

Brief report**An Influenza outbreak among navy personnel at the Navy General Hospital, Colombo in May 2022**Botenne CS¹, Kodithuwakku WKKDCD², Jayamaha CJS¹*Sri Lankan Journal of Infectious Diseases 2025 Vol.15(1):69:1-4*DOI: <https://doi.org/10.4038/sljid.v15i1.8707>**Abstract**

The prevalence of acute respiratory tract infections among military personnel has historical roots dating back to World War I, causing significant challenges to armed forces globally. Large scale influenza pandemics have been rare since then. However, mild to moderate respiratory outbreaks persist within the military settings due to various reasons. This brief report elaborates such an influenza A outbreak that occurred among navy personnel in May 2022.

Of 141 navy personnel who presented to the fever clinic, 18 samples were analysed, of which 13 became positive for influenza A (H3). Most of them complained of fever. None of the navy personnel positive for influenza A were admitted to the Navy General Hospital, Colombo (NGHC). This outbreak was successfully contained with stringent infection control practices implemented since the SARS-CoV-2 pandemic and highlights the need for ongoing surveillance and vigilance to prevent resurgence of influenza outbreaks in military settings in future.

Key words: Influenza, outbreak, SARS-CoV-2, Real-Time Polymerase Chain Reaction, Navy

Introduction

The history of close association of the armed forces with acute respiratory tract infections dates back to the period of World War I (1918 to 1919), when the influenza A H1N1 pandemic among military personnel caused a significant loss of young lives in European countries.¹ During the H1N1 pandemic in 2009, the U.S military reported about 200 to 300 cases per week of which 20 to 30 were admitted to the hospital.² However, from 1998 to 2014 there have been only nine influenza associated deaths, three of which occurred from 2009 to 2010.³ Although such influenza pandemics have been rare in the recent past, many countries have reported outbreaks of respiratory tract infections of mild to moderate degree in military setups over the past few decades. Confined living conditions, higher demand for physical training and psychological stress factors have

¹ Medical Research Institute, Colombo, ² Navy Hospital Eastern Command

Address for correspondence: C.S. Botenne, Medical Research Institute, Colombo.

Telephone: +940712017797 email: chethuminib@gmail.com  <https://orcid.org/0009-0005-2887-1646>

Received 28 May 2024 and revised version accepted 5 Sept 2024. Published on 6.2.25



This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

contributed to the frequent occurrence of acute respiratory tract infections including influenza in military training environments.²

In this context, we reviewed details of an influenza A outbreak that occurred in May 2022 among navy personnel who presented to the fever clinic at the Navy General Hospital Colombo (NGHC), with the aim of describing the relevant demographic factors of this study cohort, and control measures that possibly curtailed the outbreak.

Methods

All 141 navy personnel who presented to the fever clinic during the month of May 2022 with flu-like illness underwent SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus-2) rapid antigen test which were negative. Subsequently, 18 nasopharyngeal samples from the navy personnel were sent to the Medical Research Institute. Those samples were initially tested for SARS-CoV-2 using a real-time PCR (polymerase chain reaction) assay (Altona, GmbH) and then were subjected to influenza A/B real-time PCR assay (CDC- Centers for Disease Control & Prevention). Influenza A positive samples were sub-typed using CDC real-time assay subsequently.

Following detection of 13 positive cases for influenza A, details of all navy personnel who had flu-like symptoms were extracted from previous clinic records at the fever clinic.

Results

Table 1: Characteristics of the study participants		
Characteristic	Number	Percentage
Sex		
Male	125	88.6%
Female	16	11.3%
Age - no data for four samples		
≤ 30 years	59	41%
> 30 years	78	55%
Symptoms		
Fever	127	90%
Cold	26	18.4%
Cough	17	12%
Sore throat	12	8.5%
Influenza PCR Results		
Positive	13	72.2%
Negative	5	27.8%

Of the 141 navy personnel, 88.6% were males and 11.3% were females, while 55% were above 30 years of age and 41% were 30 or less than 30 years of age (Table 1).

Out of this cluster, 90% reported fever, 18.4% had symptoms of the common cold, 12% had cough, and 8.5% reported a sore throat. Only 13 (9.2%) navy personnel were admitted to the NGHC and of them, two were managed as dengue fever, one as SARS-CoV-2 and the rest as nonspecific viral fevers.

Of the 18 samples tested at MRI, all were negative for SARS-CoV-2 and 13 (72.2%) were positive for influenza A subtype H3. All 18 samples belonged to males. All the patients who were positive complained of fever and symptoms of the common cold. Eight complained of a cough while two had sore throat. None of the laboratory confirmed cases were admitted to the NGHC.

Discussion

During this outbreak, only some were admitted to the hospital depending on their initial presentation. All recovered without any complications, and none were given oseltamivir. Instead, they were managed symptomatically. Infection control practices implemented during the SARS-CoV-2 surge played a major role in curtailing this outbreak within the Navy General Hospital. Infection control practices were strictly adhered to by the staff of the Navy General Hospital, and they were regularly monitored. Health education programmes conducted during the outbreak helped early identification of suspected cases. Therefore, those who had flu-like symptoms reported to the fever clinic early for screening. Trained infection control nurses and public health inspectors were allocated for each base, and they conducted monthly education programmes. Hand washing areas were established along with posters displaying guidelines on proper hand washing technique. Posters regarding wearing masks and maintaining social distance were also displayed. The Infection Control Unit of the hospital was able to ensure a continuous supply of hand sanitizers and soap without any obstacles. With these, the authorities were able to successfully manage the outbreak within two months.

Sri Lankan seasonality of influenza has a bi-modal pattern, with peaks occurring in May to June and November to January.⁴ We do not know whether this outbreak occurred coinciding with the seasonality or independent of it, as the data from the navy hospital was not available throughout the year. However, it is prudent to anticipate a high prevalence among armed forces during the two peaks of the seasonality to mitigate possible outbreaks in future.

A limitation of this study is that we could not look for bacterial and other respiratory viruses like adenovirus, which gives rise to respiratory tract infections which would provide different insights into aetiology, severity and outcomes in this setting.

It is to be noted that these findings highlight the potential benefits of proactively administering the inactivated influenza vaccine in controlled environments during the peak influenza season as a preventive strategy. This approach may help reduce the spread of the virus and protect at-risk populations by enhancing immunity before the peak of the outbreak.

Conclusion

This brief account highlights the key aspects of the influenza outbreak in May 2022 with regard to its impact on the health of the navy personnel, their medical management as well as the infection prevention and control aspects. This demonstrated how coordinated efforts are required between curative and diagnostic health sectors to curtail the spread of the infection. However, it is to be noted that ongoing surveillance and vigilance is required to monitor the potential resurgence of influenza outbreaks in future.

Declarations

Acknowledgement: We would like to express our deepest gratitude to the technical staff at the National Influenza Centre, MRI and to the staff of fever clinic at the Navy General Hospital, Colombo.

Conflicts of Interest: The authors have no conflicts of interest to declare.

Funding: The authors received no financial support for the research, authorship, and/or publication of this article.

Ethics statement: No controls were used in this study. Samples received to the National Influenza Centre were analyzed retrospectively.

Authors' contributions: All the authors contributed to the final manuscript. Study conception and design were of BCS and JCJS. KWKKDCD conducted the data collection. BCS and JCJS analyzed and interpreted the results as well as prepared the draft manuscript. All authors reviewed the results and approved the final version of the manuscript.

References

1. Griffin HE. Influenza control in the Armed Forces. *Public Health Rep.* 1958; 73(2):145-8 No doi
2. Sanchez JL, Cooper MJ, Myers CA *et al.* Respiratory infections in the US military: recent experience and control. *Clin Microbiol Rev.* 2015; 28(3):743-800. doi: <https://10.1128/CMR.00039-14>
3. Sanchez JL and Cooper MJ. Influenza in the US military: an overview. *Journal of Infectious Diseases and Treatment.* 2016; 2(1). doi: <https://10.21767/2472-1093.100010>
4. Jayamaha J. Influenza vaccine. In: Jayasuriya L, Wimalaratne O, Perera J *et al* (eds). SLMA Guidelines and Information on Vaccines. Sri Lanka Medical Association, 2023: pp 138-145