, probably because only few studies were probably conducted and many studies just compared the exposure between workplaces with and without the intervention. However, there is an important role for properly conducted intervention studies to reduce exposure and improve occupational health, and results of properly designed intervention studies will lead to a better understanding of causality as well as better understanding of effective interventions.

Pesticide Exposure Assessment

O1A.1 PESTICIDE EXPOSURE OF WORKERS DURING TREATMENT AND RE-ENTRY TASKS IN APPLE-GROWING: RESULTS FROM THE CANEPA STUDY IN FRANCE

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10.1136/OEM-2019-EPI.6

Few studies were performed to assess workers' exposure to pesticides in orchards and even less during re-entry activities. However, nearly 40 pesticide treatments per year are carried out in apple-growing especially against fungal diseases, mainly scab. In order to characterize pesticide exposures of farmers in epidemiological studies, we performed a non-controlled field study in 3 regions of France (Normandy, South-West and Rhône-Alpes) in apple orchards during the 2016 and 2017 seasons. We observed the activity of the workers trying to disrupt it as little as possible. Workers' external contamination and their determinants were assessed during 158 working days, corresponding to 31 treatment days (including mixing, spraying and equipment cleaning), 69 re-entry days (including apple hand-thinning, anti-hail net opening and closing tasks) and 58 harvesting days. We performed both detailed observations of work characteristics on the whole day (including an ergonomic approach) and pesticide measurements for dermal contamination during each task (following the OCDE guidelines). Potential dermal exposure was measured with cotton pads placed onto the skin (11 body areas), and cotton gloves or hand rinsing for each task. Captan and dithianon, fungicides representative of pesticide use in apple-growing, were used as markers for exposure. Relative contribution of the different body areas to total exposure was assessed. In addition, to investigate potential sources of contamination, we measured dislodgeable residues in the environment of the workers by analyzing leaf and fruit samples and surfaces of work equipment. Results indicated that workers' dermal exposure was higher during re-entry tasks than treatments and harvests. The median dermal contamination during treatment was 4.03 mg of active ingredients per day, levels ranging from 0.95 mg to 64.19 mg. Most of the contamination was observed on the hands, especially during mixing. We will focus our presentation on levels and main determinants of pesticide exposure during treatment tasks.

O1A.2 EXPOSURE TO BENZIMIDAZOLE FUNGICIDES IN AGRICULTURE AND NON-HODGKIN LYMPHOMAS, OVERALL AND BY SUBTYPES, IN THE AGRICULTURE AND CANCER (AGRICAN) COHORT

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10.1136/OEM-2019-EPI.7

Purpose Increased risks of Non-Hodgkin's Lymphomas (NHLs) have been reported among farmers in several meta-analyses, with exposure to pesticides as the main explanation. Few studies investigated associations by NHL subtypes and considering specific pesticides. From the French agricultural cohort AGRICAN, we assessed the role of benzimidazole