



Statewide survey of long-term care facilities regarding management of multi-drug resistant organisms

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Background

Long-term care facilities (LTCFs) face significant challenges in controlling multidrug-resistant organisms (MDROs) due to limited resources and the complex medical needs of their residents.¹⁻⁴ While MDRO infections in LTCFs can cause serious disease and mortality, colonization with MDRO also represents a growing infection control threat in the long-term care setting. LTCF residents colonized or infected with MDRO can contribute to the introduction of MDRO into acute care facilities and to their dissemination into the community setting. Despite increasing awareness of the role of LTCFs in the emergence and transmission of MDRO, little is known regarding infection prevention and control practices, resources and capacity for surveillance in LTCFs.

In December 2012, Oregon's Drug Resistant Organism Prevention and Coordinated Regional Epidemiology (DROP-CRE) Network conducted a survey to characterize the infection prevention needs, capacities, and resources of LTCFs throughout the state.

The DROP-CRE network was formed in September 2012, under the guidance of the Centers for Disease Control and Prevention (CDC), and tasked with improving the detection, control, and prevention of MDRO in Oregon. Its core working group comprised members of the Oregon Health Authority (OHA) Healthcare-Associated Infections (HAI) program, Oregon Health & Science University (OHSU), Portland VA Medical Center (PVAMC) Divisions of Infectious Diseases, and Oregon State University. The network's initial programming focused on the surveillance and prevention of carbapenem-resistant Enterobacteriaceae (CRE), with the goal of developing an infrastructure that could be adapted for other emerging multidrug-resistant pathogens.

This survey was one of three needs assessments targeting stakeholder groups likely to encounter and respond to MDROs; other surveys were sent to clinical laboratorians and to infection preventionists in acute care facilities. We conducted these needs assessments in order to guide the development of educational materials and programming.

Methods

We surveyed administrators and directors of nursing of 140 Oregon LTCFs using a 27-question, self-administered questionnaire. Questions focused on infection control policies and procedures; laboratory capacity and reporting; and MDRO management. The survey instrument was adapted from an assessment tool developed by CDC.⁵ DROP-CRE core group members who contributed to the instrument design included 2 infectious diseases physicians, a public health physician, an academic epidemiologist, 2 public health epidemiologists, a program analyst, and the Oregon healthcare-associated infections program director.

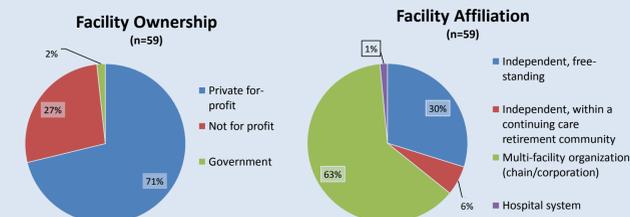
The questionnaire was designed and using SurveyMonkey[®]; an initial e-mail invitation was sent to LTCF representatives in December 2012, with two reminder messages sent in January 2013. Only one respondent per facility completed the survey.

References

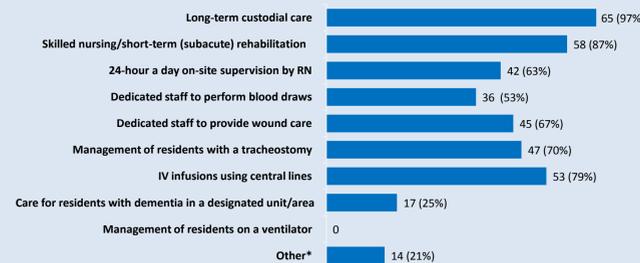
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Results: Facility Characteristics

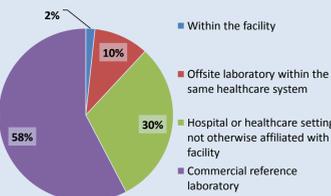
Forty-two percent (59/140) of surveyed facilities submitted complete responses. Median daily census of responding facilities was 48 residents (IQR=38, 68). The median number of long-term and rehab beds was 51 (IQR 40-72) and 35 (IQR 12-52), respectively. Other characteristics of the responding facilities are displayed in the graphs below.



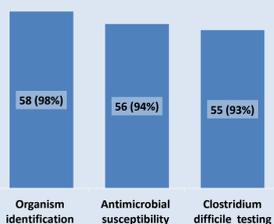
Which of the following resident services are delivered in your facility?



Location of primary microbiology laboratory (n=59)



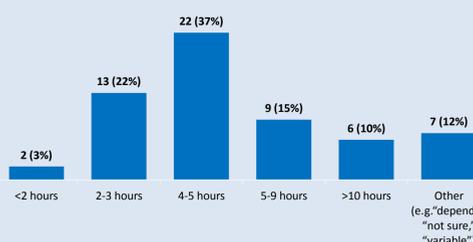
Testing available at primary microbiology laboratory



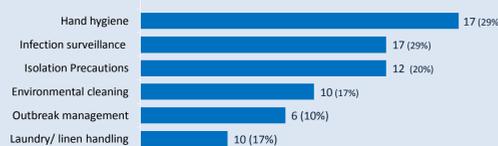
Results: Infection Control Capacities and Priorities

At 50 (85%) of the responding facilities, the individual primarily responsible for infection prevention and control was the director of nursing. Other titles cited included Quality Assurance Manager, Assistant Director of Nursing, and Infection Control Nurse. Responses to other questions about infection control are displayed in the graphs below.

Average number of staff hours per week dedicated to infection prevention and control



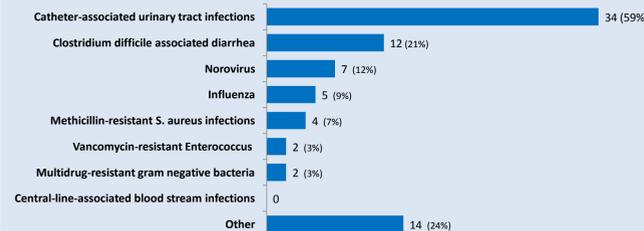
Which aspect of infection control is most challenging for your facility at this time? Select up to three.



Seven respondents (14%) stated that their facilities had had no current infection prevention difficulties.

Other selected comments:
 "community visitors ignoring requests to refrain from visiting residents while they are ill"
 "If we had more private rooms, we could care for more residents requiring isolation."

Which of the following healthcare-associated infections is your facility having the greatest difficulty preventing? Select up to three.

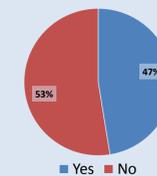


Twelve respondents (21%) stated that their facilities had had no difficulties preventing any of these infections.

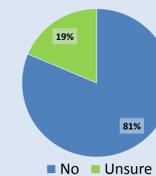
Other selected comments:
 "Must of our infections are present on admission."
 "Not tested for them in the hospital then come to us and show s/sx and testing done."

Results: Knowledge and Practices Regarding MDRO

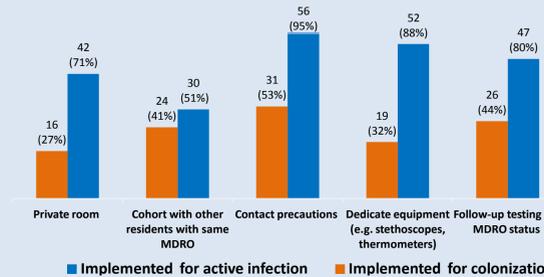
Are you aware of a class of multi-drug resistant gram negative rods termed "Carbapenem-resistant Enterobacteriaceae (CRE)"? (n=59)



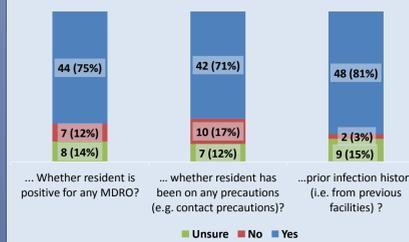
Has your facility encountered a resident infected with or having a history of CRE within 12 months? (n=59)



Practices implemented for residents known to be infected or colonized with MDRO

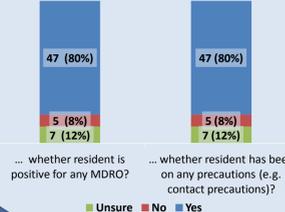


When accepting residents FROM other facilities or other levels of care, do your facility's transfer documents indicate...



Selected comments:
 "Ideally we do but sometimes this is missed as the transferring facility does not always indicate colonization."
 "Admitting hospitals do not always communicate positive MDRO's."

When your residents are transferred OUT to other facilities or other levels of care, do your facility's transfer documents indicate...



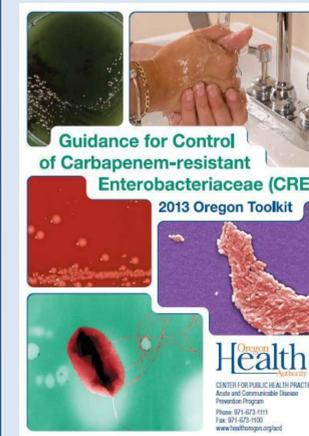
Selected comments:
 "Only if they are still on precautions."
 "We will indicate if transferred with an ongoing issue, but haven't if it is resolved."

Discussion

The results of this survey indicated that limited resources and training for infection control in Oregon LTCFs present challenges for reducing MDRO transmission. These findings also suggested a need to improve communication among healthcare facilities during transitions of care in order to expedite infection control interventions and thus prevent MDRO transmission. Discrepancies in LTCFs' self-reported infection control practices for colonized and infected residents indicated a need for education on the role of colonized individuals in the dissemination of MDRO.

Recognizing that accurate surveillance of and appropriate response to emerging MDRO requires awareness of emerging pathogens and of the risk factors for their acquisition and dissemination in long-term care facilities, the DROP-CRE core working group developed educational materials and events based on the identified informational and resource needs of this audience.

Educational programming targeting the LTCF community included webinars and guest lectures for professional organizations representing LTCF administrators.



Survey findings also informed the development of the Oregon CRE Toolkit, published in April 2013 by OHA.⁷ The Toolkit includes a subsection specifically addressing MDRO prevention and containment in the long-term care setting. The Toolkit also features a response algorithm emphasizing of inter-facility communication when MDRO-positive patients transition between levels of care.

Recommendations for CRE Infection Prevention and Control in Long-Term Care Facilities³

- Think "NICE" when CRE are encountered:
- N**otify the county health department and pertinent clinician groups to presence of CRE in the facility. Additionally, for carbapenemase-producing CRE (CP-CRE), notify facility administration.
 - I**nterview on all cases with core infection prevention and control strategies: hand hygiene, standard or contact precautions (when indicated), private rooms (if feasible), and optimized environmental cleaning. Reduce unnecessary antibiotics and use of invasive devices.
 - C**ommunicate CRE infection or colonization status to the receiving facility upon resident transfer.
 - E**ducate patients, staff, and visitors about CRE.

This needs assessment also allowed us to identify key stakeholders whose input has been crucial in the development of a statewide, interdisciplinary network for MDRO prevention and control. Planned future activities include regional inter-facility prevention collaboratives with the goal of fostering best practices and effective communication.

Acknowledgments

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