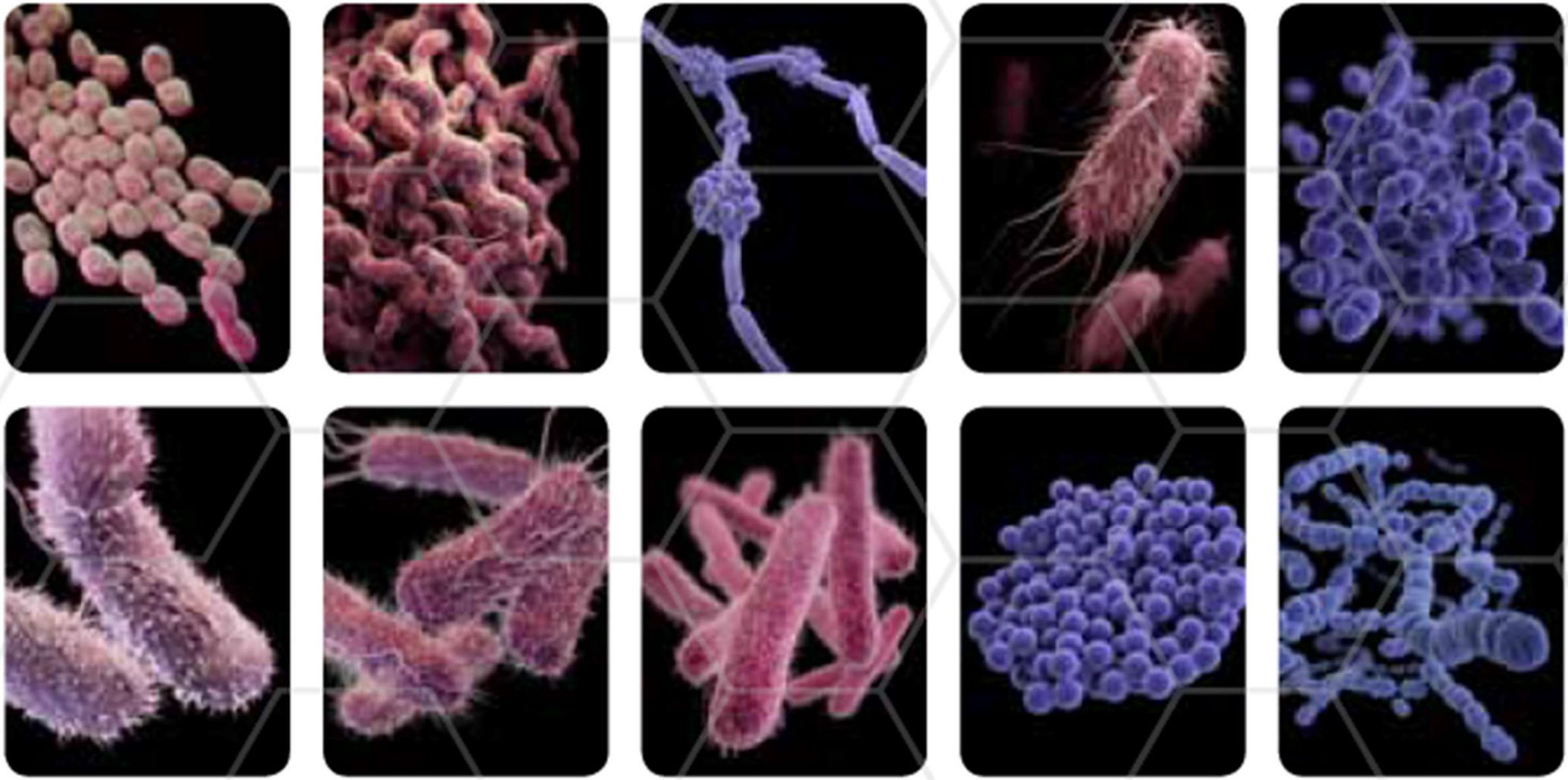


PUBLIC HEALTH SURVEILLANCE FOR TARGETED MULTIDRUG RESISTANT ORGANISMS

Medical Lab Symposium
10/9/19

Outline

- Why do public health surveillance?
- Targeted MDROs in {STATE}
- Communicating with labs

Public Health Surveillance

- Notifiable conditions
  - Why report?
  - What is on the list?
  - Where is the list?
  - What happens after a report?

Public Health Surveillance

- Notifiable conditions
  - Why report?—**There is a role for PH in tracking and responding to the disease.**
  - What is on the list?
  - Where is the list?
  - What happens after a report?

Public Health Surveillance

- Notifiable conditions
  - Why report?
  - What is on the list?—**Conditions deemed of PH importance, conditions established by law in {RCW}.**
  - Where is the list?
  - What happens after a report?

Public Health Surveillance

- Notifiable conditions
  - Why report?
  - What is on the list?
  - Where is the list?—**Should be posted on wall of your lab!**
  - What happens after a report?

Link to notifiable conditions webpage

Public Health Surveillance

- Notifiable conditions
  - Why report?
  - What is on the list?
  - Where is the list?
  - What happens after a report?—**Public health will:**
    - **Investigate**
    - **Respond**
    - **Track data**
    - **Analyze data**
    - **Summarize information**
    - **Disseminate information**
    - **Use information to adjust policies for preventing and controlling disease**

Response to Targeted MDRO Reports

- Some MDROs are on notifiable conditions list, some not
- PH response to MDROs in healthcare settings supports healthcare infection prevention to prevent regional spread
- CDC Containment Strategy
  - Rapid identification
  - Onsite infection control assessments
  - Colonization screenings when needed
  - Coordinated response between facilities

Vital Signs: Containment of Novel Multidrug-Resistant Organisms and Resistance Mechanisms — United States, 2006–2017

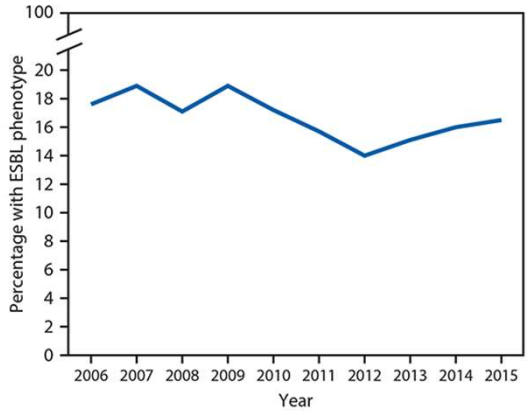
Weekly / April 6, 2018 / 67(13);396-401

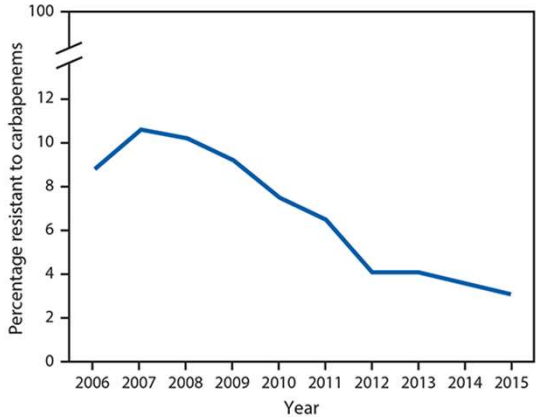
On April 3, 2018, this report was posted online as an MMWR *Early Release.*

Kate Russell Woodworth, MD[1]; Maroya Spalding Walters, PhD[1]; Lindsey M. Weiner, MPH[1]; Jonathan Edwards, MStat[1]; Allison C. Brown, PhD[1]; Jennifer Y. Huang, MPH[1]; Sarah Malik, PhD[1]; Rachel B. Slayton, PhD[1]; Prabasaj Paul, PhD[1]; Catherine Capers, MA[1]; Marion A. Kainer, MD[2]; Nancy Wilde[3]; Alicia Shugart, MA[1]; Garrett Mahon, MPH[1]; Alexander J. Kallen, MD[1]; Jean Patel, PhD[1]; L. Clifford McDonald, MD[1]; Arjun Srinivasan, MD[1]; Michael Craig, MPP[1]; Denise M. Cardo, MD[1] (View author affiliations)

https://www.cdc.gov/mmwr/volumes/67/wr/mm6713e1.htm

E. coli and *Klebsiella* isolates from NHSN device associated surveillance, 2006-2015





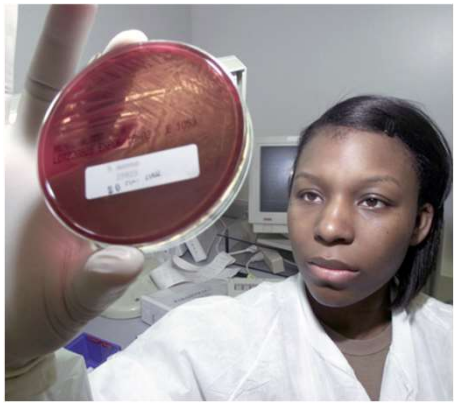
”early aggressive response…can slow emergence and even decrease the occurrence of infections from resistant pathogens”

As of July 2019, Novel or Targeted MDROs are defined as:

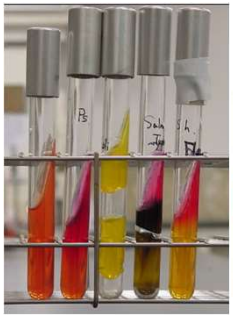
- Pan-resistant organisms,
- Carbapenemase-producing enterobacteriaceae,*
- Carbapenemase-producing *Pseudomonas* spp.,
- Carbapenemase-producing *Acinetobacter baumannii*, and
- *Candida auris* *

* CRE and *C. auris* are being added to notifiable conditions list in current revision.

Reporting and Submitting to Public Health



Local Public Health



Pic of State PHL

CR-Gram negatives

- Outline which are notifiable and which are voluntary submission

Journal List > Emerg Infect Dis > v.24(4); 2018 Apr > PMC5875254

EMERGING INFECTIOUS DISEASES®

Emerg Infect Dis. 2018 Apr; 24(4): 727–734.
doi: 10.3201/eid2404.171461

PMCID: PMC5875254
PMID: 29553339

Emerg Infect Dis

Carbapenem-Nonsusceptible *Acinetobacter baumannii*, 8 US Metropolitan Areas, 2012–2015

Sandra N. Bulens,✉ Sarah H. Yi, Maroya S. Walters, Jesse T. Jacob, Chris Bower, Jessica Reno, Lucy Wilson, Elisabeth Vaeth, Wendy Bamberg, Sarah J. Janelle, Ruth Lynfield, Paula Snippes Vagnone, Kristin Shaw, Marion Kainer, Daniel Muleta, Jacqueline Mounsey, Ghinwa Dumyati, Cathleen Concannon, Zintars Beldavs, P. Maureen Cassidy, Erin C. Phipps, Nicole Kenslow, Emily B. Hancock, and Alexander J. Kallen

- Half of *A. baumannii* non-susceptible to carbapenems
- Crude annual incidence 1.2 cases per 100,000 persons. 88% of cases had healthcare exposure during prior year
- 85% had indwelling device
- 75% hospitalized
- 41% with sterile site infection died

Infect Control Hosp Epidemiol. 2017 Nov;38(11):1335-1341. doi: 10.1017/ice.2017.189. Epub 2017 Sep 5.

Failure to Communicate: Transmission of Extensively Drug-Resistant bla OXA-237-Containing Acinetobacter baumannii-Multiple Facilities in Oregon, 2012-2014.

Buser GL[1], Cassidy PM[1], Cunningham MC[1], Rudin S[2], Hujer AM[2], Vega R[1], Furuno JP[3], Marshall SH[2], Higgins PG[4], Jacobs MR[5], Wright MS[6], Adams MD[6], Bonomo RA[2], Pfeiffer CD[7], Beldavs ZG[1].

- CONCLUSIONS: Interfacility transmission of XDR A. baumannii carrying the rare blaOXA-237 was facilitated by transfer of affected patients without communication to receiving facilities

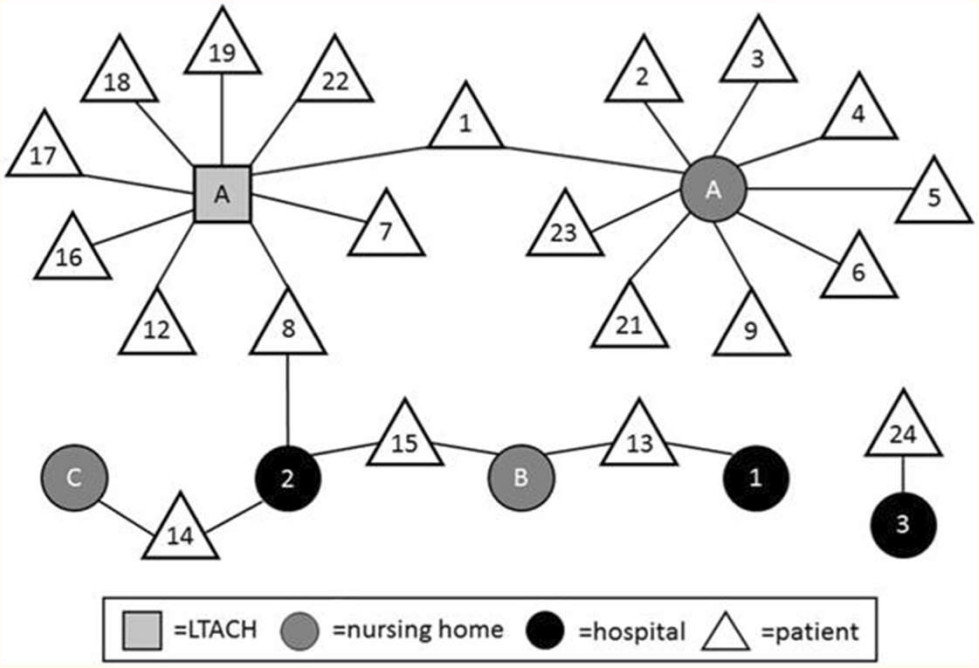
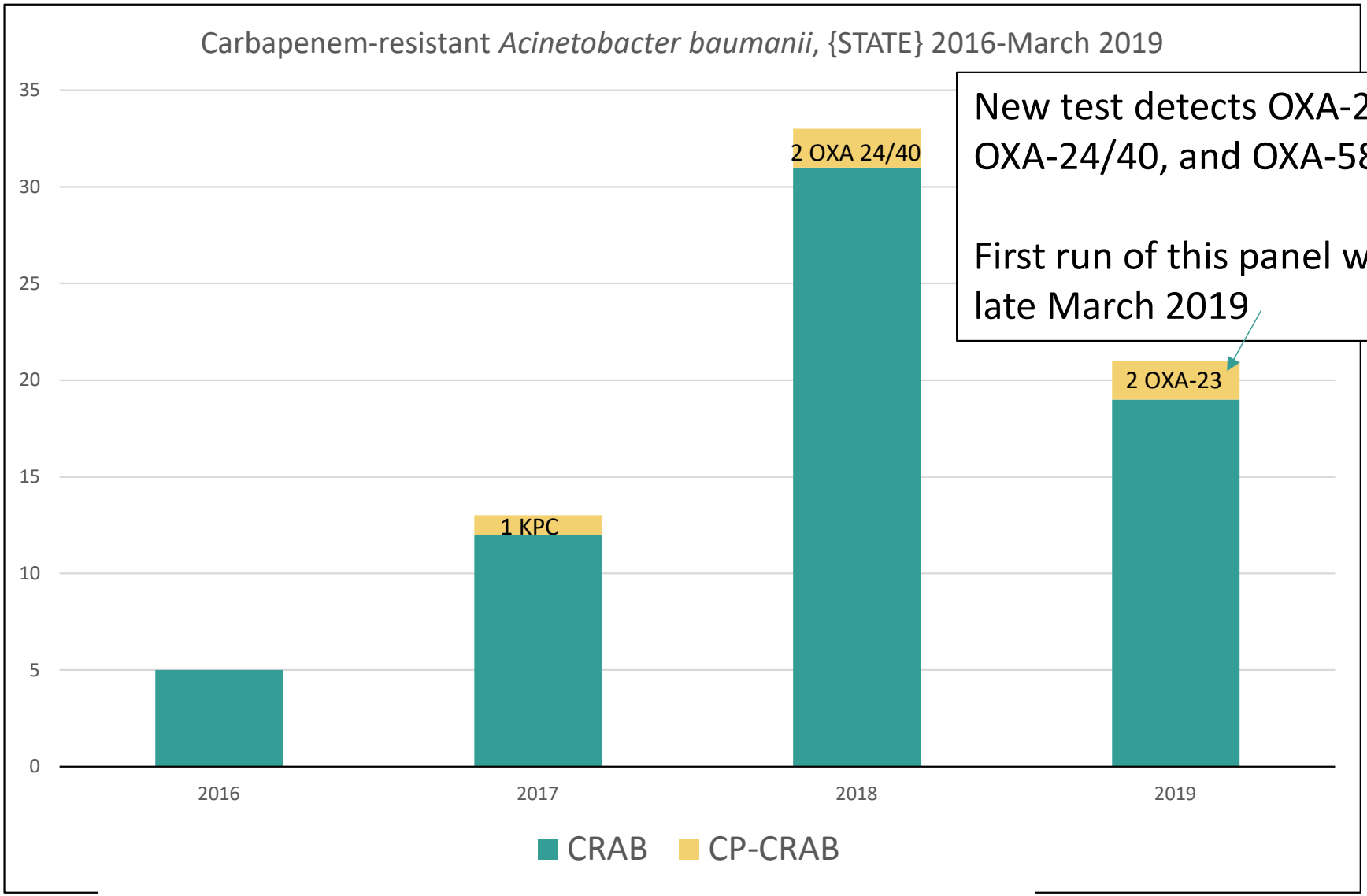


FIGURE 3

Exposure network of outbreak of extensively drug-resistant *Acinetobacter baumannii*—Oregon healthcare facilities, 2010–2014. Square, LTACH; light circle, nursing home; dark circle, hospital; triangle, patient.

Carbapenemase-producing CRAB in {STATE}



Before new test

CRAB cases reported to DOH (2013-June 13, 2019)

Year	2013	2014	2015	2016	2017	2018	2019
#CRAB cases	1	2	0	5	31	32	19
Before new test							
# Carbapenemase (%)	1 (100)	0	0	0	1 (3)	2 (6)	
# Carbapenemase-type	1 NDM	--	--	--	1 KPC	2 OXA 24/40	

After new test

Retrospective testing performed on select CRAB cases reported to DOH (2013-June 13, 2019)

Year	2013	2014	2015	2016	2017	2018	2019
#CRAB cases	1	2	0	5	31	32	19
Before new test							
# Carbapenemase (%)	1 (100)	0	0	0	1 (3)	2 (6)	
# Carbapenemase-type	1 NDM	--	--	--	1 KPC	2 OXA 24/40	
After new test*							
# Carbapenemase (%)					3 (10)	16 (50)	5 (26)
# Carbapenemase-type					1 KPC 2 OXA-23	5 OXA-24/40 11 OXA-23	4 OXA-23 1 OXA-24/40

*Retrospective testing performed on selected banked isolates due to competing lab priorities.

Carbapenemases in *Acinetobacter*

- Much more common than previously thought
- **High concern** due to
  - *Acinetobacter's* ability to persist in healthcare environment
  - Patients may remain colonized for long periods of time
  - Plasmid-mediated resistance can increase rapidly in healthcare settings