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Introduction

•Carbapenem-resistant Enterobacteriaceae (CRE) and Multi-Drug Resistant Organisms (MDRO) have garnered attention recently due to increasing awareness of the threat posed to patient safety in the healthcare setting.

•Surveillance through mandated reporting is viewed as a strategy to minimize the spread of CRE/MDROs at the state and local level.

•From 2012-2013, the Maryland Department of Health and Mental Hygiene (DHMH) performed an extensive review to ascertain the current status of reporting requirements in US states for antimicrobial-resistant organisms, and identify potentially useful reportable conditions for implementation in Maryland.

Background on CRE and MDRO

•The emergence of MDROs like CRE has recently been the focus of a recent public awareness campaign by the Centers for Disease Control and Prevention.

•The campaign has proven successful as many local and national mainstream news media outlets have taken on this narrative of increasing resistance to call for greater vigilance on the part of health departments and healthcare facilities to mitigate the emergence and spread of MDRO.

•The Centers for Medicare and Medicaid Services (CMS) has made the elimination of healthcare-associated infections (HAI)/MDRO a priority by tying HAI reimbursements to mandatory reporting from facilities, yet more remains to be done.

•Maryland is currently an Emerging Infections Program (EIP) member state.

•Participating in Multi-Site Resistant Gram-Negative Bacilli Surveillance (MuGSI) program for CRE detection.

•CRE was found in 80% of MD hospitals in survey.

Motivation

•Given the interest and prior experience with surveillance of CRE in Maryland's healthcare facilities, the Maryland Department of Health and Mental Hygiene reviewed reporting guidelines in other states to determine areas of improvement for Maryland's MDRO (and specifically CRE) reporting requirements and criteria.

•These other MDRO include Vancomycin-resistant/intermediate *Staphylococcus aureus* (VISA/VISA) and Methicillin-resistant *S. aureus* (MRSA).

Methods

•Between October 2012 and May 2013, a systematic review of state health department websites, reporting regulations, and state-level notifiable disease lists was conducted to identify state-specific requirements for CRE and MDRO reporting.

•Phone interviews were conducted with select state HAI and MDRO coordinators to provide further information on reporting requirements, as well as lessons learned and best practices for CRE reporting implementation.

•A comprehensive datasheet was created and divided into the following sections:

•State CRE/MDRO Reporting Requirements, CMS Requirements, disease-specific requirements.

Keywords for Methods

•Strategies to capture the CRE/MDRO reporting requirements included using consistent keyword phrases on search engines for each state.

•Search terms included "(state) MDRO reporting requirements," "(state) drug-resistance organisms reporting requirements," "(state) MDRO mandatory reporting," "(state) MDRO mandate," and similar iterations with "regulations," "administrative code," and "legislation" in place of "mandate" as well as "CRE," "carbapenem-resistant," in place of "MDRO." Specific MDRO diseases were also searched alongside state names, and included "MRSA," "VISA," and "VISA."

•If search terms were unsuccessful in yielding results, state HAI plans were reviewed and searched for MDRO diseases listed above.

•If appropriate reporting requirements were still unavailable, state legislative/administrative codes and reportable/notifiable disease lists were investigated for drug-resistant organisms.

•State reportable/notifiable disease lists were also taken into consideration to provide information on reporting systems used for MDROs.

Summary Table of Conditions

Mandated Conditions	Number of States (N=51, including DC)
CMS-identified conditions	9
CRE	7
VISA/VISA	42
MRSA	24

Results

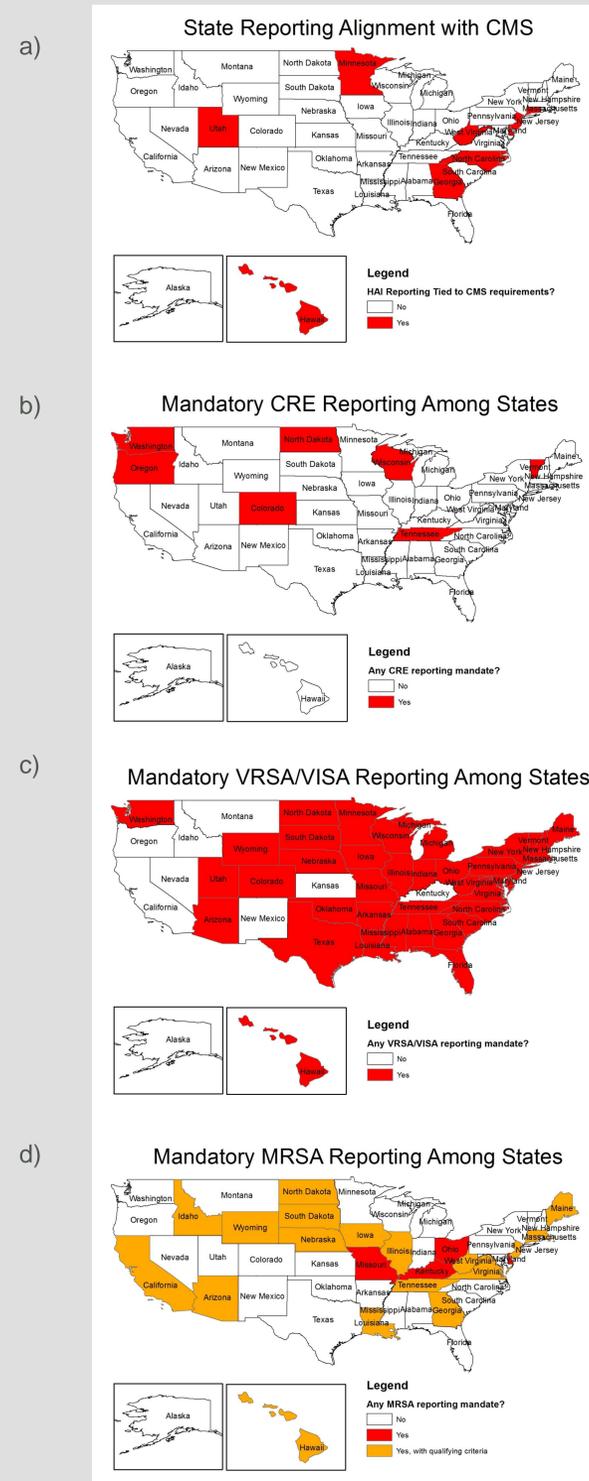


Figure 2. States that a) are aligned with CMS rules for reporting, b) have mandatory reporting for CRE, c) have mandatory reporting for VISA/VISA, d) have mandatory reporting for MRSA (as of May 2013).

Conclusions

•MDROs selected for reporting vary by state. VISA/VISA are commonplace, whereas MRSA is less so or not mandated.

•Seven states have enacted mandatory reporting for CRE, yet concerns over accurate case detection have been highlighted as a significant obstacle towards implementation.

•Maryland must take the difficulties faced by other states into consideration when revamping CRE reporting requirements.

•Vancomycin-resistant/intermediate *Staphylococcus aureus* (VISA/VISA) is reportable in 42 states (including the District of Columbia), yet methicillin-resistant *S. aureus* (MRSA) is only mandated in 24 states, often for invasive or community-associated cases.

•Distinguishing among CA and HA-types of MRSA have been major impediment cited by infection preventionists interviewed

Lessons Learned and Challenges

•This review found that states that have implemented CRE reporting vary in their chosen mode of reporting. These states also vary in their suggested methods to improve the quality of existing reporting systems.

•Some states have mentioned the issues with reporting to NHSN as opposed to a dedicated state reporting system.

•Inability to indicate specific antibiotic susceptibilities to NHSN.

•The Clinical and Laboratory Standards Institute (CLSI) breakpoints have contributed to confusion in reporting.

•The difference between CLSI and FDA standards required for laboratory testing contribute to the delay and confusion of lab and facility personnel during reporting.

•HAI/MDRO regulations are constantly changing based on the dynamics of their epidemiology.

•Limited publicly-available information available for all states.

•Awareness of the successes and obstacles experienced by other states in their respective reporting structures is instrumental for Maryland.

Contact information

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