Institutional Chickenpox Prevention Programme (ICPP) in a tertiary care hospital in Singapore: Lessons from epidemiology and contact tracing


1 National University Hospital, Singapore, Singapore, Singapore
2 National University Hospital, Singapore, Singapore
3 National University of Singapore, Singapore, Singapore
4 National Public Health Laboratory, Singapore, Singapore
5 National University Health System, Singapore, Singapore

Background: Chickenpox vaccination in Singapore is not mandatory. At the National University Hospital (NUH), nosocomial transmission has led to a sentinel event and secondary cases. To prevent future transmissions, we studied the impact of Institutional Chickenpox Prevention Program at NUH.

Methods & Materials: NUH is a 1000 bedded tertiary care hospital in Singapore, with negative pressure isolation capability in 179 rooms and staff strength of approximately 7300. A retrospective audit of contact tracing data was done from January 2010 to June 2014, with probabilistic modeling to predict costs and number of future varicella infections. Data was obtained from clinical records, hospital information systems and the human resource department.

Results: There were 51 cases of chickenpox including 15 staff (average 11.3 cases per year in total, 3.3 per year among staff). One index resulted in secondary transmission. The median number of staff contacts per index case was 4 (IQR 2-13) with 0 (IQR 0-2) being non-immune staff contacts. Direct costs and man hours lost in high risk areas (obstetrics and oncology), were significantly higher. Current vaccination strategy A, where staff with negative or uncertain history of prior chickenpox, are screened with serum Varicella zoster virus immunoglobulin (VZV IgG) levels was compared with two scenarios B and C using probabilistic modeling. (B: VZV IgG for all existing and new staff; C: VZV IgG for existing staff with negative history and all new staff). After 10 years, expected number of chickenpox infections per year are 3, 1, and 2 under Strategies A, B and C respectively. Number of susceptible healthcare workers is 744.6 for A, 109.5 for B and 355.5 for C. Cumulative costs for Strategies B (599048 SGD) and C (496752 SGD) are 65% and 37% higher as compared to Strategy A.

Conclusion: Chickenpox adds significant burden in terms of costs and man hours lost. Current strategy relies on history and contact tracing, to keep the number of infections at 3 per year. Wider screening strategies incur greater cost, but targeted interventions such as laboratory screening for international staff and those working in high risk wards may be more cost effective.
for both permanent and temporally ICs that are socio-cultural and architecturally suitable.

http://dx.doi.org/10.1016/j.ijid.2016.02.626

Type: Poster Presentation

Final Abstract Number: 42.161
Session: Poster Session II
Date: Friday, March 4, 2016
Time: 12:45-14:15
Room: Hall 3 (Posters & Exhibition)

Modifying the existing water tap system to create a no touch, cost effective solution

G. Nakibaala
Makerere University, Kampala, Uganda

Background: Infection prevention and control is very key in health care. With the main component being the hand hygiene. Mid-1800s Ignax P. Semmelweis established that hospital-acquired infections (HAI) were transmitted via health care workers’ (HCW) hands. ... Contaminated HCW’s hands are the commonest route of HAI transmission. Nosocomial spread (patient to health care worker) in the health care setting is key in amplifying the infectious diseases outbreaks. Research shows that a hospital has a lot of infections, hand hygiene contributes about 60% reduction in infection spread. The most effective and cost efficient way to prevent the spread of germs/infections is by using soap and water. From my analysis, hand hygiene facilities like sinks and sanitisers placed in the spread of germs/infections is by using soap and water. From my analysis, hand hygiene facilities like sinks and sanitisers placed all over the hospitals have been about 40% successful since people fear to get infections from them through touch.

Methods & Materials: I took a case of referral hospitals in Kampala, Uganda and health centre IVs including the national referral hospital. I physically visited the centres and had interviews and discussions with the key persons including persons from ministry of health.

Results: Some medical facilities have washing facilities, they have constant water supply and soap. According to Infectious Disease Institute, 40% of health care workers practice proper hand hygiene. Both health care workers and patients do not want to use the tap. Research has been done and solutions put in place but they are very expensive thus ineffective in low and medium income countries. These include sensors—we have tried to adopt but the initial cost and maintenance has proved expensive. Also use of tissue is highly costly and medical personnel tend to forget using it. Even the routine rinsing of the tap after use can easily be forgotten.

Conclusion: No hand contact - Only contact with device is through a foot-pedal, no fear of infection, reducing the possibility of human error
Lower water consumption - water only runs when the pedal is pressed
Cheap - US$3 Purchase price, low production cost, lower maintenance cost and no external power required
No extra installation costs - no cost of demolishing and creating a completely new system, universal fitting

http://dx.doi.org/10.1016/j.ijid.2016.02.627

Type: Poster Presentation

Final Abstract Number: 42.162
Session: Poster Session II
Date: Friday, March 4, 2016
Time: 12:45-14:15
Room: Hall 3 (Posters & Exhibition)

Investigation of an outbreak due to Serratia marcescens in a neonatal intensive care unit in a tertiary care hospital

S. Poddar 1,∗, S. Sengupta 2
1 Institute of Child Health, Kolkata, West Bengal, India
2 Institute of Child Health, Kolkata, India

Background: Serratia marcescens (S. marcescens) is an accepted clinical pathogen, particularly in high risk settings. Numerous outbreaks have been noted particularly as bloodstream infections in NICU. It is difficult to treat because of the resistance to antibiotics including beta-lactams and aminoglycosides. We describe the epidemiological features of S. marcescens infection outbreak in a 20 bedded tertiary care NICU.

Methods & Materials: In April, 2015 we had a low birth weight baby with septicemia due to S. marcescens. It was sensitive to all antibiotics except colistin and polymyxin B. The baby received ceftaxime and gentamicin but died. After a week, within a period of 9 days 6 neonates, admitted due to other reasons [3 with hypoxic ischemic encephalopathy, 2 with very low birth weight (VLBW), 1 with meconium aspiration syndrome] were being cared for by S. marcescens sensitive. The organism was diagnosed by blood culture in Bactec 9050 system with standard protocol and sensitivity was performed according to CLSI guidelines. Promptly several environmental samples, hand swabs, IV fluid samples and rectal and oral swabs of other neonates were processed. Affected neonates were isolated and dedicated nursing staffs were allotted for them. Proper hand washing and diaper disposal were strictly emphasized.

Results: S. marcescens was obtained from a running IV fluid bottle of an unaffected neonate and from a normal saline bottle which was being used for reconstituting IV fluids for the neonates. Two VLBW neonates were found to be colonised with the same strain. One of them eventually developed sepsis with ventilator associated pneumonia with the same strain being isolated from blood and bronchoalveolar lavage fluid. No other samples revealed