Suboptimal vaccination coverage of nursing and auxiliary staff in a tertiary University Hospital

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Background

Health-care workers (HCWs) are exposed to infectious diseases and are considered to be at increased risk for significant morbidity or even mortality for both themselves and susceptible patients.

HCWs have been reported to be the primary source of infection in several outbreaks of vaccine-preventable diseases (VPDs), including pertussis, measles and influenza.

The rationale for immunization of HCWs is based on self protection as well as indirect protection of susceptible patients from health-care associated VPDs, especially those at high risk for serious complications.

The aim of this study was to record vaccine coverage against VPDs of the nursing and auxiliary staff working in the only tertiary hospital in Crete.

Methods

Data were obtained after a personal interview with each employee based on selected relevant questions about recommended vaccines (against influenza, hepatitis B, tetanus-diphtheria, pertussis, MMR, varicella and meningococcus) and natural immunity, if relevant. Vaccination records were assessed if present. Interviews took place from August to November 2017. The interview was taken by the same person for each study participant. The study was approved by the Ethical Committee of the University Hospital of Heraklion.

References

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Results

Data were collected from 823 out of a total of 851 individuals (response rate 96.6%).

Self-reported vaccination rate for hepatitis B vaccine was 80.4%, for tetanus-diphtheria 56%, with 63.3% among vaccinated staff having received the vaccine more than ten years ago (Fig 1).

19.6% of workers were vaccinated with MMR, and another 38.1% and 46.8% had reported to be naturally immune for mumps and measles, respectively (Fig 1).

Vaccine coverage for pertussis was as low as 0.2%, while 4.7% reported immunization against hepatitis A (Fig 1).

Influenza vaccine uptake ranged from 13.2% (2012) to 20.3% (2017), with only 8.7% having been vaccinated each year (Fig 2). Younger employees (<40 years) were overall better vaccinated (Fig 3).

Fig 1. Vaccination coverage in HCWs for recommended vaccines, except influenza

Fig 2. Influenza immunization through years

No difference was found for HCWs from Intensive Care Units and Oncology Department, with the exception of vaccine coverage for MMR, found to be higher in ICU and Departments with immunocompromised patients ($p<0.01$), probably due to younger age of HCW in these units.

Discussion

Although current immunization programmes worldwide have incorporated special recommendations for HCWs, several studies have indicated low vaccination coverage of HCWs mainly due to knowledge gaps and misconceptions.

Some discrepancies exist in vaccination rates among countries, but generally vaccine uptake is considered suboptimal among HCWs.

Campaigns have not been successful in optimizing coverage, as shown from the example of influenza vaccine. Mandatory policies only have resulted to optimal uptake. Vaccine uptake convenience may increase coverage, as shown in this study with the rise of immunization rates following hospital-based immunization practices.

The present study had a significantly high response rate and the limitation of being based mainly on self report. In-hospital vaccination records and reminder systems are generally lacking, but could be helpful.

Conclusion

Vaccination rates for vaccine-preventable diseases among the nursing and auxiliary staff of a tertiary hospital are suboptimal, despite vaccine promoting campaigns, implicating the need of alternative vaccination strategies and occupational policies for HCWs.

Fig 3. Immunization rate according to age, among immunized individuals