Extensively Drug-Resistant Organism (XDRO) Registry: XDRO Reporting Requirements

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www.xdro.org

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XDRO registry

IDPH Illinois Department of Public Health

XDRO registry overview

- Prevent the spread of extensively drug-resistant organisms
- Facilities required to report carbapenem-resistant Enterobacterales (CRE)
- IDPH reports:
  - *Candida auris (C.auris)*
  - Carbapenemase-producing *Pseudomonas aeruginosa* (CP-CRPA)
  - Carbapenem-resistant *Acinetobacter baumanni* (CRAB)

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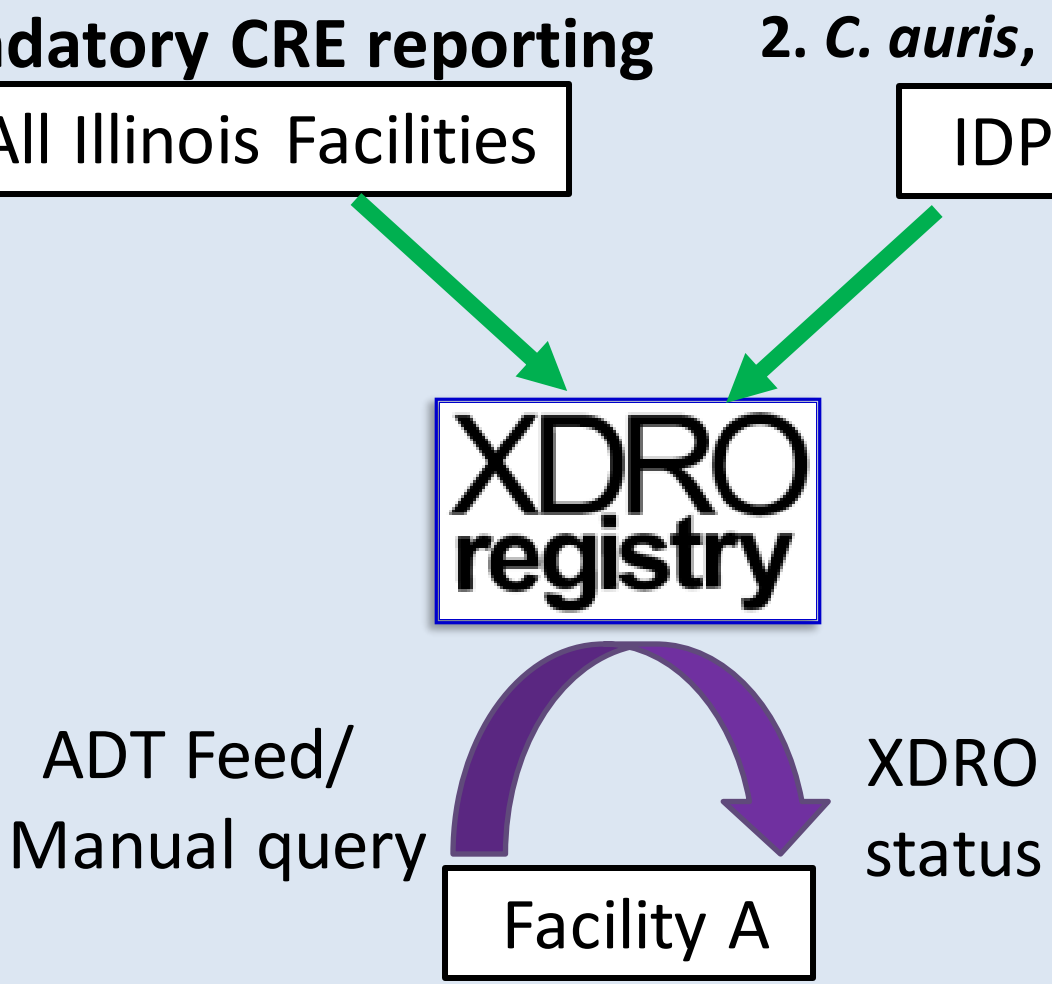
XDRO registry overview



Adapted from: Trick, WE et al., EID 2015

Illinois CRE Reporting Rule

- First **CRE-positive culture per patient stay** must be reported to the XDRO registry (77 Ill. Adm. Code Part 690 Control of Communicable Diseases Code).
- Hospitals, laboratories, long-term acute care hospitals longer-term care facilities, and in Illinois are required to report CRE cases to the XDRO registry
- If a CRE-positive patient is reported to the registry, discharged and then readmitted at a later date with a *new* CRE-positive culture, that new CRE culture should be reported to the XDRO registry because it is the 1st CRE event of the new *patient encounter*

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Illinois CRE Surveillance Criteria

- Enterobacterales (e.g., E. coli, Klebsiella species, Enterobacter species, Proteus species, Citrobacter species, Serratia species, Morganella species or Providentia species) with one of the following laboratory test results:
  - Molecular test (e.g. polymerase chain reaction (PCR)) specific for carbapenemase.
  - Phenotypic test (e.g., Modified Hodge or modified carbapenem inactivation method (mCIM)) specific for carbapenemase production.
  - Susceptibility test (**for E. coli and Klebsiella species only, excluding K. aerogenes**): non-susceptible (intermediate or resistant) to ONE of the following carbapenems (doripenem, meropenem or imipenem) AND resistant to ALL of the following third generation cephalosporins tested (ceftriaxone, cefotaxime and ceftazidime). Note: ignore ertapenem for this definition.
- If a case of CRE meets this definition, you are required to submit to the XDRO Registry within 7 days of receiving the report

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Report Carbapenem-Resistant Enterobacterales (CRE) isolates to the XDRO registry

(1) Is the isolate in the Enterobacterales family (*e.g., Klebsiella, Escherichia coli, Enterobacter, Serratia, Proteus, others*)**?**

NO → Do **NOT** Report: *Pseudomonas, Acinetobacter,* MRSA, or other non-Enterobacterales isolates

YES ↓

(2) Did the isolate have a positive genotype test (PCR) for a carbapenemase (eg., KPC, NDM, VIM, IMP, OXA)**?**

YES → Report to the XDRO registry

NO ↓

(3) Did the isolate have a positive phenotypic test (eg., Modified Hodge or MBL Etest) **for carbapenemase production?**

YES → Report to the XDRO registry

NO ↓

(4) Is the Isolate *E. coli* or *Klebsiella spp.* ?

NO → Do **NOT** Report

YES ↓

(5) Is the isolate non-susceptible (INTERMEDIATE or RESISTANT) to imipenem, meropenem, and/ or doripenem?

NO → Do **NOT** Report

YES ↓

(6) Is the isolate RESISTANT to ALL third-generation cephalosporins tested (eg., ceftriaxone, cefotaxmine, ceftazidime, others) ?

NO → Do **NOT** Report: Isolates that are sensitive or intermediate to any third-generation cephalosporin

YES → Report to the XDRO registry

Examples

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Suspected Agent: **Escherichia coli**

ANTIMICROBIC	MIC (µg/mL)	INTERPRETATION
Amikacin	<=1	S
Ampicillin	>32	R
Aztreonam	64	R
Cefazolin	>8	R
Cefepime	>32	R
Cefotaxime	>64	R
Cefotaxime-clavulanic acid**	>32	
Cefoxitin	>16	R
Ceftazidime	>128	R
Ceftazidime-clavulanic acid**	>64	
Ceftriaxone	>32	R
Chloramphenicol	8	S
Ciprofloxacin	>8	R
Colistin	0.5	
Doripenem	>8	R
Ertapenem	>8	R
Gentamicin	<=0.25	S
Imipenem	8	R
Levofloxacin	>8	R
Meropenem	>8	R
Piperacillin-tazobactam	>128/4	R
Polymyxin B	0.5	
Tetracycline	>32	R
Tigecycline	<=0.5	S
Tobramycin	<=0.5	S
Trimethoprim-sulfamethoxazole	>8/152	R

BROTH MIC MEDIUM: Cation Adjusted Mueller-Hinton Broth (CAMHB)

Suspected Agent: **Escherichia coli**

ANTIMICROBIC	MIC (µg/mL)	INTERPRETATION
Amikacin	<=1	S
Ampicillin	>32	R
Aztreonam	64	R
Cefazolin	>8	R
Cefepime	>32	R
Cefotaxime	>64	R
Cefotaxime-clavulanic acid**	>32	
Cefoxitin	>16	R
Ceftazidime	>128	R
Ceftazidime-clavulanic acid**	>64	
Ceftriaxone	>32	R
Chloramphenicol	8	S
Ciprofloxacin	>8	R
Colistin	0.5	
Doripenem	>8	R
Ertapenem	>8	R
Gentamicin	<=0.25	S
Imipenem	8	R
Levofloxacin	>8	R
Meropenem	>8	R
Piperacillin-tazobactam	>128/4	R
Polymyxin B	0.5	
Tetracycline	>32	R
Tigecycline	<=0.5	S
Tobramycin	<=0.5	S
Trimethoprim-sulfamethoxazole	>8/152	R

BROTH MIC MEDIUM: Cation Adjusted Mueller-Hinton Broth (CAMHB)

Specimen Details

	Collected	Type	Source	Submitter ID
19MP010778	8/20/2019	Swab	Rectal	

CARBA-R (Final result)

ID: 19MP010778 Type/Src: Swab/Rectal

	Result		Units
IMP gene	No IMP gene DNA detected.		
VIM gene	No VIM gene DNA detected.		
NDM gene	**NDM gene DNA detected.**	**(A)**	
KPC gene	**KPC gene DNA detected.**	**(A)**	
OXA-48 gene	No OXA-48 gene DNA detected.		

Comments:
The Xpert Carba-R Assay is a FDA cleared test that detects blaKPC, blaNDM, blaVIM, blaOX-48 and blaIMP from rectal swab specimens or pure colonies. Detection of these gene sequences does not indicate the presence of viable organisms in rectal swabs.

Reportable Tests: CARBA-R

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Frequently Asked Questions

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If I do not have an on-site laboratory (i.e., I use a reference laboratory), who is responsible for reporting a positive CRE case to the registry? Should both the lab and my facility report?

Laboratories are allowed to report on behalf of other facilities, however, this agreement must be worked out between the laboratory and the facility. The facility that obtained the culture is ultimately the one responsible for ensuring the case is reported to the XDRO Registry.

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What if an isolate meets the susceptibility criterion, but further testing is negative?

An isolate should be reported if it meets any of the three reporting criteria, even if additional testing is negative. You may include the additional results in the comments box.

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If my laboratory or facility is already reporting to I-NEDSS, do I still need to report to the XDRO registry?

Yes, reporting to I-NEDSS does not satisfy CRE reporting to the XDRO registry at this time. This is because the XDRO registry exists separately from I-NEDSS, in order to provide both reporting and search functionality.

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Whom do I contact if I have questions about whether an organism meets criteria (e.g., I am unable to interpret susceptibility results)?

We recommend that you first contact your microbiology laboratory and speak with a staff member who is knowledgeable about your laboratory's CRE testing. If you are still unsure, , you may refer to https://www.xdro.org/reporting-rule.html or contact the XDRO registry support team at DPH.XDROregistry@Illinois.gov for further guidance.

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Questions?

1. Refer to XDRO FAQ document: https://www.xdro.org/img/XDRO_registry_FAQ_FINAL.pdf
2. Contact your local health department
3. Email the IDPH XDRO team at DPH.XDRORegistry@illinois.gov