

## **Oral Abstracts Session 3 Gastrointestinal/Disinfection/Sterilization Tuesday June 17, 2008 Convention Center – Room XXX**

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### **Team Approach to Rapid Containment of a Norovirus Outbreak in a Large Medical Center**

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Issue: Norovirus is a common cause of gastrointestinal illness both in confined populations and in the community. These outbreaks can be both expensive and difficult to control in a hospital setting.

Kaiser Permanente San Francisco Medical Center consists of a teaching hospital and outpatient clinics housed in 13 buildings located within a one mile radius of the hospital. On August 6, 2007, Infection Control Services (ICS) received a report of four house officers and several visitors with the onset of vomiting and diarrhea on the same day. The index cases were confined to a single unit, but subsequently the outbreak quickly spread to multiple hospital units and seven outpatient buildings.

Project: Under the auspices of ICS, a multidisciplinary “Norovirus Team” NT was convened; the team met twice daily for the duration of the outbreak. With the support and active participation of the hospital and medical group administration, NT rapidly deployed the following containment measures: (1) intensive cleaning protocols of all affected venues and “Restroom Rapid Response” for contaminated bathrooms by Environmental Services, (2) expert consultation with the State Department of Public Health, (3) norovirus testing by the San Francisco Department of Public Health, (4) case interviews, data management, patient protocol and educational materials for staff, patients and visitors by ICS, (5) daily epidemiological curves stratified by venue by an ICS epidemiologist, (6) querying of employees for symptoms at the beginning of each shift and restriction of food sharing by nursing managers, (7) modified services to minimize food handling in the cafeteria and during conferences by Nutritional Services, (8) screening of sick calls by staffing personnel, (9) arrangement of 48 hours of paid asymptomatic leave by Human Resources, (10) reporting of ill patients by hospital based and clinic physicians, (11) rapid evaluation of symptomatic hospitalized patients by Infectious Disease physician with institution of contact precautions as indicated, (12) screening of employees for return to work by Employee Health, and (13) informational signs and flyers by Public Affairs.

Results: Norovirus was suspected within 24 hours of the identification of the index cases. Within 60 hours norovirus genotype I was confirmed by PCR in eight of nine stools tested. One hundred and forty-two healthcare workers, seven patients and 17 visitors were identified as fitting the case definition of norovirus. The outbreak was limited to approximately 11 days, yet surveillance continued for an additional eight days. It was determined that there was no longer ongoing transmission after a second set of ten stool specimens tested negative for norovirus.

Lessons Learned: Norovirus spread rapidly through a large medical center that included both inpatient and outpatient venues. The spread may have been aided by “cross pollinators” who traveled between venues in the course of the working day. By using a team approach that involved all stakeholders from the onset of the outbreak, control measures were implemented promptly. Staff education and involvement facilitated adherence to the recommendations which limited the duration of this multivenue outbreak. Despite the size of this outbreak and transparent communication strategies, there was no media coverage of this event.