addition to smoking. The occupational variation in risk of bladder cancer is small when adjusted for smoking.

**1454 EARLY MARKERS OF CARDIOVASCULAR DISEASE ARE ASSOCIATED WITH OCCUPATIONAL EXPOSURE TO POLYCYCLIC AROMATIC HYDROCARBONS**

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**Introduction** Occupational exposure to polycyclic aromatic hydrocarbons (PAH) from soot is common and has been associated with increased risk of cardiovascular disease (CVD); the association, however, has only been indicated, not established. Our aim was to investigate occupational exposure to PAH and early markers of CVD.

**Methods** A cross-sectional study of 151 chimney sweeps and 152 controls, all males, from Sweden was conducted between 2011–2015. Participants answered a questionnaire and gave blood and urine samples. Urinary PAH metabolites were measured using LC-MS/MS: 1-hydroxypyrene (1-OH-PYR), 2-hydroxyphenanthrene (2-OH-PH), 3-hydroxybenzo[al]pyrene (3-OH-BaP), and 3-hydroxybenzo[a]anthracene (3-OH-BaA). Blood pressure (BP) and serum biomarkers were measured (C-reactive protein, homocysteine, gamma-glutamyltransferase, cholesterol, HDL, LDL, and triglycerides), to estimate the risk of CVD.

**Results** Chimney sweeps had up to 7-fold higher concentrations of PAH metabolites in urine than controls (p<0.001): median concentrations (adjusted for specific gravity) for 1-OH-PYR, 2-OH-PH, 3-OH-BaP, and 3-OH-BaA were 0.56 µg/L, 0.78 µg/L, 4.75 ng/L, and 6.28 ng/L, respectively. PAH metabolites correlated positively with the amount of soot sweeping as a percentage of total work (p<0.001). Chimney sweeps had increased homocysteine, cholesterol, and HDL (β=3.4 µmol/L, 0.43 mmol/L, and 0.13 mmol/L, respectively, p<0.003, adjusted for age, BMI, and smoking). 2-OH-PH, 3-OH-BaP, and 3-OH-BaA were positively associated with diastolic BP in chimney sweeps (p<0.044, adjusted for age, BMI, and smoking).

**Conclusions** Working with soot resulted in clear exposure to PAH, and in turn, an elevated risk for CVD. These findings indicate the need to raise awareness of protective measures that can decrease PAH exposure during work and in the general environment.
training, suggesting that doctors learn best through applied ‘leadership learning’ as opposed to theory-driven programmes.

**Conclusions** Drawing on Self-Determination Theory this study provides a theoretical framework for engaging doctors in Medical Leadership; assessing their leadership competency and learning needs and setting up reliable leadership programmes. Doctors’ ability to reliably determine their learning needs and the invaluable role of hands-on leadership-management experience in boosting doctors’ leadership confidence, calls for more personalised and relevant learning plan that can build on their previous experience and expertise.

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**1511** WARNING BELL AGAINST THE RISE OF VIOLENCE WITH REGARD TO HEALTH PROFESSIONALS IN THE EMERGENCY DEPARTMENT

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**Introduction**

The violence is strongly present in the current hospital context, where the violence in the hospital is increasing, in particular with regard to harm to persons. The emergency department, as the hospital’s multidisciplinary gateway, is now the most widespread hospital service with the highest number of acts of violence.

**Methods**

This is a cross-sectional study conducted with the emergency department staff at a prefectural hospital in Casablanca using a self-administered questionnaire. The aim is to evaluate the violence in the emergency department and to define the methods of prevention.

**Result**

Only 30 people (37.5%) participated in the survey, with a female predominance (66.6%). The average age was 35 years. 90% of our respondents feel exposed to violence in the performance of their duties. Nurses are the most exposed occupational category (34.6%). Visitors and accompanying persons were the main perpetrators of the violence (66.6%). Violence occurs more at night (39%). 69% of violence is harmful to people. Only 33.3% of the violence was reported to the administration.

**Discussion**

Several studies, including ours, show a female predominance, this could be explained by the feminization of health personnel. In our study, visitors or accompanying persons were the most responsible for the violence (66.6%).

**Conclusion**

Violence against health personnel has become a daily reality. Its continuous rise has sounded the alarm calling to control this risk. Efforts should be pursued towards evaluation and prevention in order to optimise exercise safety.

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**1665** AVIATION MEDICINE: THE GLOBAL CHALLENGES TO REGULATORS AND AIRLINES

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**Aim of special session**

An overview about contemporary global challenges to aviation regulators and airlines

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Regulatory aviation medicine/aeromedicine, a subsection of occupational medicine, aims to determine whether pilots are medically fit to fly either routinely or in response to a decrease in medical fitness. Traditionally, change occurs very slowly in aviation medicine, new treatments and technologies must be evidence based and well established before the standards will change. The role of the aviation medical regulator (‘medical assessor’) has become more demanding in the past 20 years as many complex ongoing clinical conditions have now been deemed compatible with safe flight. Therefore, many pilots are now deemed fit to fly where formerly their careers would have ended. In addition, regulators (competent authorities) around the world determine the medical standard