

**Vancouver Island Health Authority's Response to Recommendations and Contributing Factors  
BC Centre for Disease Control Report  
"Investigation of a Clostridium *difficile* associated disease outbreak at Nanaimo General Regional Hospital August 2008"**

Recommendation	VIHA Response	Status
<p>1. VIHA provide the resources needed for an effective infection prevention and control program at Nanaimo General Regional Hospital (NRGH) to include surveillance for healthcare associated infections in particular Clostridium <i>difficile</i> Infections (CDI)</p>	<ul style="list-style-type: none"> <li>▪ Infection Prevention and Control practitioner (IPCP) position covers NRGH only- effective February 2009.</li> <li>▪ 2.0 regular FTE infection control aide positions approved and posted to replace 2.0 temporary part time positions.</li> <li>▪ Laboratory sends positive results direct to IPC printer (process in place when outbreak declared). Effective July 2008, lab sends results to printer and phones IPC practitioner to notify of results. Starting in September 2008, the lab forwarded a cumulative line listing of new cases to IPC Program daily initially and every time a new case occurred, as number of cases began to decrease. Effective October 20, 2008, clinical operating system switched from Meditech to Cerner. With this change, the lab initiated the process used in other areas of VIHA of emailing CDI positive results to the IPC practitioner.</li> <li>▪ Laboratory has changed testing processes and provides a line list of all positive c. diff results to the IPC program</li> <li>▪ Report has been developed in the VIHA Information System for IPC practitioners to run that provides them with the number of patients in a designated area who have positive lab reports to a specified organism (i.e., CDI, MRSA) – effective October 20, 2008</li> <li>▪ The Information Management Department is determining the availability of Infection Control modules/systems that can be used in VIHA.</li> </ul>	<p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>In Progress</p>
<p>2. VIHA establish a multidisciplinary committee to develop and implement a comprehensive hand hygiene program at NGRH</p>	<ul style="list-style-type: none"> <li>▪ Hand hygiene strategy has been developed <ul style="list-style-type: none"> <li>○ 1<sup>st</sup> phase: hand hygiene stations at the entrances to buildings - March 2008</li> <li>○ 2<sup>nd</sup> phase: alcohol based product available outside of patient rooms and available in patient care areas – March 2009;</li> <li>○ 3<sup>rd</sup> phase: alcohol based product available close to where care is being provided</li> </ul> </li> <li>▪ Developing hand hygiene audits in MS InfoPath for easy and timely completion and compilation of results by unit/program leaders.</li> <li>▪ VIHA is exploring the implementation of Learning management system which provides the capacity to make</li> </ul>	<p>Completed</p> <p>Completed</p> <p>In Progress</p> <p>In Progress</p> <p>In Progress</p>

	<p>learning modules available electronically and track completion of modules by staff</p> <ul style="list-style-type: none"> <li>▪ E-learning modules developed by other areas are being reviewed and revised as required</li> <li>▪ Education on hand hygiene and infection control precautions is provided in New Employee Orientation</li> <li>▪ VIHA Corporate policy on Hand Hygiene is being developed</li> </ul>	<p>In Progress</p> <p>Ongoing</p> <p>In Progress</p>
<p>3. VIHA develop an outbreak response plan for NGRH that includes establishment of an on site outbreak management team (including public health notification) and initial steps the team will take</p>	<ul style="list-style-type: none"> <li>▪ Notification of the outbreak and the immediate actions that need to be taken, such as grouping patients with symptoms together, changes in cleaning products and frequency, and whether a gown, glove, mask is worn; is emailed to all involved programs/departments</li> <li>▪ Meetings including teleconferencing with all involved programs/departments are held and deal with the status of the outbreak, any impact it has on the operations of the hospital, and actions that need to be modified or reinforced</li> <li>▪ VIHA is developing an Emergency Operations Command structure for outbreak management, which would involve all levels/areas of the organization.</li> </ul>	<p>In place prior to the review; practice continues</p> <p>In place prior to the review; practice continues</p> <p>Completed</p>
<p>4. VIHA review the environmental cleaning contract and audit their environmental services to ensure appropriate levels of staffing and cleaning protocols are being adhered to and to ensure that sufficient surge capacity is available to respond rapidly to emerging needs. Consideration should be given to development of a specially trained 'clean team' for the enhanced environmental cleaning that is needed in an outbreak such as this one.</p>	<ul style="list-style-type: none"> <li>▪ VIHA works closely with Contractor to ensure compliance with IPC Guidelines</li> <li>▪ VIHA contract managers receive weekly outbreak staffing levels</li> <li>▪ Signage is posted on the room designating if a different cleaning solution or frequency of clean is required</li> <li>▪ Contractor is required to comply with the IPC Program cleaning protocols for outbreak management</li> <li>▪ Education/training provided to housekeeping staff inclusive of infection control issues was reviewed by VIHA contract managers</li> <li>▪ VIHA has reviewed enhanced protocols for cleaning with the Contractor</li> <li>▪ Contractor has dedicated trainer and their (training) Centre of Excellence is operational at the Gorge Road Hospital site effective January 2009</li> <li>▪ Cleaning checklist is completed during outbreaks</li> <li>▪ Spot audits of cleaning are completed by IPC practitioners</li> <li>▪ Additional housekeeping staff are on-site during outbreaks.</li> <li>▪ IPC program is participating in development of RFP for housekeeping services.</li> </ul>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Completed</p> <p>Completed</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>In progress</p>

<p>5. VIHA consider measures that can be taken to modify the facility to reduce the risk of transmission of infection and improve patient, staff and visitor safety (including conversion to single or double patient rooms, modifying of wards to ensure separation of clean and dirty supplies and linens, protocols to reduce crowding in the ED and on the wards etc.)</p>	<ul style="list-style-type: none"> <li>▪ All new construction will include the IPC recommendation for predominantly single rooms, no rooms with greater than 2 patients, and all rooms to have an ensuite with toilet and sink</li> <li>▪ Separation of clean and dirty supplies, linen, and equipment has been identified through designation of areas on the unit, with notices identifying the area as clean or dirty – September 2009</li> <li>▪ Teleconferences are held that involve all levels of the organization, when the number of admitted patients in the Emergency Department reaches a designated level, to determine what actions must be taken to decrease these numbers</li> <li>▪ The IPC Program's recommendation to keep units that are on outbreak status at their normal number of beds is followed. Only when the risk in the emergency department is greater than on the outbreak unit, will VIHA administration direct to admit to that floor.</li> </ul>	<p>In place prior to the review; practice continues</p> <p>Initiated prior to the review; practice continues</p> <p>In place prior to the review; practice continues</p> <p>In place prior to the review; practice continues</p>
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<b>CONTRIBUTING FACTORS IDENTIFIED IN REPORT BUT NOT DIRECTLY REFERRED TO IN RECOMMENDATIONS</b>		
<b>Factor</b>	<b>VIHA Response</b>	<b>Status</b>
<p>1. NGRH is an older facility that is not well constructed to facilitate the prevention of transmission of infections. In particular the majority of the patient rooms are four bed wards with a single shared toilet or sets of two bed wards with a common toilet again for four patients.</p>	<ul style="list-style-type: none"> <li>▪ All new construction will include the IPC recommendation for predominantly single rooms, no rooms with greater than 2 patients, and all rooms to have an ensuite with toilet and sink</li> <li>▪ Patients who are placed on infection control precautions are provided with a dedicated toileting device, such as a commode, so that they are not sharing the toilet with anyone else.</li> <li>▪ Commodes not in use at other sites were transported to NRGH and additional bedpans purchased –September 2008</li> <li>▪ A process is in place so when a commode requires cleaning, it is placed in the dirty equipment area, and cleaned by housekeeping – September 2009</li> </ul>	<p>In place prior to the review; practice continues</p> <p>In place prior to the review; practice continues</p> <p>Completed</p> <p>Completed</p>

<p>2. There are insufficient isolation rooms on each floor to allow for rapid and effective cohorting of patients who develop diarrheal illness due to CDI.</p>	<ul style="list-style-type: none"> <li>▪ All new construction will include the IPC recommendation for predominantly single rooms, no rooms with greater than 2 patients, and all rooms to have an ensuite with toilet and sink</li> <li>▪ A guideline has been developed for staff identifying patients who should have priority to single (isolation) rooms, and when to place patients together in the same room. This is based on whether the person has diarrhea and vomiting, draining infections, or specific organisms. – June 2007</li> <li>▪ The IPC Program reiterated which patients should be given priority to single rooms, with anyone with c-diff or diarrhea having the highest priority – May 11, 2009</li> <li>▪ A Outbreak Unit was established, and all patients were transferred to this unit unless their condition required specialized care. – August 26, 2008</li> <li>▪ The establishment of an outbreak unit will be determined at the Emergency Operations Command meeting based on the number and location of cases throughout the hospital.</li> </ul>	<p>In place prior to the review; practice continues</p> <p>In place prior to the review; practice continues</p> <p>Completed</p> <p>Completed</p> <p>Ongoing</p>
<p>3. The patient rooms are small and there are no dedicated healthcare worker hand washing sinks in the rooms. There is one sink meant to be used for handwashing in many of the four bed wards however, it is inconveniently placed behind a door in one corner and in most cases is effectively blocked by the patient beds.</p>	<ul style="list-style-type: none"> <li>▪ All new construction will include the IPC recommendation for a dedicated hand washing sink in the patient room.</li> <li>▪ Provision of alcohol based product where care is provided is the 3<sup>rd</sup> phase of the Hand Hygiene strategy, currently product is available just outside each patient room.</li> </ul>	<p>In place prior to the review; practice continues</p> <p>In progress</p>
<p>4. The patient rooms have high ceilings making changing of curtains that separate the bed spaces difficult. ... This can lead to a buildup of environmental contamination or “bio-burden”, particularly of c. dif spores.</p>	<ul style="list-style-type: none"> <li>▪ The IPC Program has identified that bedside curtains are to be changed when visibly soiled and for patients on infection control droplet precautions when they are discharged or precautions are removed.</li> </ul>	<p>In place prior to the review; practice continues</p>
<p>5. There is limited access to alcohol based hand rubs (ABHR) with none at the point of care and the dispensers that were present mounted at inconvenient heights in the hallways. In addition staff complained that the dispensers splashed when used and the product was not well liked.</p>	<ul style="list-style-type: none"> <li>▪ Provision of alcohol based product where care is provided is the 3<sup>rd</sup> phase of the Hand Hygiene strategy, currently product is available just outside each patient room.</li> <li>▪ The alcohol based hand rub product has changed from a liquid to a foam product. This was done following an evaluation by unit/program staff of various products that met IPC standards.</li> </ul>	<p>In progress</p> <p>Completed</p>
<p>6. The infection control program is not sufficiently resourced ... While there was clear medical support and involvement, senior administrative support to the infection control program at the facility was not evident.</p>	<ul style="list-style-type: none"> <li>▪ See response to Recommendation 1 - Resources</li> <li>▪ During outbreaks that involve a number of units within the hospital, the Site Administrator coordinates the Outbreak meetings/teleconferences and the resulting actions.</li> <li>▪ VIHA has developed an Emergency Operations Command structure for outbreak management.</li> </ul>	<p>In place prior to the review; practice continues</p> <p>Completed</p>

<p>7. Patient care equipment that goes from patient to patient and room to room is currently not being cleaned between uses. In addition, disposable sleeves for blood pressure cuffs are not being used consistently. These may be contributing to spread of CDAD spores in the environment.</p>	<ul style="list-style-type: none"> <li>▪ Infection Prevention and Control Aide positions were introduced at NRGH. They work throughout the site to clean patient care and other equipment that does not fall in the Housekeeping contract. – October 14, 2008</li> <li>▪ The positions have now been posted as regular full time positions – November 2009</li> <li>▪ IPC guidelines have been provided to staff relating to when a blood pressure cuff needs to be dedicated to one patient, and when disposable cuffs or cuff covers (disposable sleeves) should be used – September 11, 2008.</li> </ul>	<p>Completed</p> <p>Completed</p> <p>Completed</p>
<p>8. An automated system for cleaning of bedpans was installed 2 years ago on each ward. ... It is highly likely issues with inappropriate cleaning of bedpans have been a major factor in spread of CDAD. A new system of bedpan liners that can be easily disposed of has been introduced this week that should help address this problem.</p>	<ul style="list-style-type: none"> <li>▪ Bedpan liners that are removed and discarded were introduced at NRGH, effective August 28, 2008.</li> <li>▪ Process is in place for cleaning of the bedpans and commodes after their use.</li> <li>▪ An evaluation of available models of bedpan washers/disinfectors has been undertaken and a recommended model was identified that met the needs of the health care worker using them – October 2008.</li> </ul>	<p>Completed</p> <p>Completed</p> <p>Completed</p>
<p>9. A thorough facility wide cleaning of all areas with 1: 10 bleach and Virox (including nursing stations, diagnostic imaging, public spaces etc) will be carried out in the next week.</p>	<ul style="list-style-type: none"> <li>▪ Areas throughout the hospital were cleaned initially using a hydrogen peroxide based solution followed by bleach. This was subsequently changed to a double cleaning using the hydrogen peroxide based solution – August 30, 2008. This is the same process used by other Health Authorities in BC</li> <li>▪ Patient rooms were cleaned using the above-noted solutions and frequency daily and on discharge of patients.</li> <li>▪ With increased incidence of organisms and/or outbreaks occur, cleaning of all involved areas is implemented as part of the interventions taken.</li> </ul>	<p>Completed</p> <p>Ongoing</p> <p>Ongoing</p>
<p>10. Recommending the facility enforce the visitor policy to reduce the crowding of patient rooms as much as possible. ... While it is recognized that family provide important care to patients, this measure of reducing visitors to two at a time is needed to break the transmission cycle of this outbreak.</p>	<ul style="list-style-type: none"> <li>▪ Visitors were restricted to two at a time and during visiting hours.</li> </ul>	<p>Completed</p>
<p>11. Removal of cloth upholstered furniture in patient care areas as it cannot be adequately cleaned and can contribute to persistence of CDAD spores in the environment.</p>	<ul style="list-style-type: none"> <li>▪ Cloth upholstered furniture is being removed and replaced with furniture that can be easily cleaned using cleaning solutions used in hospitals – September 3, 2008.</li> </ul>	<p>Completed</p>

<p>12. Review of antibiotic use patterns at the facility and as a long term project develop an antibiotic stewardship plan.</p>	<ul style="list-style-type: none"> <li>▪ VIHA Pharmacy and Therapeutics Committee developed recommended treatment protocols for patients with c. diff; and distributed this to all physicians.</li> <li>▪ Antibigram has been developed in Cerner operating system and is being validated in Victoria area</li> <li>▪ Work with pharmacy has been initiated to determine what is captured in Pharmacy module and can be obtained in report format.</li> <li>▪ Work is occurring in the VIHA information system to support this recommendation.</li> <li>▪ Determination of required resources is occurring.</li> </ul>	<p>Completed</p> <p>In progress</p> <p>In progress</p> <p>In progress</p> <p>In progress</p>
<p>13. Development of an information sheet for patients and their families on CDAD and management of people recovering from CDAD at home.</p>	<ul style="list-style-type: none"> <li>▪ Currently using the BC Health Files information sheet</li> </ul>	<p>In progress</p>