

Antibiotic Resistance

- Antibiotic resistance is the ability of bacteria to resist the effects of an antibiotic – the bacteria are not killed.
- Resistant bacteria survive exposure to the antibiotic and continue to multiply, potentially causing more harm and spreading to other people.
- Overuse and misuse of antibiotics promote the development of antibiotic-resistant bacteria.

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Up to 50% of Antibiotic Use is Inappropriate

- Antibiotics are:
 - Given when they are not needed
 - Continued when they are no longer necessary
 - Given at the wrong dose
- Broad spectrum agents are used to treat very susceptible bacteria.
- The wrong antibiotic is given to treat an infection.

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Documented Harms of Antibiotic Use/Misuse

- Getting an antibiotic increases a patient's chance of becoming colonized or infected with a resistant organism.
- Increasing use of antibiotics increases the prevalence of resistant bacteria in hospitals.
- Antibiotic resistance increases mortality.

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Proven Benefits of Improving Antibiotic Use

- Reduces resistance
- Improves infection cure rates
- Saves money
- Improving antibiotic use is a public health imperative – antibiotics are the only drug where use in one patient can impact effectiveness in another.

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Vermont Hospitals Need Help

- A CDC Prevention Status Report to be published online February 29 will show Vermont as “in the red” because only 7% of hospitals had antibiotic stewardship programs that included all of the CDC-recommended core elements:

- Leadership commitment
- Accountability
- Drug expertise
- Action
- Tracking
- Reporting
- Education

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Antibiotic Stewardship Programs

- Designed to reduce antibiotic usage through guidelines, education, and monitoring and feedback to prescribers.
- In particular, Vermont hospitals need access to the expertise of an infectious disease-trained physician and pharmacist to guide stewardship efforts.

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Vermont Antibiotic Stewardship Initiative

- Health Department will partner with UVMMC
- Each participating hospital will form a stewardship committee with support from UVM ID physician and pharmacist
- UVM physician will review charts each month with hospital staff to assess appropriate antibiotic use
- Aggregate findings will be used to educate providers through emails, medical staff meetings and grand rounds

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Surveillance for Antibiotic Resistance

- Laboratory data on resistance patterns is key to know how we're doing.
- We'll partner with the WHO Collaborating Centre for Surveillance of Antimicrobial Resistance.
- WHONET is a database software for the management and analysis of microbiological and clinical data with a special focus on antimicrobial susceptibility test results.
- WHONET software is already in Vermont hospitals because of work the Health Department is doing to prevent healthcare-associated infections.

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Expected Outcomes

- Improved antibiotic prescribing
- Reduction in antibiotic use
- Decreased incidence of antibiotic-related adverse drug events
- Reduction in antibiotic costs per 1,000 patient-days
- Decreased prevalence of antibiotic-resistant pathogens
- Decreased incidence of healthcare-associated *C. difficile* infection

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