

We also find that regardless of which occupation is vaccinated first, vaccinating those with many contacts to other individuals or randomly chosen individuals is inferior to vaccinating those with large so-called betweenness centrality, which measures how much an individual mediates communication between individuals. These results stem from the hierarchical and modular structure of the contact network of the hospital, in which dense substructure such as departments, wards, and rooms are globally but only loosely connected.

Conclusion: This study sheds light on the effect of network structure on nosocomial infection. By removing shortcuts between wards, which are owned by doctors, it is possible to reduce the risk of nosocomial outbreaks.

doi:10.1016/j.ijid.2008.05.926

64.007

Health Care Worker Immune Status and Risk Perception of Acquisition of Vaccine Preventable Diseases

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Background: Health care workers (HCW) are more exposed to infectious diseases than the general population. They can become infected or transmit infection to patients and other HCW. Many infections can be prevented by vaccination. This study evaluated HCW immune status and risk perception of acquiring vaccine preventable diseases from a tertiary university hospital in São Paulo, Brazil.

Methods: Questionnaires were distributed to 187 HCW (physicians, nurses and housekeepers) equally distributed among hospital units. Individuals were chosen at random, in a convenience sample. Participants were asked about the risk perception of acquisition of vaccine preventable diseases in the workplace. After an open-ended questionnaire, close-ended queries were posed. HCW who reported diseases in the past or were previously vaccinated were considered immunized.

Results: Participants mean age was 33.2 years, 74% were female, 16% were housekeepers, 49% were nurses or nurse assistants and 35%, physicians. The diseases most spontaneously mentioned as at risk for acquisition in the workplace were: hepatitis B (77.5% of individuals), tuberculosis (47.6%), meningococcal disease (32.8%), influenza (21.9%) and varicella (20.3%). When specifically asked about each disease, the most commonly mentioned were hepatitis B (94.1%), influenza (92.5%), meningococcal disease (90.3%), tuberculosis (85.0%) and varicella (72.7%). Previous disease or vaccination were referred for tetanus (87.7% of individuals), measles (86.6%), mumps (85.6%), rubella (85.0%), hepatitis B, (82.4%), varicella (82.9%), diphtheria (81.8%). Only 51.3% were vaccinated against influenza during the last season. Housekeeping staff were less immunized than nurses and physicians ($p < 0.05$ for hepatitis B, measles, mumps, rubella, varicella, diphtheria), except for tetanus ($p = 0.912$) and influenza ($p = 0.214$).

Conclusions: HCW have a good risk perception of acquiring vaccine preventable diseases. Coverage rate was high for most vaccines. However, educational programs should aim

at housekeeping staff in order to increase their vaccination coverage.

doi:10.1016/j.ijid.2008.05.927

64.008

Health Care Workers Occupational Accidents in a Brazilian Hospital

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Background: Percutaneous or mucosal contact with infective materials can potentially be a source of transmission of infectious agents such as hepatitis B, hepatitis C and human immunodeficiency virus. Health care workers (HCW) are more exposed to accidents with blood, tissues or body fluids than the general population.

Methods: One hundred and eight-seven HCW from the Federal University of São Paulo, Brazil, were interviewed. They were divided into three professional categories: physicians, nurses and housekeeping staff. The questionnaire was equally distributed in different hospital units and individuals were chosen at random as a convenience sample. Information on accidents involving biological material at their workplace and procedures was collected.

Results: Sixteen percent of HCW were housekeepers, 49% were from the nursing staff and 35% were physicians. The majority of them were female (74%) with mean age of 33.2 years (range: 22.2 to 63.8). Sixty-one professionals (32.6%) reported percutaneous or mucosal accidents. Nurses had a tendency to more occupational injuries (38.5%) than physicians (31.8%) and housekeepers (16.7%) (Chi-squared test: $p = 0.087$). After the accidents, 83.6% of HCW referred having notified the Hospital Control Infection Committee. The percentage of notifications by nurses (94.3%) was higher than by housekeepers (80.0%) and physicians (66.7%) (Fisher's exact test: $p = 0.022$). Upon accident notification, individuals were submitted to serological tests, two HCW received hepatitis B vaccine, one received hepatitis B immune globulin and 11 received antiretroviral prophylaxis. Of note, among 187 participants, 2 had already had hepatitis B through natural infection, 152 had received 3 or more hepatitis vaccine doses, 31 received 1 or 2 doses and 2 professionals had not received any vaccine dose.

Conclusions: In our sample, nursing staff had more percutaneous or mucosal accidents than other professional categories. Despite recommendations, some HCW did not notify their occupational accidents, especially physicians. Professionals had high hepatitis B vaccination coverage.

doi:10.1016/j.ijid.2008.05.928