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TUBERCULOSIS RISK ASSESSMENT IN HOSPITAL SETTINGS

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Introduction Tuberculosis (TB) is an occupational hazard for healthcare workers. National and international policies establish occupational TB risk assessment through the number of patients with TB per year for the whole facility. However, in an hospital setting with different workplaces, it's important to independently classify TB risk in every work environment in order to implement cost-effective preventive measures.

Methods We establish a TB risk matrix for our 500-beds hospital and we applied it retrospectively to each department from 2014 to 2016. We studied the following variables: frequency (number of inpatients with infectious TB per service per year), exposure (period of time without isolation measures per patient or, in case of outpatient setting, performance of high-risk procedures for transmission) and severity of the occupational disease.

Results The highest risk of occupational TB was found through the studied years in Emergency, Pneumology and Infectiology Departments. However, there was a decrease in the last year due to better isolation measures. Internal Medicine and Otorhinolaryngology wards were considered very high-risk departments due to prolonged exposure to TB patients without any control procedures. Imageology and Primary Care ward were consistently classified as high-risk as result of the high number of TB patients assisted. Exceptionally, in 2015, Intensive Care and Stroke units as well as Psychiatry department were found to have very high-risk TB infection due to a prolonged admission of one patient without isolation procedures. The other departments were classified as moderate or low risk.

Discussion All healthcare institutions should conduct TB risk assessment periodically as risk classification may change. These results allow to identify which departments have high-risk of occupational TB infection, in order to undertake specific preventive strategies and TB screening accordingl.

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FUNGAL KERATITIS IN AUXILIARY GARBAGE COLLECTOR AS AN OCCUPATIONAL DISEASE. CASE REPORT

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Introduction Infectious keratitis is a serious ocular pathology with potentially catastrophic visual results, being this one of the most prevalent causes of irreversible blindness worldwide, according to the WHO, with a prevalence ranging from 6% to 60%, predominantly in developing countries.

Methods 45 years old man worker, with history of myopia with contact lens wear for 3 year, urban waste collector since 3 years and 9 months ago, without personal protection equipment, while, working had a right eye exposure from a garbage bag that was being compressed in a collecting truck, rubbing his eye immediately and removing contact lenses

5 hours later. One day later, he presented decreased visual acuity, hyperemic conjunctiva and leukoma, appearing to the ophthalmologist who indicated moxifloxacin ophthalmic, presenting partial recovery of visual acuity. 15 days later he continued with leukoma, which yielded to treatment with fluconazole, but the evolution continued with sudden decrease in vision 20/400, establishing diagnosis of 5 × 4 mm corneal ulcer, receiving treatment with a patch of cyanoacrylate and a bandage lens on 3 occasions without improvement, requiring corneal transplantation performed 8 months later.

Results Direct fundoscopy, Goldmann lens: papilla with excavation of 0.4 × 0.4 mm, central emergency vessels, slimmed vascular pattern, cornea with central opacity at stromal oedema expenses and corneal centre ulcer of 5 × 4 mm.

Discussion During garbage collection workers are exposed to biological agents such as *Aspergillus*, *Fusarium* and *Candida* from organic materials; That without the use of appropriate personal protective equipment and combined with the use of contact lenses increases the risk of developing ocular pathologies such as fungal keratitis. Through symptomatology, physical exploration, and evolution of the pathology, the causal relationship was corroborated, cause-effect, work-injury, being determined as if occupational disease.

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THERE'S A RAT IN THE LAB – RAT BITE AND RAT BITE FEVER IN THE OCCUPATIONAL HEALTHCARE SETTING

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Introduction Ratborne diseases are a.o. leptospirosis, hantavirus, tulaeremia, plague, rickettsiosis, pasteurellosis, rat bite fever and parasitological infections. Up to 10 percent of all ratbites results in 'rat bite fever' (RBF). RBF is a designation for 2 diseases caused by different gram negative bacteria: streptobacillary RBF, by *Streptobacillus moniliformis*, a rod-shaped bacteria and less common spirillary RBF or 'sodoku', by *Spirillum minor*, a spiral-shaped bacteria which occurs more in Asia (Japan). Streptobacillary RBF presents as a local skin lesion, followed abruptly by flu-like illness with fever, chills, headache, vomiting, pain of joints or muscles about 3–10 days after the initial injury. Within 2–4 days a diffuse maculopapular or petechial rash involving the extremities, especially palms and soles, appears. Transmission occurs by a bite or scratch of a rodent or predator of rats, as well as by ingestion of food or water contaminated by a rat. Ingestion leads to the gastrointestinal form of disease known as 'Haverhill fever', characterised by pharyngitis and vomiting. Relapsing fever and polyarthritis develop in 30 and 50 percent respectively.

Methods We studied the literature from the past 100 years to search for the occupational risk factors of rat bites and rat bite fever.

Result Numerous laboratories use rats as experimental animals, so we retrieved numerous cases from the lab. Other occupations at risk were pest control workers, cleaning workers, manual labourers in a warehouse, pet stores employees, veterinarians and vet personnel, farmers and rat breeders. As pet rats are becoming more popular, RBF rates are rising.

Discussion Ratbites are probably underreported. The diagnosis of RBF can be challenging and easily be overlooked. Unspite

its name, nearly 30% of patients report no recognisable rat bite. Precise history-taking related to contact with rats and other rodents and detection of skin eruptions can be clues to diagnosis of this infection.

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WORKPLACE INFLUENZA: TO BE VACCINATED OR NOT TO BE VACCINATED, THAT'S THE QUESTION FOR HEALTHCARE WORKERS – THE ETHICS-

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Introduction Seasonal influenza (SI) vaccination has been recommended for healthcare workers (HCWs) for many years. Despite decades of efforts to encourage HCWs to be immunised, vaccination uptake levels remain low. Most voluntary policies to increase vaccination rates among HCWs have not been very effective. How to close the gap between desired and current vaccination rates, that's the question. Whether (semi)mandatory vaccination policies (e.g., vaccination-required, vaccinate-or-mask, 'may not work during facility outbreaks' policies) are justified is an ethical issue.

Methods We explored the ethical, moral, empirical and evidential arguments for or against (mandatory) SI vaccination of HCWs in the literature (2011–2017). Neither the 'clinical' nor the 'public health' ethics frameworks resolve the question fully. Are the 'medical ethical principles' of beneficence (an action done to benefit others) and non-maleficence (one ought not to inflict evil or harm) sufficient enough to support mandatory influenza vaccination policies?

Results Recently 'components of justice' frameworks were also added to the ongoing ethical debate. HCWs remain bound by ethical principles of both beneficence and non-maleficence. It is very unlikely that purely voluntary programmes will achieve vaccination rates among HCWs that are sufficient to meet the ethical obligations of beneficence and non-maleficence. Although there is increasing evidence, that individuals are more inclined to get vaccinated if this benefits other, if their own costs are low.

Further studies documenting the impact of HCWs influenza vaccination outcomes on the patients' health, would inform decisions on the use of mandatory vaccine policies in HCWs. Despite the ongoing debate about the evidence, some governments and health care organisations have judged that the scientific evidence is sufficiently strong to justify (semi)mandatory vaccination policies for HCWs.

Discussion Garning early and broad-based support from employers, employees, governmental administration, human resources, and occupational health appears to be important for development of a SI vaccine mandate.

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WORKPLACE MEASLES: RISK ANALYSIS & MATERNITY PROTECTION – A REVIEW OF LITERATURE

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Introduction Measles is one of the most transmissible and highly communicable human infectious diseases known. It has a 90% secondary attack rate and the reproduction number is around 17. It is probably the most deadly of all childhood rash/fever illnesses. Since 2008 a rise in measles cases has been reported with outbreaks in 36 European countries.

Methods A review of literature generated 85 articles of interest and were consulted for this review.

Result Risk analysis shows that schools play a crucial role in the transmission chain of measles. At highest risk are infants under one year of age, adolescents and young adults. The risk is the highest in the part of the population that typically constitutes the engine of airborne transmission through social contacts at child-care, school, and within and between households. A catch-up campaign focusing all young adults and school personnel is necessary to achieve elimination in the short term. Health care workers (HCWs) are at substantially higher risk (2–13 times) than the general population for becoming infected with measles. Waning immunity in these HCWs will increase the risk of nosocomial infections. Nosocomial outbreaks are also exacerbated by atypical presentations of the disease.

Pregnant women with measles had significantly higher risks of adverse maternal, fetal, and neonatal outcomes like sudden spontaneous abortions, stillbirth, early fetal death, and premature deliveries. Measles in pregnancy is complicated by a high maternal morbidity and mortality rate.

Discussion To achieve 'herd immunity', more than 95% of the community must be vaccinated with 2 doses. For those unprotected, in doubt about clinical measles in anamnesis, in doubt about vaccination status or undocumented vaccination with 2 doses of measles containing vaccination, it is necessary to provide two doses with an interval of one month. Special focus on young adults among kindergarten, (pre)school personnel and HCWs is necessary.

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INFLUENZA INFECTION AND IMMUNISATION COVERAGE AMONG HEALTHCARE PROFESSIONALS IN NATIONAL GUARD HOSPITAL, WESTERN SAUDI ARABIA

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Introduction Burden of influenza infection among healthcare professionals (HCPs) is high including transmission to high risk and severely-ill patients. This chart review aims is to record laboratory confirmed influenza cases and influenza immunisation coverage among HCPs in Ministry of National Guard hospital, a 500-bed tertiary care hospital, in western Saudi Arabia.

Methods Laboratory confirmed influenza cases among healthcare professionals from June 2014 – June 2017 were reviewed. Influenza immunisation and reasons of declining to receive the vaccine were recorded.

Results During the study period, 78 HCPs had laboratory confirmed influenza (9.1% of all confirmed cases). There were 18 HCPs with H1N1 (8.1%), 43 with influenza A (11.1%) and 17 with influenza B (6.8%). In the meantime, influenza immunisation coverage ranged from 33%–64% among physicians, 80%–93% among nurses and 32%–41% among paramedicals