CRE and XDRO:
What Hospital IC/Ps Need to Know

April 29, 2014

Illinois Department of PUBLIC HEALTH

Featured Presenters

Rose Marie Semar, RN BSN CIC CPPS
Infection Prevention and Control
Presence Health
Resurrection Medical Center

William Trick, M.D.
Director, Collaborative Research Unit
Cook County Health & Hospitals System

Michael Lin, M.D., MPH
Assistant Professor, Infectious Diseases
Rush University

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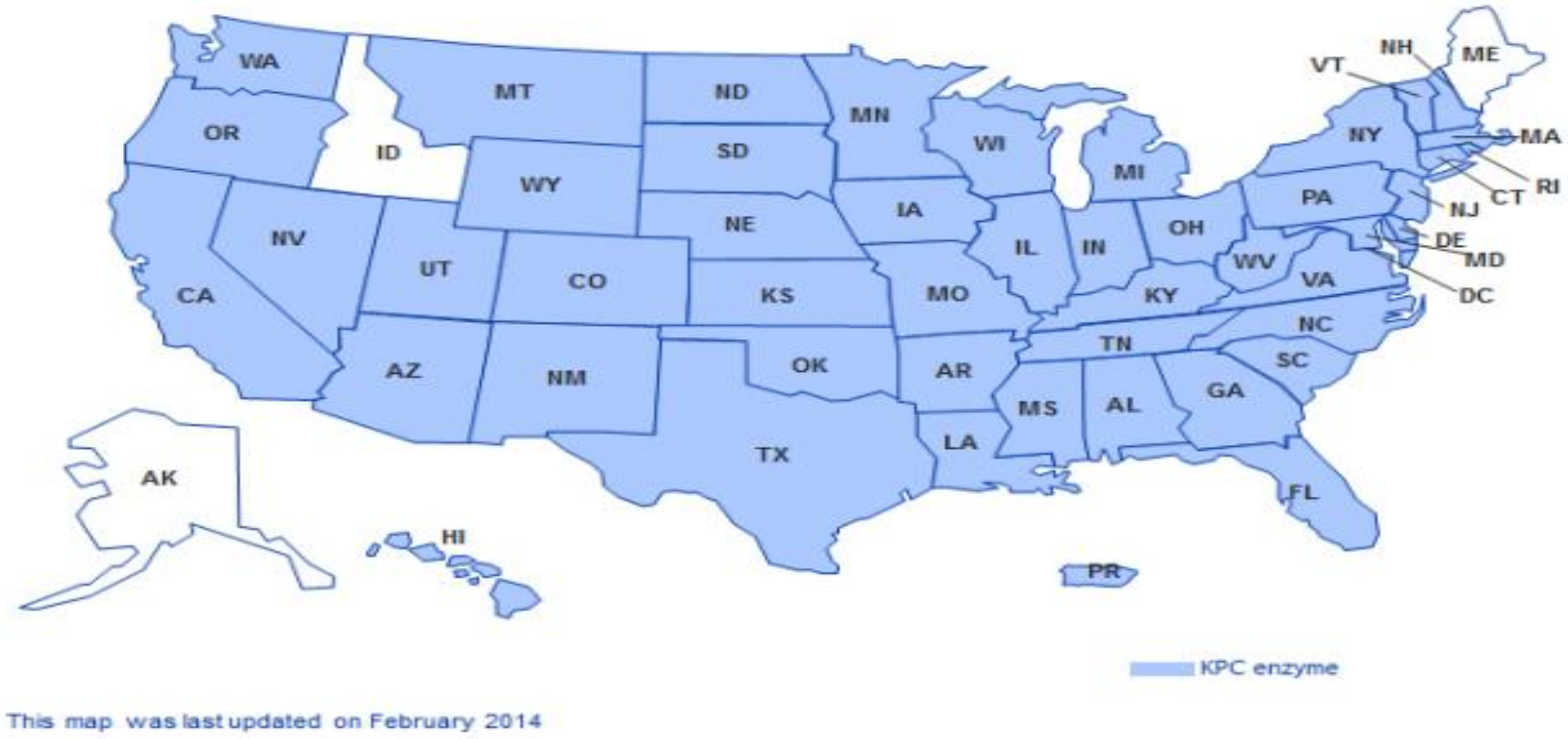
CRE Detect And Protect: The Role Of Hospital Infection Prevention & Control

Rose Marie Semar, RN BSN
CIC CPPS
Presence Resurrection Medical Center
April 29, 2014

Carbapenemase-Producing CRE in the United States



- CDC.gov. (2014) Carbapenemase-producing CRE in the United States. Retrieved from http://www.cdc.gov/hai/organisms/cre/TrackingCRE.html

CDC's Guidance for Control of Carbapenem-resistant Enterobacteriaceae (CRE) 2012 Toolkit

- Infection Prevention and Control Departments should:
- Be cognizant of the epidemiological significance of CRE
- Be aware of the prevalence of the organism in the community or region
- Attempt to identify patients in the facility who are colonized or infected with CRE
- Implement facility practices to prevent transmission of CRE
- Participate in regional initiatives designed to address CRE

Case Presentation

- Elderly female presented from home with failed outpatient antibiotic pneumonia therapy at the end of December and admitted to ICU
- Intubated after admission
- Negative initial blood, urine, and sputum cultures
- Subsequent cardiac arrest, tracheostomy, PEG, and hemodialysis
- 10 days following admission, sputum culture positive for Klebsiella pneumoniae Carbapenemase-producing bacteria (KPC)

Initial Interventions

- Patient placed in Contact Precautions (all private rooms in ICU)
- Contacted Lab to determine if any other CRE organisms recently identified
- Notified ICU Manager of positive CRE (KPC) and requested active surveillance screening cultures from all current ICU patients
- Informed Lab of CRE screening measures
- Initiated daily bleach cleaning of high touch surface areas by EVS and ICU staff
- Dedicated all supplies and patient equipment, including hemodialysis equipment
- Observed compliance to hand hygiene, disinfection, and contact precautions

Education of Unit and Ancillary Staff (Also Patients and Caregivers)

- In-Person
- Communication
- And Use of the CDC Tool:

CDC.gov. (2013) Vital Signs. Retrieved from http://www.cdc.gov/vitalsigns/pdf/2013-03-vitalsigns.pdf

Facility and Public Health Notification and the XDRO Registry

Department Education

- Respiratory Therapy
- Dialysis
- OR
- Radiology

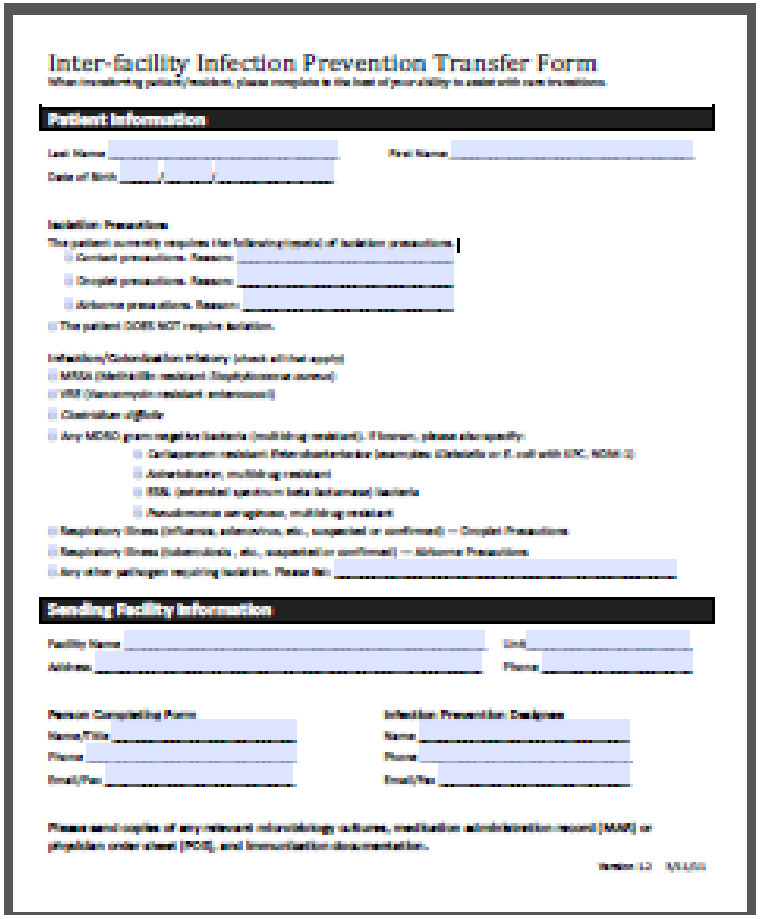
Internal Notification

- Critical Care Intensivists and Residents
- Quality Department
- Hospital Administration

External Notification

- Chicago Department of Public Health
- IDPH XDRO registry – case entered into database

Inter-facility Transfer and Communication



Inter-facility Infection Prevention Transfer Form

Patient Information

Sending Facility Information

- Chicagohan.org. (2011) Inter-facility Infection Prevention Transfer Form. Retrieved from https://www.chicagohan.org/c/document_library/get_file?p_l_id=18130&folderId=30368&name=DLFE-189.pdf

Second Case Presentation

- Female patient in her 50's admitted to ICU from home with seizures
- Intubated on admission
- Initial blood, urine, body fluid, and sputum cultures negative
- Patient had exploratory laparoscopy, bronchoscopy, tracheostomy, and PEG
- 10 days after admission, urine culture positive for KPC
- 19 days after admission, sputum culture positive for KPC

2nd Case Interventions

- All interventions initiated for previous KPC positive patient instituted AND…
- Checked proximity and timeline in relation to 1st case
- Reviewed patient link in terms of staff caring for them
- Investigated any possible invasive procedures or tests shared by both patients
- Instituted CHG bathing for patients in ICU
- Notified CDPH and hospital administration
- No further cases identified to date

Collaboration with Labs and Local Public Health Departments

- Establish dependable Lab contacts
- Perform Micro review or line list every 6 months or at least annually
- Notify local public health departments for assistance if guidance is needed

Infection Prevention and Control Checklist for One Identified Hospital Acquired CRE Case in a Facility with no or few cases

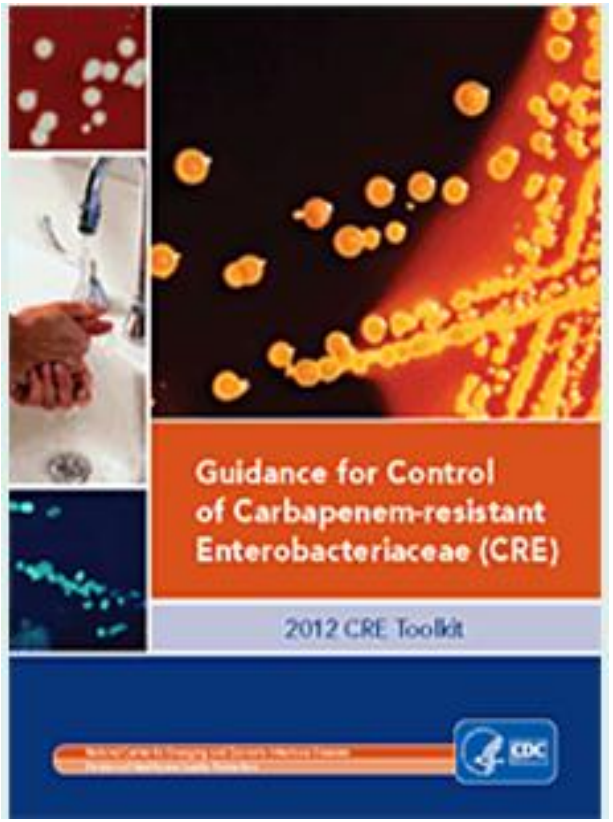
- Microbiology Review
- Active rectal surveillance cultures on the unit
- Ensure screening lab is aware of CRE testing measures
- Observe compliance to contact precautions and hand hygiene
- Monitor environmental cleaning with EPA approved disinfectant in high-contact surface areas
- Education of unit and ancillary staff, patient, family, and caregivers
- Inter-facility communication and case entry into XDRO registry

Infection Prevention and Control Checklist for a Cluster of Hospital-Acquired CRE Cases

All previous interventions, AND:

- Investigate potential epidemiological links (staff, procedures, location in facility)
- Consider cohorting patients and staff
- Possible CHG bathing of patients

CDC 2012 CRE Toolkit



- CDC.gov. (2012) 2012 CRE Toolkit - Guidance for Control of Carbapenem-resistant Enterobacteriaceae (CRE). Retrieved from http://www.cdc.gov/hai/organisms/cre/cre-toolkit/

CDC 2012 CRE Toolkit Guidance

- Notify appropriate facility personnel and public health (if indicated)
- Place patient on Contact Precautions in single room (if available)
- Monitor adherence to hand hygiene and use of Contact Precautions on affected ward/unit
- Educate healthcare personnel about preventing CRE transmission
- Screen epidemiologically-linked patient contacts for CRE and/or consider point prevalence survey of affected unit
- Consider preemptive Contact Precautions of these patients pending results of screening cultures
- Consider cohorting patients and staff
- Ensure appropriate intra- and inter-facility communication

Questions?

References

Centers for Disease Control and Prevention. (2014). Carbapenamase-producing CRE in the United States. Retrieved from http://www.cdc.gov/hai/organisms/cre/TrackingCRE.html

Centers for Disease Control and Prevention. (2012). 2012 CRE Toolkit - Guidance for control of Carbapenem-resistant Enterobacteriaceae (CRE). Retrieved from http://www.cdc.gov/hai/organisms/cre/cre-toolkit/

Centers for Disease Control and Prevention. (2013) Vital Signs. Retrieved from http://www.cdc.gov/vitalsigns/pdf/2013-03-vitalsigns.pdf

Chicagohan.org. (2011) Inter-facility Infection Prevention Transfer Form. Retrieved from https://www.chicagohan.org/c/document_library/get_file?p_l_id=18130&folderId=30368&name=DLFE-189.pdf

XDRO Registry:
6 month update

April 2014

Michael Lin, MD MPH
William Trick, MD
Chicago CDC Prevention Epicenter

XDRO registry

Objectives

1. CRE overview and recent trends
2. CRE definition / laboratory considerations
3. XDRO registry website updates
4. Querying and automated alerts
5. Question and answer

CRE: 2 dominant types

	KPC	NDM
Stands for:	Klebsiella pneumoniae carbapenemase	New Delhi metallo-β-lactamase
Bacterial species	Usually Klebsiella, sometimes *E. coli*	Usually *E. coli* (in U.S.) but variable
Prevalence	Most common CRE	Rare but emerging
Treatment	Nearly impossible	Nearly impossible
Concerning?	Yes	Yes!! Because it is still rare in U.S. and spreads aggressively. If your lab suspects it, report right away to IDPH

New-Delhi Metallo-β-Lacatamase (NDM) in U.S.

Year	US patients with NDM
2009-2012	27
2013	67 (44 pts in Illinois)

MMWR 2014; 62(51): 1051

2013 NDM outbreak in Illinois

MMWR 1/3/2014

Notes from the Field

New Delhi Metallo-β-Lactamase–Producing *Escherichia coli* Associated with Endoscopic Retrograde Cholangiopancreatography — Illinois, 2013

Infections with carbapenem-resistant *Enterobacteriaceae* (CRE)* are increasing among patients in medical facilities (1). CRE that produce *Klebsiella pneumoniae* carbapenemase

- 32 pts epidemiologically linked to NDM-colonized endoscope used for ERCP
- All were NDM were found in *E. coli*

Sample Hospital change facility

Test User1 Home Help Go Back Logout

Submit Report

Search Registry

Facility Submission History

Facility Alert History

XDRO Dashboard

XDRO registry

Sample Hospital change facility

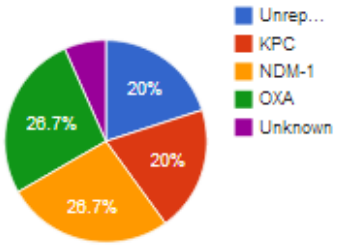
Test User1 | Home | Help | Go Back | Logout

XDRO Report

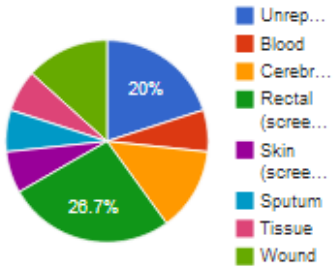
Facility Data [a]

(Facility data is fictitious, but state data is real)

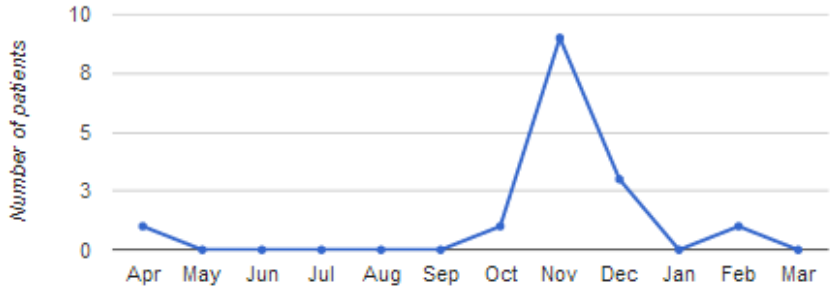
Resistance Mechanism



Specimen Source



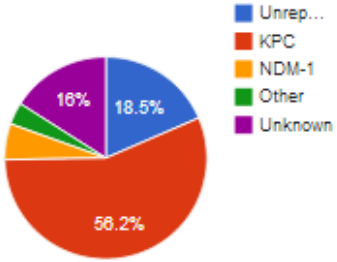
Trend, Last 12 Months



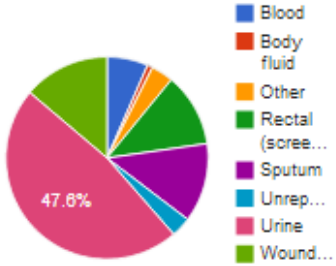
Entire Dataset

State Data [b]

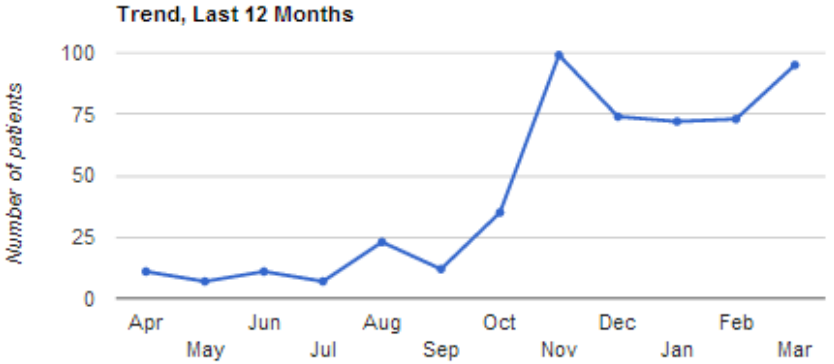
Resistance Mechanism



Specimen Source

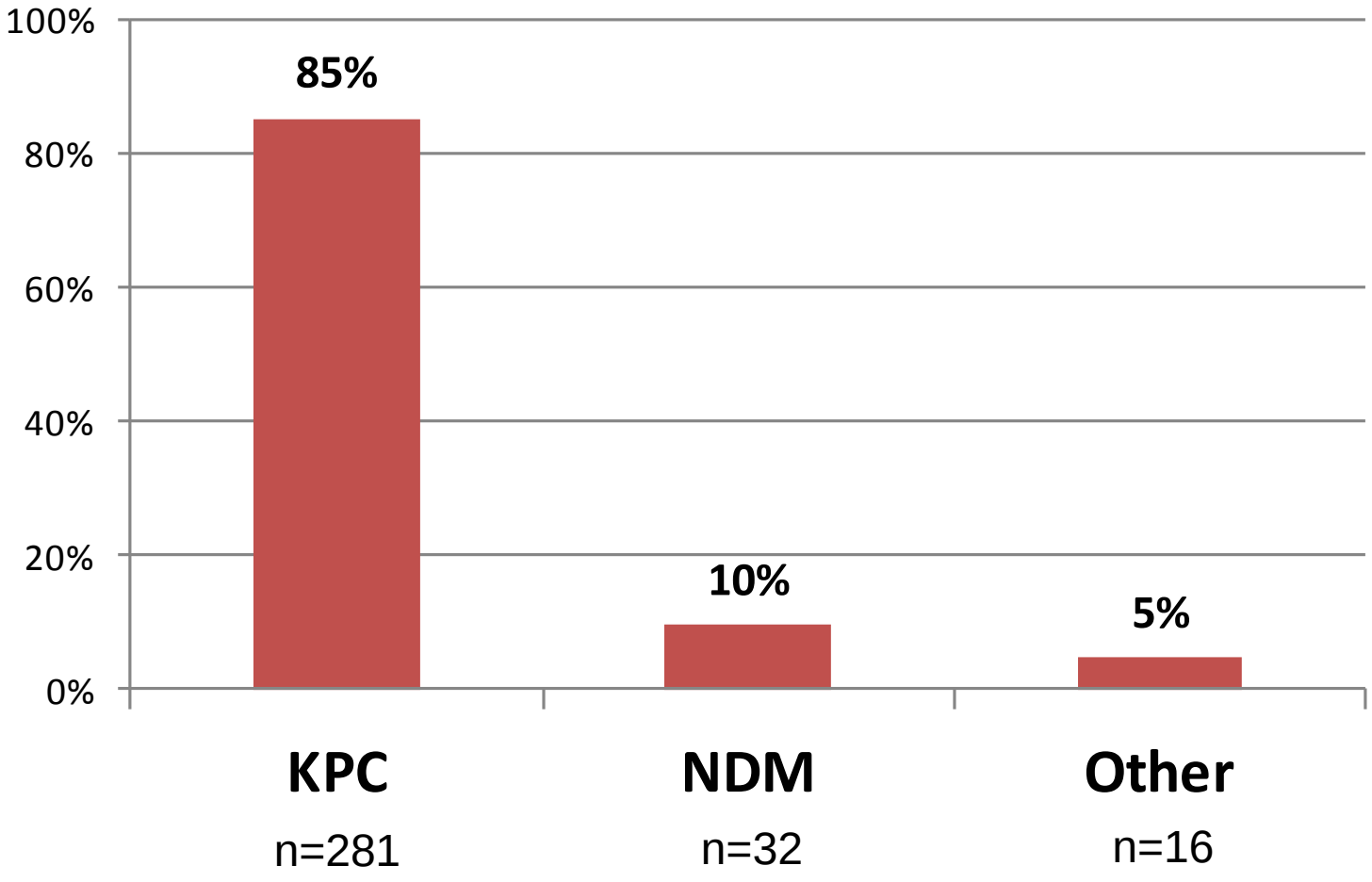


Trend, Last 12 Months



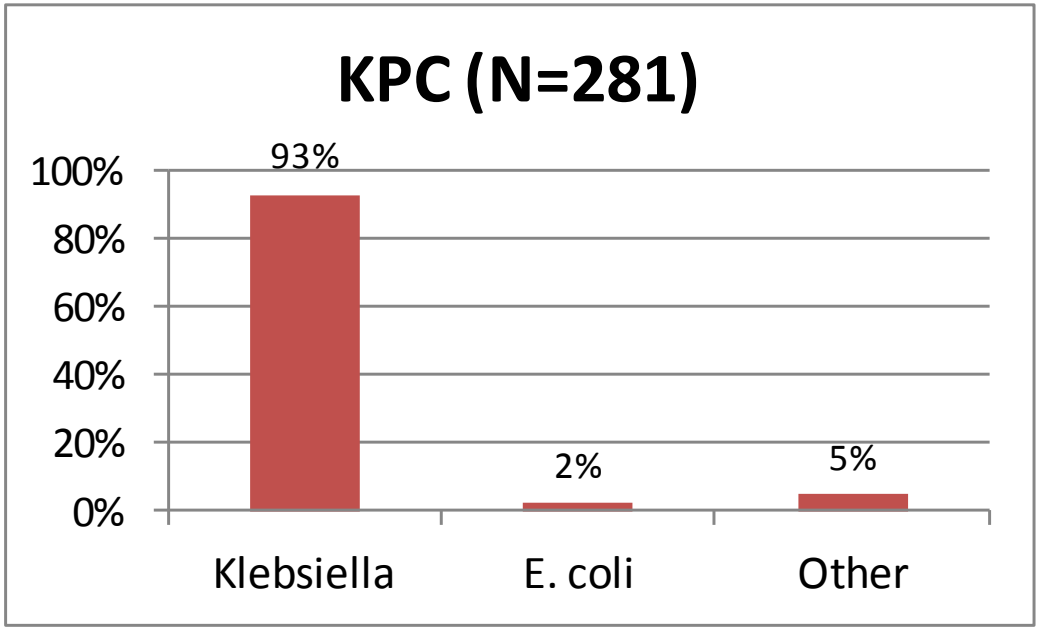
Entire Dataset

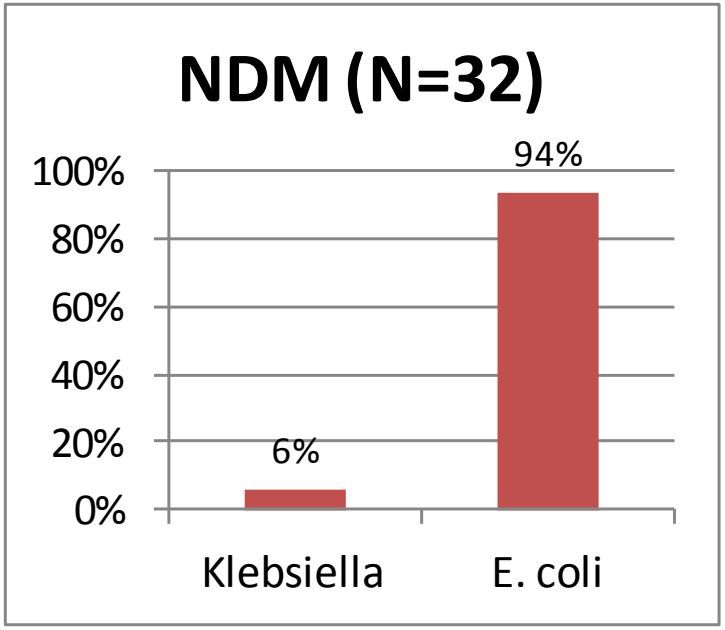
Resistance mechanisms reported to XDRO registry



Data through March 20, 2014; from pts with reported mechanism data, 68% of total

Organism distribution





Data through March 20, 2014; from pts with reported mechanism data, 68% of total

CRE definition and laboratory considerations

XDRO registry

CRE definition: Enterobacteriaceae with one of the following test results:

1. Molecular test (e.g., PCR) specific for carbapenemase

OR

2. Phenotypic test (e.g., Modified Hodge) specific for carbapenemase production

OR

3. For ***E. coli*** **and** ***Klebsiella*** species only: non-susceptible to ONE of the carbapenems (doripenem, meropenem, or imipenem) AND resistant to ALL third generation cephalosporins tested (ceftriaxone, cefotaxime, and ceftazidime).

Report 1st CRE event per patient per encounter

CRE reporting: points of confusion

- What are Enterobacteriaceae?

Common	*E. coli*, Klebsiella spp.
Less common	Enterobacter, Proteus, Citrobacter, Serratia, Morganella, or Providentia species
Never	Pseudomonas, Acinetobacter

- Ignore ertapenem susceptibility
- ESBL (extended spectrum β-lactamase) does not qualify as CRE

Laboratory considerations

Criterion	Lab test	Common?
1: Molecular	PCR	Some
2: Phenotypic	Modified Hodge	Some
3: Susceptibility	Automated system	All labs

- Ask your lab about testing capability
  - Currently, many facilities will only use criterion 3
- Molecular testing (PCR) tests for the presence of CRE genes, and is currently the only way to confirm the carbapenemase type (KPC vs NDM)

Laboratory example

BLOOD CULTURE (PERIPHERAL) (Abnormal):
PROCEDURE: BLOOD CULTURE (PERIPHERAL)
SOURCE: BLOOD
COLLECTED: [redacted]
---------- FINAL REPORT ----------
FINAL REPORT [redacted]
GROWTH OF GRAM NEGATIVE RODS
FINAL IDENTIFICATION: KLEBSIELLA PNEUMONIAE
This isolate demonstrates carbapenemase production.
Carbapenems, cephalosporins, and penicillins are unlikely to be effective in treatment of serious infections. Contact precautions required.
---------- SUSCEPTIBILITY TESTING ----------

	K PNEUMO			
	MIC mcg/ml	MIC INTERP	MIC mcg/ml	ET INTERP
TRIMETH/SULFA	>2/38	RESISTNT		
CEFAZOLIN	>16	RESISTNT		
TIGECYCLINE			1.00	SUSCEPT
LEVOFLOXACIN	>4	RESISTNT		
CEFOXITIN	16	INTERMED		
PIP/TAZOBACTAM	>64	RESISTNT		
TICARCIL/K CLAV	>64	RESISTNT		
CEFTRIAXONE	>32	RESISTNT		
GENTAMICIN	<=4	SUSCEPT		
TOBRAMYCIN	>8	RESISTNT		
AMIKACIN	16	SUSCEPT		
IMIPENEM	8	RESISTNT		
MEROPENEM	>8	RESISTNT		
CEFEPIME	16	RESISTNT		
COLISTIN			.38	SUSCEPT
A ERTAPENEM	>4	RESISTNT		

This laboratory performed confirmation testing and thus was able to determine carbapenemase presence. (but I had to ask the lab that the test was PCR and that it confirmed KPC)

Ceftriaxone was only 3rd gen cephalosporin reported

Non-susceptible to at least 1 carbapenem

Ignore ertapenem results

List of questions to ask your lab

1) Do you perform Modified Hodge testing for CRE?
2) Do you perform PCR testing for CRE?
   - If yes, can you confirm KPC or NDM?
3) Do you perform any special testing to screen for NDM (such as metallo-β-lactamase E-test [MBL E-test]?)

XDRO registry website updates

XDRO registry

Sample Hospital change facility

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Submit Report

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Facility Submission History

Facility Alert History

XDRO Dashboard

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

XDRO Report

XDRO culture information

* **Organism name (genus/species)**
Please Select Organism:

* **Specimen source**
Please Select Specimen:

* **XDRO criteria** (select all that apply)
Reporting rule

☐ **Molecular test** (e.g. PCR) specific for carbapenemase

☐ **Phenotypic test** (e.g. Modified Hodge) specific for carbapenemase production

☐ **For E. coli and Klebsiella spp. only:**
Resistant to ALL 3rd gen cephalosporins tested and non-susceptible (intermediate or resistant) to one carbapenem. **Ignore ertapenem.**

* **Date (culture acquisition)**
mm / dd / yyyy

* **Mechanism of resistance**
Please Select Mechanism:

Facility information

Facility name
Sample Hospital

* **Patient MRN**

* **Date of admission/Encounter Date**
mm / dd / yyyy

☐ Culture obtained as outpatient

Patient demographics

* **First name**

* **Last name**

Maiden name(if applicable)

XDRO registry

Sample Hospital change facilit

Test User1 | Home | Help | Go Back | Logout

XDRO Report

XDRO culture information

* **Organism name (genus/species)**

Please Select Organism:

- Please Select Organism:
- Citrobacter freundii
- Citrobacteri koseri
- Citrobacter spp.
- Enterobacter aerogenes
- Enterobacter cloacae
- Enterobacter spp.
- Escherichia coli
- Klebsiella oxytoca
- Klebsiella pneumoniae
- Klebsiella spp.
- Morganella morganii
- Pantoea agglomerans
- Proteus mirabilis
- Proteus spp.
- Providencia stuartii
- Providencia spp.
- Salmonella spp.
- Serratia marcescens
- Serratia spp.

* **XDRO criteria** (select all that apply)

Reporting rule

☐ **Molecular test** (e.g. PCR) specific for carbapenemase

☐ **Phenotypic test** (e.g. Modified Hodge) specific for carbapenemase production

☐ **For E. coli and Klebsiella spp. only:** Resistant to ALL 3rd gen cephalosporins tested and non-susceptible (intermediate or resistant) to one carbapenem. **Ignore ertapenem.**

* **Date (culture acquisition)**

mm / dd / yyyy

* **Mechanism of resistance**

Please Select Mechanism:

Fa

* **Patient MRN**

* **Date of admission/Encounter Date**

mm / dd / yyyy

utpatient

Pa s

* **First name**

* **Last name**

Maiden name(if applicable)

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

XDRO Report

XDRO culture information

* **Organism name (genus/species)**
Klebsiella pneumoniae

* **Specimen source**
Please Select Specimen:

* **XDRO criteria** (select all that apply)
Reporting rule

☐ **Molecular test** (e.g. PCR) specific for carbapenemase

☐ **Phenotypic test** (e.g. Modified Hodge) specific for carbapenemase production

☐ **For E. coli and Klebsiella spp. only:** Resistant to ALL 3rd gen cephalosporins tested and non-susceptible (intermediate or resistant) to one carbapenem. **Ignore ertapenem.**

* **Date (culture acquisition)**
mm / dd / yyyy

* **Mechanism of resistance**
Please Select Mechanism:

Facility information

Facility name
Sample Hospital

* **Patient MRN**

* **Date of admission/Encounter Date**
mm / dd / yyyy

☐ Culture obtained as outpatient

Patient demographics

* **First name**

* **Last name**

Maiden name(if applicable)

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

XDRO Report

XDRO culture information

* **Organism name (genus/species)**
Klebsiella pneumoniae

* **Specimen source**
Please Select Specimen:

* **XDRO criteria** Reporting rule

☑ **Molecular test** (e.g. PCR) specific for carbapenemase

☐ **Phenotypic test** (e.g. Modified Hodge) specific for carbapenemase production

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mm / dd / yyyy

* **Mechanism of resistance**
Please Select Mechanism:

Facility information

Facility name
Sample Hospital

* **Patient MRN**

* **Date of admission/Encounter Date**
mm / dd / yyyy

☐ Culture obtained as outpatient

Patient demographics

* **First name**

* **Last name**

Maiden name(if applicable)

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

XDRO Report

XDRO culture information

* **Organism name (genus/species)**
Klebsiella pneumoniae

* **Specimen source**
Please Select Specimen:

* **XDRO criteria** Reporting rule

☑ **Molecular test** (e.g. PCR) specific for carbapenemase

☐ **Phenotypic test** (e.g. Modified Hodge) specific for carbapenemase production

☑ **For E. coli and Klebsiella spp. only:**
Resistant to ALL 3rd gen cephalosporins tested and non-susceptible (intermediate or resistant) to one carbapenem. **Ignore ertapenem.**

* **Date (culture acquisition)**
mm / dd / yyyy

* **Mechanism of resistance**
KPC (Klebsiella pneumonia

Please Select Mechanism:
KPC (Klebsiella pneumoniae carbapenemase)
NDM-1 (New Delhi Metallo-ß-lactamase)
OXA
Other
Unknown

Facility information

Facility name
Sample Hospital

* **Patient MRN**

* **D**
mm / dd / yyyy

☐ Culture obtained as outpatient

Patient demographics

* **First name**

* **Last name**

Maiden name(if applicable)

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

XDRO Report

XDRO culture information

* **Organism name (genus/species)**
Klebsiella pneumoniae

* **Specimen source**
Urine

* **XDRO criteria** Reporting rule

☑ **Molecular test** (e.g. PCR) specific for carbapenemase

☐ **Phenotypic test** (e.g. Modified Hodge) specific for carbapenemase production

☑ **For E. coli and Klebsiella spp. only:**
Resistant to ALL 3rd gen cephalosporins tested and non-susceptible (intermediate or resistant) to one carbapenem. **Ignore ertapenem.**

* **Date (culture acquisition)**
04 / 29 / 2014

* **Mechanism of resistance**
KPC (Klebsiella pneumonia

Facility information

Facility name
Sample Hospital

* **Patient MRN**

* **Date of admission/Encounter Date**
mm / dd / yyyy

☐ Culture obtained as outpatient

Patient demographics

* **First name**

* **Last name**

Maiden name(if applicable)

Patient demographics

* **First name**

* **Last name**

Maiden name(if applicable)

* **Gender**

Male Female

* **Date of birth(mm/dd/yyyy)**

mm / dd / yyyy

Social Security Number(last4)

Race

Please Select One:

Ethnicity

Hispanic or Latino

Not Hispanic or Latino

* **Street address**

* **City**

Chicago

* **County**

Cook

* **State**

Illinois

* **Zip code**

Comments

CANCEL SAVE DRAFT SUBMIT

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

Submit Report

Search Registry

Facility Submission History

Facility Alert History

XDRO Dashboard

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

Search Patient

* Last name

* Date of birth mm / dd / yyyy

First name

Query

Search Instruction

a. Available fields

Last name (required), first name (optional), DOB (required).

b. Search algorithm

i. If you enter all 3 fields, then attempt to match (exact; case insensitive) on all 3 fields.

ii. If no match returns on 3 fields, then attempt to match (exact; case insensitive) on last name and DOB (ignore first name completely).

c. Results display

i. In general, You will see the search results for exactly how you entered the information. If there are no exact matches for last name and dob, you will see a NULL result.

Sample Hospital change facility

Test User1 Home Help Go Back Logout

Submit Report

Search Registry

Facility Submission History

Facility Alert History

XDRO Dashboard

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

Sample Hospital Submission History

First name | Last name | Date of birth (mm / dd / yyyy) | SSN(last4) | RID | Report (All) | Search

RID	Name	Date of Birth	MRN	Organism	▼Culture Date	Status	Username
585	Q, Q	12/12/2010	1212	Citrobacter spp.	03/01/2014	Pending	devxtest
835	Duck, Daffy	11/13/1973	1234	Klebsiella pneumoniae	02/14/2014	Submitted	rleidig
1017	T, Test	01/01/1955	1234536	Escherichia coli	12/31/2013	Submitted	devxtest
1018	B, A	11/11/2011	1234536	Escherichia coli	12/31/2013	Submitted	devxtest
846	S, B	11/11/1950	32152	Citrobacter spp.	12/12/2013	Submitted	devxtest
777	E, Ds	11/11/1982	1110	Enterobacter aerogenes	11/22/2013	Submitted	devxtest
861	, Test Criteria			Escherichia coli	11/12/2013	Pending	devxtest
871	Gao, TestUI	11/11/1958	lkdsfkj	Klebsiella oxytoca	11/11/2013	Submitted	devxtest
872	D, Testzip	11/12/1950	2321321	Enterobacter aerogenes	11/11/2013	Submitted	devxtest
899	T, Test	01/23/1980	3232132	Citrobacter spp.	11/11/2013	Submitted	devxtest

previous | 1 | 2 | 3 | next

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

XDRO Report - Sample Hospital

Patient information

Patient name: Duck, Daffy
MRN: 1234
Admission date: 03/13/2014
Date of birth: 11/13/1973
SSN (last 4):
Race:
Address: 122 S. Michigan, Chicago, IL 60603

XDRO culture information

Organism: Klebsiella pneumoniae
Culture date: 02/14/2014
XDRO criterion: Molecular test
Specimen source:
Mechanism of resistance: KPC
Comments:

Submitted by ROBYNN LEIDIG, 03/14/2014, Sample Hospital

Go Back | Edit | Delete | Print

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

XDRO Report - Sample Hospital

Patient information

Patient name: Duck, Daffy **MRN:** 1234 **Admission date:** 03/13/2014

Date of birth: 11/13/1973 **SSN (last 4):** **Race:**

Address: 122 S. Michigan, Chicago, IL 60603

XDRO culture information

Organism: Klebsiella pneumoniae **Culture date:** 02/14/2014

XDRO criterion: Molecular test **Specimen source:**

Mechanism of resistance: KPC

Comments:

Submitted by ROBYNN LEIDIG, 03/14/2014, Sample Hospital

Reason for deleting the above record: Please Select Reason: ▾ **Comment:**

De-colonization or infection resolution is not a valid reason to delete the record.

XDRO registry

Sample Hospital change facility

Test User1 | Home | Help | Go Back | Logout

XDRO Report - Sample Hospital

Patient information

Patient name: Duck, Daffy
MRN: 1234
Admission date: 03/13/2014
Date of birth: 11/13/1973
SSN (last 4):
Race:
Address: 122 S. Michigan, Chicago, IL 60603

XDRO culture information

Organism: Klebsiella pneumoniae
Culture date: 02/14/2014
XDRO criterion: Molecular test
Specimen source:
Mechanism of resistance: KPC
Comments:

Submitted by ROBYNN LEIDIG, 03/14/2014, Sample Hospital

Reason for deleting the above record: Please Select Reason: **Comment:**

De-colonization or infection resc on to delete the record.

- Please Select Reason:
- Data entry error
- Laboratory testing error
- Patient deceased
- Not a CRE
- Other

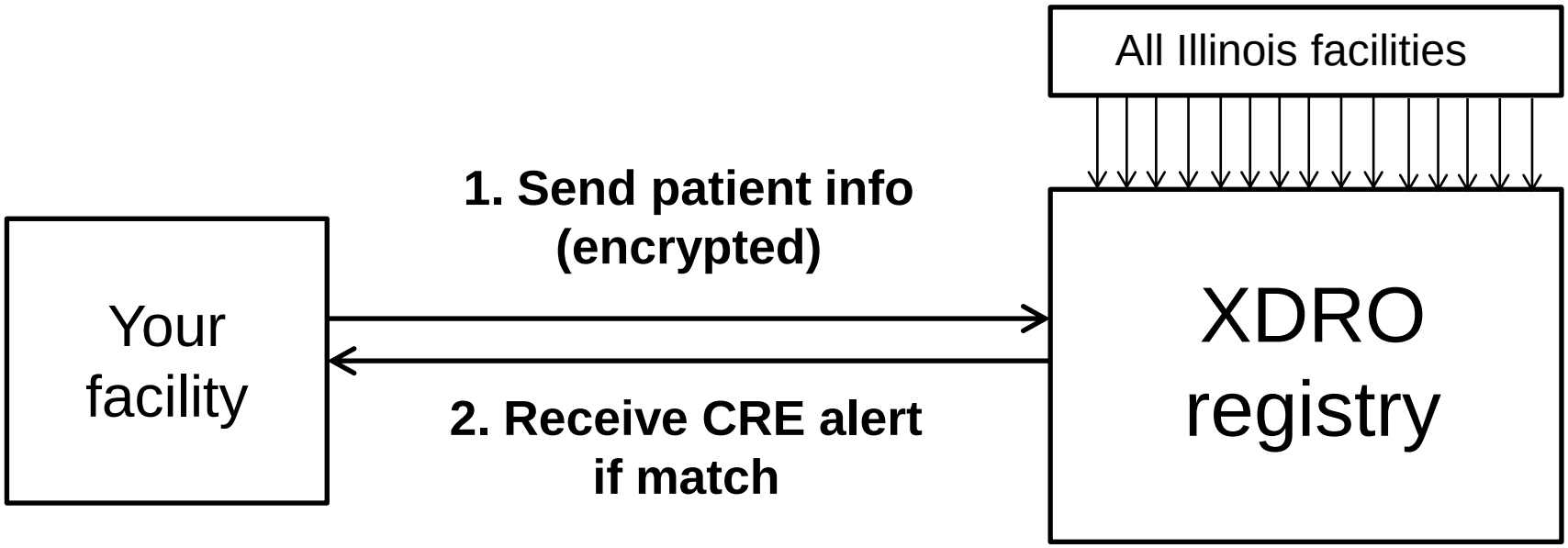
Querying and automated alerts

XDRO registry

Querying the registry

- Currently, querying requires typing patient information into the webpage
  - Reasonable for facilities with few admissions per day (e.g., long term care facilities)
  - Large facilities may want to query only high-risk patients (e.g., transfers)
- Planned: automated CRE alerts

Automated CRE alerts



Automated alerts will be piloted at limited hospitals in 2014; anticipate wider availability in 2015

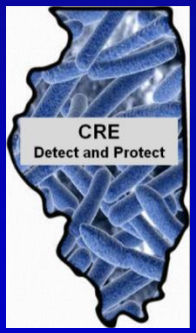
Question and answer forum

XDRO registry

Upcoming Webinars

Target Audience	Topics	Date
Hospital leadership	Patient safety and quality improvement initiatives, Role of infection prevention	May 13
Laboratorians	CRE testing guidelines, Reporting to XDRO	June 6

Webinar recordings and slides will be available at https://www.xdro.org/cre-campaign/index.html



Survey and Continuing Education Units

- Fill out webinar evaluation on SurveyMonkey at:

https://www.surveymonkey.com/s/CRE-hospital-ip

- Instructions on applying for CEUs will appear at the end of the SurveyMonkey

- Surveys and CEU applications must be completed by **Friday, May 9**!

Illinois Department of PUBLIC HEALTH

Contact: Robynn.Leidig@illinois.gov or Angela.Tang@illinois.gov