



Technically Speaking

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Danbury Hospital 2011 Cumulative Antibigram

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Danbury Hospital Laboratory is pleased to announce the completion of the cumulative antibiogram for the year 2011. The cumulative antibiogram is an annually generated report that reflects the percentage of bacterial isolates that are susceptible to antimicrobial agents routinely tested in the Clinical Microbiology section of the Laboratory. Antibiograms provide clinicians and public health officials with trends of antimicrobial susceptibility at the local, regional, and national levels. One of the primary aims of the antibiogram is to guide clinicians in the selection of empiric antimicrobial therapy for infections. It should be used as a general guide to empiric antimicrobial therapy only until specific antimicrobial susceptibility test results on a given patient's isolate become available.

Increasing bacterial antibiotic resistance is a current and worrisome problem throughout the world. Clinicians and local Infection Control personnel use antibiogram data to monitor resistance trends and design measures to control outbreaks of resistant species. Antibiograms help in developing quality improvement initiatives and forming infection control policies and procedures.

Additionally, the data can be used by the Pharmacy to identify the need for new antimicrobials for the formulary, determine when some antibiotics are no longer effective, and monitor prescribing patterns. This also encourages physicians to use less expensive but still effective agents and thus decreases pharmaceutical costs.

Data Presentation

- The culture susceptibility test reports on the bacterial isolates are stored in the primary data system (e.g. LIS or susceptibility testing instrument).
- The data is generated annually and then interpreted.
- The data reports only the percent susceptible and does not include percent intermediate in the statistics.
- The data is presented in separate subgroups in the report (e.g. gram positive vs. gram negative, inpatient vs. outpatient, and antibiotics tested on urine).
- A multidisciplinary approach, including review by infectious disease physicians and pharmacists was done prior to publication.

The following is an example of cumulative susceptibility data for methicillin resistant *Staphylococcus aureus* (MRSA) and interpretation of the data:

Danbury Hospital Inpatient Gram Positive Cumulative Antibioqram 2011

	Staphylococcus MRSA
No. of isolates	126
	% Susceptible
Amox/clavulanate	0
Amp/sulbactam	0
Ampicillin	—
Azithromycin	—
Cefaclor	—
Cefazolin	0
Cefepime	—
Cefotaxime	—
Ceftriaxone	0
Cefuroxime	—
Chloramphenicol	86
Clindamycin	56
Daptomycin	100
Erythromycin	8
Gentamicin	97
Imipenem	0
Levofloxacin	13
Linezolid	100
Meropenem	—
Moxifloxacin	30
Nitrofurantoin(urine)	100
Oxacillin	0
Penicillin	0
Rifampin	99
Synercid	100
Tetracycline	97
Trimethoprim/sulfa	94
Vancomycin	100

- Total number of isolates of methicillin resistant *Staphylococcus aureus* in Danbury Hospital in year 2011 was 126. Only one isolate per patient was counted.
- 100% susceptibility was seen with linezolid, synercid, vancomycin and daptomycin.
- In urine specimens 100% susceptibility was seen with nitrofurantoin.
- (—) Indicates that these drugs are not tested or indicated for methicillin resistant *Staphylococcus aureus* infection.

Comparison Between 2010 and 2011 Antibiograms:

For the 2011 Inpatient Gram Positive Antibiogram, none of the bacterial isolates showed more than a 15% decrease in susceptibility to antibiotics compared to 2010 isolates.

For the 2011 Outpatient Gram Positive Antibiogram, the following bacterial isolates showed more than a 15% decrease in susceptibility to the following antibiotics compared to 2010 isolates:

<u>Enterococcus faecium</u>	<u>% decrease in susceptibility</u>
Vancomycin	16

<u>Staphylococcus lugdunensis</u>	<u>% decrease in susceptibility</u>
Erythromycin	16

For the 2011 Outpatient Gram Negative Antibiogram, the following bacterial isolates showed more than a 15% decrease in susceptibility to the following antibiotics compared to 2010 isolates:

<u>Acinetobacter baumannii</u>	<u>% decrease in susceptibility</u>
Tetracycline	20

<u>Citrobacter freundii</u>	
Ticarcillin/clavulanate	24

<u>Enterobacter aerogenes</u>	
Nitrofurantion (urine)	18

<u>Morganella morganii</u>	
Amoxicillin/clavulanate	28

<u>Proteus vulgaris</u>	
Ampicillin/sulbactam	43
Ceftriaxone	20
Tetracycline	24

For the 2011 Inpatient Gram Negative Antibiogram, the following bacterial isolates showed more than a 15% decrease in susceptibility to the following antibiotics compared to 2010 isolates:

<u>Enterobacter aerogenes</u>	<u>% decrease in susceptibility</u>
Amoxicillin/clavulanate	27
Ampicillin/sulbactam	25
Cefotetan	33
Cefuroxime	20

Access to the Antibiogram:

The 2011 cumulative antibiogram is available on Danbury Hospital's main intranet webpage <http://dhsintra/> in the Clinical Assistance section under Blood/Body Fluid Exposure, Isolation / IC Information. To obtain hard copies of the antibiograms, please call Client Service Representative, Sandra Smith at 203-739-7800.

Supply requisitions may be obtained by e-mail to sandra.smith@wcthealthnetwork.org or by calling 203-739-7800
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