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EFFECTIVELY CONTAINING AN INFLUENZA IN AN ACUTE PSYCHIATRY WARD OF A MEDICAL CENTER BASED ON PREVIOUS EXPERIENCE

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Purpose: The implementation of infection control strategies was relatively difficult in psychiatry ward because these patients were not good for caring themselves and obeying medical orders. Therefore, the infections of influenza virus easily clustered in them. However, the outbreak could be stopped if we paid more attention to early detection and intervention of cluster.
Methods: In the acute psychiatry ward, two patients suffered from flu in four days. According to the possibility of flu clustering, four empiric strategies were listed below for the intervention of infection control: 1. Practical facility of droplets isolation and hands hygiene, 2. Restriction of patients' living range, 3. Environmental cleaning and disinfection, 4. Monitoring the health of members.
However, cases of flu were consecutively increased in this ward. The team of infectious disease control was notified for surveillance and discussion of flu clustering with key members of this department. The further resolutions from our consensus were listed below: 1. Suspending group activities, 2. Increased frequency of environmental cleaning and disinfection, 3. Practical facility of surgical mask for work, 4. Keeping distance and silent at meal.
Results: After our interventions, there was not a new case found. Only one case was proven as influenza virus type A by the virus isolation.
Conclusions: In hospital, each member has the responsibility of infectious disease control. They should have the training to deal with abnormal events or episodes of infections in their department. If they obtain the ability and further internalized them as standard operating procedure, the cluster of flu could be controlled more rapidly.

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CONTROL OF VENTILATOR CIRCUIT TRANSMITTED *BURKHOLDERIA CEPACIA* OUTBREAK IN AN INTENSIVE CARE UNIT

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Purpose: *Burkholderia cepacia* is a nosocomial pathogen associated with outbreaks, but the exact transmission route can at times be elusive. An outbreak of *B. cepacia* persisted in an intensive care unit for six years, which was controlled by discontinuing reusable ventilator circuit.
Methods: Active surveillance for sputum cultures was performed for all patients from September 2008 to September 2009, during which discontinuing the use of reusable ventilator circuits was introduced. Sputum *B. cepacia* colonization conversion rates were compared using the Kaplan-Meier method.
Results: A total 689 patients were admitted to this unit for a mean duration of 8.7 ± 7.5 days. There were 489 patients (71.0%) with a stay for one to ten days; 161 (23.4%) patients for 11 to 20 days; and 39 (5.7%) with over 20 days. In the first group, 21.2% of patients had cultures converting from negative to positive, in contrast to 66.7% in the last group ($p < .001$). Temporal and spatial analysis showed space alone was not a significant factor for positive conversion ($p = .079$). With intervention of using disposable ventilator circuits since June 2009, the incidence of B. cepacia isolated decreased gradually ($p < .001$). The estimated 30-day isolation-free probabilities of the groups before, during, one month (2009/08) after, and two month (2009/09) after this intervention were 38.5%, 47.3%, 66.5%, and 96.0%, respectively ($p < .001$).
Conclusion: Discontinuing the use of reusable ventilator circuits halts a six-year *B. cepacia* outbreak in a medical intensive care unit.

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AN INVESTIGATION OF *BURKHOLDERIA CEPACIA* OUTBREAK IN A NICU

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Purpose: *Burkholderia cepacia* is usually found in water and it can survive for a long time in moist environments. Nosocomial infections can cause prolonged hospitalization, or even death. Pediatric outbreaks have been reported, particularly in critically ill and immunocompromised patients. Between December 2013 and May 2014, we describe the investigation of 11 premature babies who developed a cluster of *B.cepacia* infections in a NICU.
Methods: We collected environmental specimens and product samples from affected units, targeting high-touch surfaces, shared equipment, tap water and respiratory care products to the Research Laboratory. Isolates were identified to the species level using recA restriction fragment length polymorphism analysis. We also reviewed adherence to hand hygiene and isolation precautions, environmental cleaning, and respiratory equipment disinfection.
Results: There were 3 cases infected by *B.cepacia* during April 2014. The cultures from the environment, also found *B.cepacia* in the incubator, ventilator tubes, temperature seniors of moist filter. At that time, we changed ventilator tubing, emphasized the hand hygiene. After we re-sterilized the environment and changed ventilator tubing, a new infection by *B.cepacia* occurred on May 22, 2014.We examined the environment again and *B.cepacia* was yielded from faucet cultures. We speculated the contaminated faucets were the main source of infection. The end, we changed all the faucets and formulated a policy for faucet cleaning and water quality monitor. From June to October 2014, there was no further *B. cepacia* infection. Subsequent DNA analysis using PFGE disclosed the same DNA among these cases(Figure 1.).

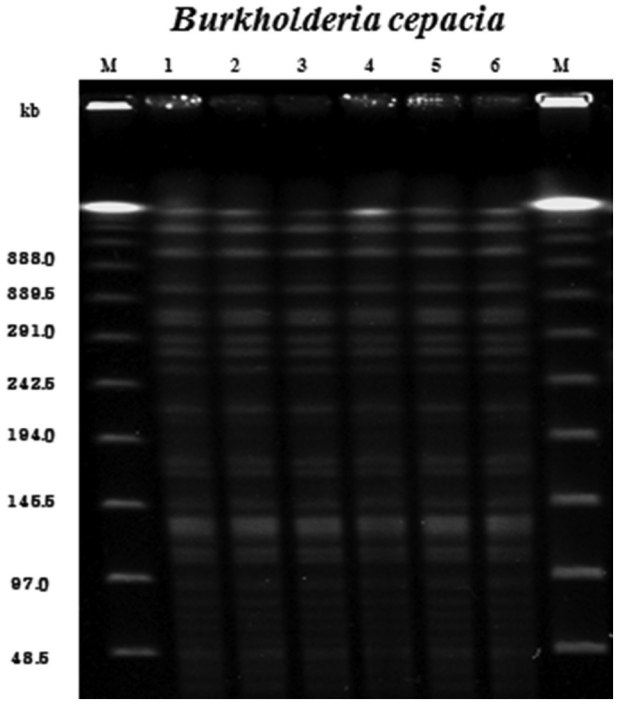

Figure 1 Pulsed-field gel electrophoresis profile of 6 case.

Conclusions: This experience, tells us the importance of faucet cleaning, especially in the high risk care unit. These units should formulate faucet cleaning policy, which can reduce water-related opportunistic infections.