Massachusetts Antimicrobial Use and Resistance Reporting

HITAC Public Health Data Systems Task Force

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Current Data Sources

- Antimicrobial Resistance
  - MDRO Surveillance (ELR to MAVEN and Laboratory Submission of isolates)
    - Enterobacterales, isolated from any source, with resistance to ertapenem, imipenem, meropenem, or doripenem (ELR)
    - Enterobacterales demonstrating carbapenemase production of the following gene targets: KPC, NDM, OXA, IMP, or VIM (ELR)
    - Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) isolates that are non-susceptible to cefepime and/or ceftazidime (Lab)
    - Carbapenem-resistant *Acinetobacter baumannii* (CRAB) isolates (Lab)
    - *Candida auris* isolates
  - NHSN – Patient Safety Component
    - Central line-associated bloodstream infections
    - Catheter-associated urinary tract infections
    - Surgical site infections
  - Antibiograms – Acute care hospitals
- Antimicrobial Use
  - NHSN – AUR module (Acute care hospitals)
  - Monthly antimicrobial starts (Long-term care facilities)
  - All-payer claims data (outpatient settings)

Antimicrobial Resistance Data: NHSN and State Surveillance

	NHSN AR Option		NHSN MDRO Module		NHSN Device & Procedure-Associated Modules	MDPH MDRO Surveillance
Events Reported	AR Events from blood, CSF, urine, and lower respiratory specimens		Laboratory Identified (LabID) & Infection Surveillance Events		CLABSI, CAUTI, pedVAP, VAE, SSI Events	CRE, CRAB, CRPA, *C. auris*
Type of susceptibility data	Over 20 specific organisms; detailed lab test results and final interpretation		Positive specimens (i.e., MRSA, CDI, CRE) defined by NHSN criteria		Susceptibility results for specific antibiotics	Susceptibility results for specific antibiotics and antifungals
Denominator; Metric(s)	# Isolates tested; Cumulative antibiogram (% susceptible) and % resistant phenotypes	# Patient Days, Admissions and Encounters; Incidence and Prevalence	# Patient days; rates	# Predicted; SIRs (LabID Only)	# Isolates tested; facility and national % resistance	N/A
Benefits	Wide-spread, 'whole house' coverage, no manual entry		Simplified reporting; LabID MRSA and CDI national benchmarks		Infection control software; data can be manually entered; national AR data published (% resistance)	Comprehensive statewide surveillance for CROs and C. auris
Drawbacks	Requires set-up by vendor/homegrown system		Small number of organisms included		Only get susceptibility info for events that meet definitions	DPH manual filtering of lab results due to challenges in setting up an algorithm for susceptibility data to match reporting requirements

https://www.cdc.gov/nhsn/pdfs/training/2022/AR-Option-Reporting-508.pdf

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