

Epidemic Management: A Caribbean University's Response to the 2009 H1N1 Outbreak

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ABSTRACT

Background

In June 2009, the World Health Organization (WHO) declared a global influenza pandemic (1). During the throes of the epidemic, the Caribbean region recorded 22 deaths and 350 hospitalizations. Jamaica reported most of the deaths in the region – 7, followed by Trinidad and Tobago – 5 and Barbados – 3; the remaining 7 deaths occurred in other Caribbean countries (2). In June, Jamaica reported its first case (3) and some three months later, in September 2009, The University of the West Indies (UWI) Mona Campus experienced an outbreak of the 2009 H1N1 virus infection.

As one of the three main Campuses of the leading tertiary institution in the English-speaking Caribbean (others being in Trinidad and Tobago and Barbados in addition to an 'Open Campus' which serves the non-Campus territories), the UWI Mona Campus serves some 15 000 students. These students originate mainly from the Caribbean; North American and African students also comprise the student population. The University Health Centre provides primary care services to a community of students, staff (3000) and their dependents, retirees, visiting staff and students.

Keywords: H1N1, response, university

Manejo de las Epidemias: una Respuesta de la Universidad del Caribe al Brote de H1N1 de 2009

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RESUMEN

Antecedentes: En junio de 2009, la Organización Mundial de la Salud (OMS) declaró una pandemia mundial de gripe (1). Durante la agonía de la epidemia, la región del Caribe registró 22 muertes y 350 hospitalizaciones. Jamaica reportó la mayor parte de las muertes en la región, 7, seguida de 5 en Trinidad y Tobago y 3 en Barbados; las restantes 7 muertes ocurrieron en otros países del Caribe (2). En junio, Jamaica reportó su primer caso (3) y unos tres meses más tarde, en septiembre de 2009, la Universidad de West Indies (UWI) Mona Campus experimentó un brote del virus H1N1 de 2009.

Como uno de los tres campus principales de la principal institución terciaria en el Caribe de habla inglesa (los otros dos en Trinidad y Tobago por un lado, y Barbados por otro, además de un 'Campus abierto', que sirve a los territorios sin campus), el campus de Mona, en UWI, presta servicio a unos 15000 estudiantes. Estos proceden principalmente de la región del Caribe; Estudiantes norteamericanos y africanos comprenden también la población estudiantil.

El Centro de Salud de la Universidad brinda servicios de atención primaria a la comunidad de estudiantes residentes, al personal (3000) y sus dependientes, jubilados, así como al personal y los estudiantes de visita.

Palabras claves: H1N1, respuesta, universidad

West Indian Med J 2011; 60 (2): 203

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Epidemic Management: Strategies and Questions

The World Health Organization (WHO) has increasingly recognized the importance of communication as a critical component of the management strategy for epidemic management (4). This is in addition to the essential features such as laboratory analysis and the availability of epidemiological evidence. Communication is an important tool to secure public trust and participation which will assist in limiting mortality and morbidity and quickly containing an outbreak. Shaban, Editor of the Australasian Emergency Nursing Journal (5), thought that the 2009 H1N1 outbreak offered an opportunity to explore some key issues. These included documenting (a) best care practices, (b) the success of pandemic plans and (c) recommendations for the future management of influenza infections. In recognition of the fact that the University campuses around the world have experienced outbreaks of communicable diseases including influenza-like illnesses (6, 7, 8, 9), this paper will share the epidemic plan of the UWI Mona campus. The goal of documenting and sharing this experience is that it offers an opportunity to replicate the epidemic plan in other University settings which face similar risks.

The UWI Mona Experience

The University Health Centre first noticed an increase in the number of cases of flu-like illnesses. The University administration was alerted to this increase at the first sign of the outbreak, on the weekend of August 30, 2009. The persons affected were University students who resided in university accommodation on Halls of Residence. These instances were first reported to the Student Service Managers who manage these facilities. Contact was made with the University Health Centre which immediately activated the epidemic plan. The key features of the epidemic plan involved communication, conducting active surveillance, stocking antiviral medications, activating the health service emergency plan (*eg* extending regular work hours and reassigning staff) and instituting public health measures (*eg* active surveillance, issuing of face masks to front-line staff and cessation of flu vaccinations). The University Health Centre (which operates limited hours on a weekend) extended its opening hours to facilitate the examination and treatment of suspected cases. Initially, a few excess cases were referred to the University Hospital of the West Indies (UHWI) which adjoins the UWI, but thereafter, only the more serious cases were referred to the UHWI. The outbreak on the Mona Campus occurred over the two-week period August 30 – September 11, 2009. Case definition was guided by the Centers for Disease Control (CDC) published definitions (June 1, 2009) [with minor modifications] (10).

The University's senior administration (the Campus Principal) led the charge by calling an emergency meeting of the top leadership in key departments. These included the Campus Registrar, Campus Bursar, University Health Centre, the Office of Student Services and Development, the

Department of Community Health and Psychiatry, the Public Relations Office and the Estate Management department (responsible for the maintenance of University facilities). Initially, daily meetings were held with the heads of these departments/units to review the management of the epidemic. Thereafter, when the epidemic was at its peak, weekly meetings were held.

The Office of the Clinical Director of the University Health Centre co-opted a multi-sector task force inclusive of student and staff groups to manage the epidemic. The role played by each group was very specific as described below.

Office of Student Services and Development – Student Services Managers assisted in coordinating prevention activities on the Halls of Residence and communicating with students. *Guild of Students* – as the leadership of the student body, Guild Executives were critical in providing information to the management team as well as disseminating information to the student body.

UWI Student Emergency Response Team (UWISERT) – UWISERT is a group of students trained in emergency response procedures. They assisted in operating Medical Posts on the Halls of Residence for students and providing emergency care for sick persons. Medical posts could be accessed by both resident and commuting students.

Public Relations Office – this office bore the responsibility of communicating with the University community and the public on the outbreak and all the steps taken to contain the outbreak.

Department of Community Health & Psychiatry – this department worked closely with the Health Centre to assess the public health implications of the outbreak.

Estate Management Department – played a key role in installing and distributing supplies to departments across the Campus (*eg* hand sanitizers, cleaning agents).

Ministry of Health – supported the efforts by providing personnel to operate the Medical Posts on the Halls of Residence, as well as providing treatment protocols and medical supplies.

The UWI Mona Epidemic Plan – Documenting the Management Process

1. Establishment of a Command Post at the Health Centre
The Command Post was responsible for developing a database of all reports of flu-like symptoms. The database captured the major symptoms such as fever and flu-like symptoms (*eg* cough and sore throat, runny or stuffy nose, body aches, headache, chills and fatigue), socio-demographic data, travel history and contact history. Data were gathered from the Medical Posts, the University Health Centre and the University Hospital of the West Indies (UHWI). Staff of the Health Centre were apprised of the outbreak at the outset. Daily meetings were held with the core group which included medical and nursing staff, while general staff briefings were held weekly.

2. Establishment of Medical Posts on Halls of Residence
 Medical Posts were established on the six Halls of Residence. Personnel at these posts collected information on students reporting flu-like symptoms and reported this to the Health Centre. Self-isolation was recommended for those reporting flu-like symptoms. They were asked to remain in their rooms for a period of seven days. They were encouraged and supported in various ways. Student Services Managers monitored students in self-isolation, fellow students checked with them regularly, meals were brought to them in their rooms, students were able to use their cell phones to maintain contact with family and friends. These measures helped to reduce any stigma associated with their illness and kept them in contact with the University community.

3. Management protocol

i. Laboratory Testing

Special interventions were initiated to facilitate the quick turn-around time for the testing of specimens sent to the UHWI. Of the suspected cases tested, 60%–80% [6 positive and 2 for repeat tests] (6–8 of 10) were positive for H1N1. Armed with the early confirmation of the H1N1 virus on the Campus, the University Health Centre was able to act speedily in the implementation of the management protocol.

ii. Treatment protocol

Persons presenting with flu-like symptoms were seen by the medical and nursing team and given the appropriate treatment. Specimens were collected based on case definition and sent to the UHWI for testing. Persons who complained of flu-like illnesses were provided with supplies of antihistamines and antipyretics. These supplies were sent to the Halls of Residence and given to walk-in clients. Persons were referred to the UHWI when deemed necessary. The Health Centre was provided with supplies of antiviral therapy by the Ministry of Health. This treatment was found to be necessary in only one case.

iii. Public Health Measures

During the two-week period, over 500 bottles of alcohol-based hand sanitizers were distributed to offices, Halls of Residence and business places on the Campus. In addition, the Maintenance Department arranged for the installation of dispensers containing hand sanitizer fluid. These were placed at the entrances to offices, lecture theatres and Halls of Residence across the Campus. Written instructions on the use of hand sanitizers were also issued to administrative officers in each department or Hall of Residence. Additionally, across the Campus, a staff member in each department was assigned to clean the doorknobs to reduce transmission of the H1N1 virus. Social events on the Campus were postponed for a seven-day period following the confirmation of cases of H1N1. Collaboration with the Guild of Students and Halls of Residence was critical in this endeavour, as the social calendar is usually very busy at the

start of the academic year. Non-critical University meetings were also discouraged. Consideration was given to making course materials available online to discourage unnecessary traffic to the Campus.

iv. Public Health Messages

The key public health message was one of prevention. Persons were encouraged to practise prevention by regular washing of hands with soap and water, use of alcohol-based hand sanitizers, covering of mouth and nose with tissue when coughing or sneezing, immediate disposal of tissue with respiratory mucus, limiting contact with persons with flu-like symptoms, encouraging all members of the campus community not to touch the eyes, nose or mouth, and encouraging sick persons to remain at home until they were afebrile for at least forty-eight hours. Additionally, persons experiencing flu-like symptoms were encouraged to visit the Health Centre for medical assessments.

v. Communication

The University appointed a single officer to communicate updates on the management of the epidemic with the University community as well as the public. This officer was the Clinical Director of the University Health Centre who was a recognized, credible authority and public health figure on the Campus. She provided a consistent voice and a consistent message. This strategy served to enhance the acceptance of the message by the University community and also the public. Various modes of communication were used. These included a video which was posted on YouTube and prime-time hour interviews on all the major radio stations. This effort was further supported by the Public Relations department which issued press releases to the mainstream media, the Campus' weekly newspaper column and the local intranet (Campus Pipeline). Senior administrators held face-to-face meetings with students in classes as well as on the Halls of Residence. Fliers produced by the Ministry of Health were also distributed to offices and Halls of Residence by the Estate Management department. The University Health Centre facilitated communication with the public, concerned parents and members of the University community through telephone contact. The Guild of Students and the Office of Student Services and Development further supported the communication programme by maintaining contact with the student body through meetings and telephone contact.

The Ministries of Health and Education were included in the key management meetings and were provided with daily updates on the management of the epidemic.

vi. Community Outreach

The University recognized that the community surrounding the UWI Mona Campus was of critical importance in the epidemic management, given that it is a key corridor for staff and student traffic. Many staff members as well as students

reside in these communities. Community members also access healthcare at facilities on the Campus. The community was included in the communication programme and was assured of the University's support in the event of an outbreak.

Epidemic Trends

Using the CDC case definitions, there were 102 suspected cases of the H1N1 virus for the period August 30 – September 15, 2009, with nine (9) confirmed cases reported by the UHWI. Transmission was largely among the student population. The majority of those affected (96%) were resident on Campus at the time of the outbreak.

Figure 1 indicates the pattern in the number of new suspected cases of H1N1 by date of symptom onset. The

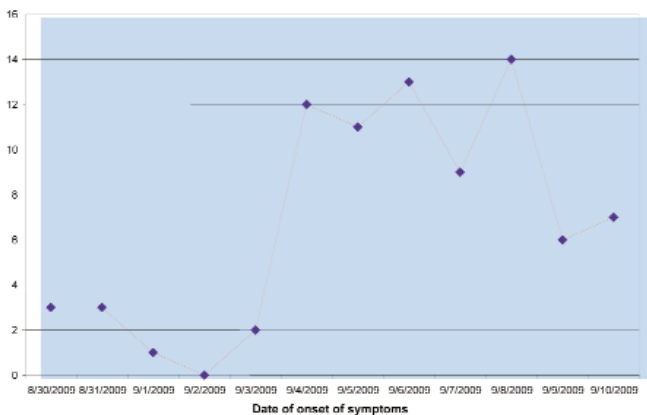


Fig. 1: Number of new suspected cases by date of onset of symptoms

graph is a classic epidemic curve. There were a few initial suspected cases, followed by an acceleration in the number of these cases and a subsequent decline. The overall pattern was consistent with that of a propagated epidemic (continued person-to-person transmission) but not from a common source. Fig. 2 shows the cumulative distribution of suspected

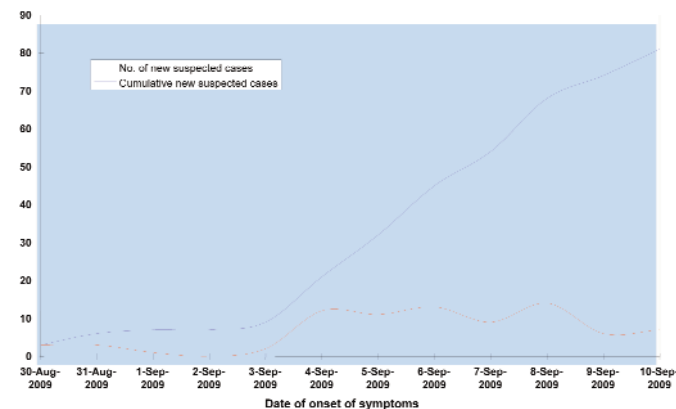


Fig. 2: Distribution of new suspected cases by date of onset of symptoms.

cases as well as the incidence of suspected cases by date of symptom onset. The slope of the cumulative trend graph provides some information on the rate of increase in the number of suspected cases. The most rapid increase occurred between September 3 and 8, 2009. Subsequently, there was a decline in the rate of increase of cumulative suspected cases. However, a clear plateau had not yet been established. In terms of incidence, the corresponding decline in the number of new suspected cases between September 10 – 13, 2009 (steadily declining from 11 to 1 over this period) was considered a positive and encouraging sign, a portent of the end of the outbreak.

Strategies for Successful Outbreak Management

Strategies to contain the epidemic were focussed on a multi-sector approach through coordinated and integrated planning and action. The utilization of basic public health and surveillance procedures and the most updated in-country management protocols (including treatment guidelines) served to strengthen the University's response to the epidemic. The University's senior administration and Health Services, the Ministries of Health and Education and the University community were integral to epidemic management.

Institutionalized settings represent prime opportunities for disease outbreaks which are very costly and can extend beyond these boundaries, potentially becoming a public health crisis. Successful epidemic management requires the utilization of basic public health principles (*ie* case definition, early laboratory confirmation), an inclusive management approach (staff/student participation in decision-making) and multiple communication strategies.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the support of the following units/departments in managing the 2009 H1N1 outbreak on the UWI Mona Campus:

- Professor Gordon Shirley – Pro Vice Chancellor and Principal, UWI, Mona
- Dr Camille Bell-Hutchinson – Campus Registrar, UWI Mona
- Professor Denise Eldemire-Shearer – Head, Department of Community Health and Psychiatry
- Mr Vishwanauth Tolan – President of the Guild of Students and Guild Executives 2009/10
- Dr Thelora Reynolds – Director, Office of Student Services and Development (OSSD) 2009/10
- Student Services and Development Managers, OSSD
- Mrs Caroll Edwards – Head of the Public Relations Office and staff
- Mrs Kathleen Sambo – Head, Maintenance Department
- Ms Chanthal Golding – Data Collector (Graduate Student, Department of Basic Medical Sciences)

- UWI Student Emergency Response Team (UWISERT)
- Ministry of Health and the Environment

Special thanks to the healthcare team of the University Health Centre and also to the University Hospital of the West Indies.

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