exposures and outcomes of interest from prior literature to be examined at a level of detail not possible in the original study, e.g. nerve agent antidotes, riot control agents, neurological mortality, and rarer cancers.

Implications Greater understanding of the long-term risks associated with exposure to chemical agents could lead to raised awareness among policy makers and health care providers, leading to improved diagnosis and quality of care.

Conflict of interest None

P.2.03 DESIGN, DEVELOPMENT AND IMPLEMENTATION OF A NATIONAL MULTI-SITE FIRE FIGHTER CANCER COHORT STUDY

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Background and objective(s) Retrospective epidemiologic studies suggest a disproportionate burden in specific cancer incidence rates in U.S. fire fighters when compared to the general population. Exposure to hazardous chemicals and carcinogenic compounds during fire incident response may be contributing to these observed elevated cancer rates. Research studies that prospectively collect and integrate exposure, biomarker and health survey information within the fire fighter workforce are lacking. In the present study, we 1) describe the design and development of a multi-state prospective fire fighter cancer cohort study; and 2) discuss the collection of cancer biomarker data from the first fire department.

Methods In July 2016, through FEMA-funding a national multi-state prospective study was designed with biomarker, exposure and data collection cores. Each core is comprised of a team of multidisciplinary investigators across governmental, industry and academic institutions with instrumentation and resources to collect field measurements across fire service departments. An oversight and planning board was empaneled with fire fighter department and union leadership and subject matter experts to guide the design, collection and analysis of integrated data streams.

Results A total of 62 new recruits from a large U.S. large career Fire Department were consented and enrolled into the Fire Fighter Cancer Cohort Study in February 2018. Among consenting rookie firefighters 60 consented (response rate 60/62=96.8%) to the optional biomarker and exposure collection protocols as well as granted permission for follow up in the future. Two phlebotomists and an occupational health nurse at the training academy collected a total of 5 tubes from each firefighter (i.e., TEMPUS, PAXGENE RNA, Sterile Red Top, EDTA, and sodium citrate tube).

Conclusions The newly established national prospective cancer cohort study infrastructure supports the collection of electronic consent, biomarker, exposure and health survey data. Expansion of the research protocol to other firefighter subgroups is needed.

P.2.04 OCCUPATIONAL SKIN DISEASE IN A TERTIARY OCCUPATIONAL DERMATOLOGIC CLINIC: A RETROSPECTIVE ANALYSIS FROM 2010 TO 2017

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Background Occupational skin disease (OSD) is one of the most common occupational disorders in Taiwan. As reporting OSD was not compulsory, there was limited information on the exact causes and patient characteristics. The objective of this study was to investigate the causes and common allergens among OSD patients in Taiwan.

Methods We recruited patients from Occupational Dermatology Clinic in National Cheng Kung University Hospital, a tertiary referral center in Tainan city, between 1 January 2010 and 31 July 2017. Patch testing with European baseline series, additional occupation-oriented series, and personal material exposed at work or during daily life was carried out if the patients were suspected of allergic skin diseases.

Results Among the 273 patients who received patch testing, 51 (18.7%) patients had a final diagnosis of OSD. 82.4% of the 51 patients were diagnosed with allergic contact dermatitis (ACD), 11.8% with irritant contact dermatitis (ICD), while the rest 5.9% with both. Patient reported 3.0 years of skin problem prior to the clinic visit. The vast majority of patients suffered from hand eczema. Epoxy resin workers, food workers, hairdressers and beauty salon beauticians were the most common occupations related to OSD. The most important allergens were nickel, fragrance mix I, potassium dichromate and paraben mix. Around half of the patients showed allergic reaction to their personal material.

Discussion As worker compensation statistics may not accurately estimate the characteristics of OSD patients, our study was crucial to identify the high-risk groups as well as the common allergens related to their work. Although the results might not represent the proportion of patients of OSD in other clinic, drawing information from patch testing may reflect those patients of severer or longer duration of symptoms. Future occupational measures should be taken on these industries for the detection and prevention of OSD.

P.2.06 RISK AND PREVENTION OF SENSITIZATION AND ALLERGIC CONTACT DERMATITIS AMONG WORKERS HANDLING EPOXY RESINS

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High prevalences of sensitization and allergic contact dermatitis (ACD) have been reported among workers exposed to

epoxy resin systems (ERS). Yet little is known about the risk when using up-to-date skin protection. Occupational skin exposure is rarely monitored and skin exposure to ERS is often left unrecognized. The objective of this project is to analyze the risk of sensitization and ACD among workers handling ERS and to assess a novel approach to optimize the prevention of dermatitis and sensitization by fluorescence visualization of exposure.

Skin exposure will be visualized by a fluorescent tracer added to the ERS. UVA-light will illuminate the skin and the fluorescent areas will be recorded by a computer vision system with a limit of detection of 1×1 mm. In cooperation with global manufacturers of wind turbines, we will randomize 350 lamination workers to either an intervention or a control group. The intervention group will be shown images of their UVA-exposed skin, while the control group will not. The intervention will take place daily in 4 time periods, each lasting a month, during the 2 year follow-up period. All participants will be patch tested at baseline and at the end of follow-up with a tailored patch-test series containing 11 different products including epoxy resins and hardeners, in total comprising 30 potentially sensitizing compounds, that the workers handle. Participants are screened for dermatitis at start and at end of follow-up or end of employment. We will analyze the risk of sensitization, dermatitis and the risk of developing dermatitis when sensitized. We will also assess determinants for ERS exposure including working tasks and procedures. The potency of resins and hardeners to elicit contact allergy will be highlighted, as well as the frequency of concomitant contact allergies to different ERS compounds.

P.2.07 TIMES OF SICK LEAVE DUE TO TEMPORARY DISABILITY RELATED TO A NON-WORK-RELATED ILLNESS AND RE-ADAPTATION TO WORK

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Objective To evaluate if the times of sick leave due to temporary disability related to a non-work-related illness (NWRI) depends on whether or not the workers have required a vocational rehabilitation.

Method Historical cohort study of university workers in São Paulo, Brazil, between 2010 and 2015. Data were obtained from work institutional databases that recorded personal, occupation, physician's examination and vocational rehabilitation data. The Charlson Comorbidity Index was obtained from medical history according to the most prevalent diagnoses in each physician's assessment report and respective sick leave episode duration. Associations between variables were analyzed by simple and multiple Cox regression models.

Results Depressive disorders, convalescences and back pain were responsible for 70% of all sick leaves due to non-work-related conditions that caused temporary disability. Follow-up time was decreased when the number of NWRI per worker increases, follow-up times until readaptation between 4 and 320 days and great variability within the same disease. The CCI weight was of 0 in 96.2% of sick leaves. In the Cox model, the number of physician's examinations (HR=0.96), non-insulin-dependent diabetes mellitus (HR=0.40) and primary essential hypertension (HR=0.29) were found to be

significant protective factor for sick leave duration until vocational rehabilitation. Recurrent depressive disorders (HR=1.5), conjunctivitis (HR=2.78), acute sinusitis (HR=4.99), skin conditions (HR=3, 80), back pain (HR=1.62), kidney and ureter calculus (HR=2.31), pelvic abdominal pain (HR=2.33) and falls at the same level (HR=3.71) were risk factors to longer sick leave duration until vocational rehabilitation.

Conclusion When there was more medical assessment during the period of sick leave the times were reduced and some diseases such as upper airways, eyes and skin, pain and depression require longer times until vocational rehabilitation.

P.2.09 HEALTH RISKS OF WORKER WHO WORK WITH THE INFECTIOUS AND HEALTH CARE WASTE TRANSPORTATION FROM HOSPITAL BY PRIVATE TRANSPORT SECTOR

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Infectious and health care waste dramatically increasing due to the varieties of health care activities. This aims to identify problems and the health risk of worker who work with the infectious and health care waste transportation from hospital by private transport sector (PTS). The cross-sectional study was applied to the factors effecting with the outcome. 13 PTSs and 127 workers were employed in this study. The results found that: total of 127 workers from 13 PTSs in Thailand, among this 86.6% of workers were male, mean age of 31 years old, and the mean of working with infection and health care waste of 5.03 years. The main job specification was health care waste collector of 57.5%, drivers of 26%, both driver and collector of 16.5%. Only 38.6% was trained (control, precaution and protection) by the Ministry of Public Health (MoPH). A part one year later, the worker had an accident or injury (punch with needle or other sharp) from infectious and health care waste during working 42.5%, 37.8% have had contaminated or touch with the infectious fluid, 18.9% had traffic accident (car turnover, clash, offside cone) and 8.3% had the infectious and health care waste or leachates flood pour out from vehicle or container. The factors associated with risk of the health of the infectious and health care waste worker taken into account of affect of other factors, it were found that prevention and precaution training, job position, age and yearly health check were statistical significant with the health risk, respectively (OR=4.61, 95% CI=0.26 to 1.44, p=0.01) job position (OR=3.68, 95% CI=1.09 to 12.35, p=0.05), Age (OR=2.97, 95% CI=0.16 to 48.49, p=0.01) and yearly health check (OR=0.96, 95% CI=0.34 to 2.72, p=0.01).

P.2.10 HEALTHCARE PROVIDER COMMUNICATION AND THE DURATION OF TIME OFF WORK AMONG INJURED WORKERS: A PROSPECTIVE COHORT STUDY

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