Infectious Disease Surveillance In Peruvian Navy Ships

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OBJECTIVE

The objective of this research is to describe infectious disease surveillance on military population on board ships.

BACKGROUND

Confined settings are prime location factors for the rapid transmission of infectious diseases, particularly those with person-to-person or air-borne transmission. Military populations are extremely susceptible to this kind of infectious agent due the special features of their environment. All personnel are assigned to one unit, which allows a close proximity between the members; favoring the spread of respiratory agents [1]. Ships are an example of this, due the close contact between the crew, especially during sea deployments missions. The impact of a disease like influenza can affect the functioning of the unit, provoking not only severe symptoms in the affected population but also loss of work days, which in some cases can severely affect the mission [2,3]. Since July 2005, Peruvian Navy ships were incorporated into Alerta, an electronic surveillance system, which receives reports of infectious diseases and injuries by internet or phone, providing information in real-time, detecting outbreaks and allowing us to design preventive and control measures. .

METHODS

Health care personnel of 37 ships were trained to report daily or biweekly according to the disease to the Alerta system. Data from July 2006 to December 2007 were reviewed. Data were described in terms of number of events reported, mean number of cases per ship, and mean number of cases per ship per week.

RESULTS

Seventy-five epidemiological weeks were included in the study. Reports from the ships constitute 27.99% (n=5716) of all reports received during the period of study (including reports from health units, reference hospitals, surface facilities). The most frequent events were acute respiratory infections (54.13%) and acute diarrheal disease (24.6%). 7 tuberculosis cases, 2 sexual transmitted diseases, one brucellosis and one leishmaniasis case was also notified (Fig 1). The report on average time for this period was 68% and the mean error rate was 0.022. Average number of Acute respiratory infections (ARI) and acute diarrhea disease (ADD) cases per week were 41.25 and 18.75,

respectively. We observed seasonal patterns for both diseases during epidemiological weeks 34-46 for ARI and 32-45 for ADD. These increases correspond with sea deployments for many of these ships.
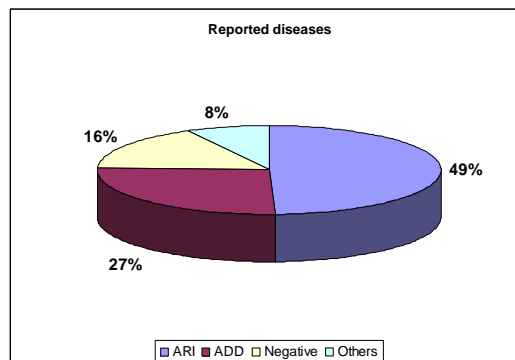
Figure 1. Most frequent reports from ships during July 2006 to December 2007

CONCLUSIONS

The Alerta electronic surveillance system has improved appropriate actions, risk communication and management by healthcare personnel on shipboards, leading to more timely investigations and enhanced support by public health authorities. ARI represent the main burden of disease in this population. In addition to seasonality effects, sea deployments appear to be a significant risk factor likely due to increased contact between personnel. Nevertheless, it is necessary to improve the surveillance in this population, through the addition of laboratory diagnosis for the rapid diagnosis of diseases like influenza, which can severely affect the operational capabilities of this population, and also take preventive measures like influenza vaccination for example due the high transmissibility in this setting.

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