

**Abstract:**

**Background:** Healthcare workers are habitually in direct contact with patients, possible carriers of infectious diseases and with potentially infectious biological materials; therefore, the implementation of standard precautions and good working practices represent an intervention strongly recommended by the Centers for Disease Control and Prevention, and required by Italian law, for the prevention of professional cut wounds. The study focused on assessing the exposure frequency and factors related to biological injuries among healthcare workers in a teaching hospital in Palermo, Italy.

**Methods:** We performed a 14-years retrospective descriptive analysis on blood and body fluids exposures in healthcare workers, documented by questionnaires administered at the time of injury and by data collected during the follow-up period. The questionnaire included questions concerning personal data (age, sex), job position (role, employment contract, ward), biological exposure (type of exposure, devices used and circumstance of blood and body fluids exposure), precautions adopted (personal protecting equipment, safety devices) and vaccination status.

**Result:** A total amount of 899 healthcare workers was investigated. The incidence rate per 100 beds was 10.7. Frequency of exposure to blood and body fluids among healthcare workers was 35.3% in nurses, 31.7% in physicians, 17.6% in students. The mean age of injured healthcare workers was 36 years. The most common blood and body fluids exposures were represented by needlestick injury (76.2%), splash and spill (15.0%) and sharp (8.3%). 585 out of 685 percutaneous exposures were caused by needles (syringe, peripheral venous catheter, butterfly needles, etc.) and occurred mainly to nurses (N=224, 38.3%), physicians (N=184, 31.4% of whom resident physicians=122, 20.1% and hospital doctors=62, 10.6%), students (N=96, 16.4%) and auxiliary personnel (N=77, 13.1%). No seroconversion among exposed healthcare workers was recorded in the whole survey period. Twenty-four healthcare workers (2.6%) received post-exposure prophylaxis against Hepatitis B Virus.

**Conclusion:** To our knowledge, this is the first long-term survey on blood and body fluids exposure in Southern Italy. Nurses are the most commonly affected group by biological injuries. Resident physicians and students follow the nurses probably due to a lack of training and experience about biological risk. These last two groups, however, seem to have more awareness of blood and body fluids exposures to which they are susceptible during their training cycle; in fact, they mostly use personal protective equipment compared to other healthcare workers. The blood and body fluids exposures are a preventable and a major occupational hazard in healthcare. This focus highlights the need for interventions to

enhance the occupational safety of workers and students.

**Reference:**

Maida CM, Aprea L, Calamusa G, Campisi F, Favaro D, Russo Fiorino G, Fodale AM, Maniglia ML, Marchese V, Velardo MM, Torregrossa MV. Blood and body fluids exposure of healthcare workers in a university hospital of Palermo, Italy: a fourteen years long surveillance. Clin Ter. 2020 Sep 30. doi: 10.7416/ai.2020.2380. Epub ahead of print. PMID: 33029611.