

07-11

STATEMENT OF POLICY

Local Health Department Capacity to Monitor, Prevent, and Control Emergent Multidrug-Resistant Organisms

Policy

The National Association of County and City Health Officials (NACCHO) supports increased federal funding and technical support to state and local health departments to monitor, prevent, and control multidrug-resistant organisms (MDROs).

Increased federal funding and technical support will allow state and local health departments to do the following:

- Prevent and treat infections caused by MDROs, in accordance with national guidelines;
- Use rapid and accurate culture methods for diagnosis, including drug-susceptibility testing;
- Improve case reporting; and
- Expand the capacity for outbreak detection and response.^{1,2}

Technical support activities include providing training to, enhancing laboratory capacity of, and improving disease surveillance among health departments.

Justification

MDROs are microorganisms, predominantly bacteria, that are resistant to one or more classes of antimicrobial agents. In most instances, MDRO infections have clinical manifestations that are similar to infections caused by susceptible pathogens, however, options for treating patients with these infections are often extremely limited. As such, MDROs are associated with increased lengths of hospital stay, costs, and mortality.³ Monitoring, preventing, and controlling MDROs is a national priority, which requires healthcare facilities and federal, state, and local agencies, including health departments, to assume responsibility.

In the past, most MDROs were encountered in hospitals and other healthcare settings that employ dedicated infection prevention staff.⁴ Today, drug-resistant strains of bacteria also commonly occur in long-term care facilities and nursing homes and can spread as individuals transfer among various health settings.⁵ These and other community settings, such as day care centers, schools, correctional facilities, and sports and recreational facilities, may not have certified infection prevention and control professionals on staff and require more support from local health departments when cases arise.⁶ As an essential public health service, local health departments investigate and control infectious diseases and other community health hazards. The growth in community-associated infections and intersection with healthcare settings highlights the need to enhance the capacity of health departments as the frontline defense against MDRO infections.



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Methicillin-resistant *Staphylococcus aureus* (MRSA) - a type of staph bacteria that is resistant to certain antibiotics called beta-lactams- is a high priority MDRO. It has progressed from being an organism primarily associated with infections acquired in healthcare settings to one that regularly infects individuals in the community.⁷ The proportion of healthcare-associated *S. aureus* infections that were MRSA increased from 2 percent in 1974 to 22 percent in 1995 to 64 percent in 2004.⁸ In a 2012 retrospective study of *S. aureus* isolates collected from patients in a large integrated health plan, 43 percent in 2009 were identified as MRSA.⁹ In the mid-1990s, a new strain of MRSA, called community-associated MRSA (CA-MRSA) emerged, which has rapidly become one of the most common causes of skin and soft tissue infections (SSTIs) among otherwise healthy people in the U.S.¹⁰ Locations of recent CA-MRSA outbreaks include military training camps, correctional facilities, childcare centers, and settings where contact sports are played.¹¹

Additional examples of the growing trend of MDROs and associated infections that state and local health departments are facing include, but are not limited to:

- Multidrug-resistant (MDR) tuberculosis (TB), which makes up 3.7 percent of new TB cases worldwide, and extensively drug-resistant (XDR) TB, which makes up 9.0 percent of MDR-TB cases.¹² The number of domestic TB cases fell below 10,000 in 2012, the lowest number since standardized national reporting began in 1953, but the emergence of MDR and XDR TB raises concerns about the possibility of epidemics of virtually untreatable TB. Such epidemics could result in excessive mortality and a substantial financial and infrastructure burden for public health and TB control programs.¹³ A major outbreak of XDR TB could constitute a substantial drain on public health resources and quickly deplete existing state and local TB budgets, which would have a negative impact on progress toward TB elimination. This is especially true in an era of diminishing resources for TB control at the national, state, and local levels.¹⁴
- Antibiotic-resistant *Neisseria gonorrhoeae*, which is a growing public health concern, especially since the U.S. gonorrhea control strategy relies on effective antibiotic therapy.¹⁵ Fluoroquinolones were frequently used in the treatment of gonorrhea, but due to growing fluoroquinolone resistance, the CDC's *Sexually Transmitted Diseases Treatment Guidelines, 2010*, recommends only one class of antimicrobials, the cephalosporins, for treatment of gonorrhea.¹⁶ Currently, CDC's treatment guidelines recommend a single intramuscular dose of a cephalosporin antibiotic (ceftriaxone) and either azithromycin or doxycycline.¹⁷ Given the ability of *N. gonorrhoeae* to develop antibiotic resistance, it is critical to continuously monitor gonococcal antibiotic resistance and encourage research and development of new treatment regimens for gonorrhea.¹⁸ Further adding to antibiotic-resistant gonorrhea concerns are reports of cases resistant to cephalosporin antibiotics in Australia, France, Japan, Norway, Sweden, and the United Kingdom.¹⁹
- Vancomycin-resistant enterococci (VRE), which are specific types of antimicrobial-resistant bacteria that are resistant to vancomycin, the drug often used to treat infections caused by enterocci. Enterocci are bacteria that are normally present in the intestines and the female genital tract and are often found in the environment. These bacteria can sometimes cause infections and most VRE infections occur in hospitals. From 2007 to 2010, the percentage of *Enterococcus faecalis* central line-associated bloodstream infections in both critical care and non-critical care settings resistant to vacomycin increased 8.1 percent.²⁰ Although there are now other antimicrobials available for treatment of VRE infections, resistance to each new agent has already emerged in clinical isolates.²¹
- Multidrug-resistant *Salmonella*, which in recent years has appeared in pet stores and the food supply.²²
²³ Drug-resistant *Salmonella* emerge largely as a result of the use of antibiotics to promote the growth of

food animals. Salmonellosis, the disease caused by the bacteria *Salmonella*, constitutes a major public health burden and represents a significant cost in many countries. In the U.S., local and state health departments bear the brunt of this burden, as they are responsible for investigating outbreaks and devising control measures.²⁴

- Certain gram-negative bacilli, including those resistant to extended spectrum beta-lactamases (ESBLs), fluoroquinolones, carbapenems, and aminoglycosides, have increased in prevalence.²⁵
- Multidrug-resistant *Streptococcus pneumoniae*, which has spread rapidly in the U.S. since 1990.²⁶

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Record of Action

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