Development and Distribution of Educational Materials for the Prevention of Carbapenem-resistant *Enterobacteriaceae* (CRE) among acute and long-term care facilities

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Presentation Outline

• Background
• Purpose
• Methods
• Results/Findings
• Discussion
• Conclusion
• Acknowledgements
• Questions
What are Carbapenem-resistant *Enterobacteriaceae*?

- *Enterobacteriacea* – group of bacteria found in the human gut
- Three predominant species of *Enterobacteriacea* that develop resistance to Carbapenem antibiotics
CRE in Wisconsin
CRE in Wisconsin

- Median age = 63 years old
  - Age range 27-91
- 49 total patients
  - 39 inpatients
    - 77% (n=30) are from the southeastern region
    - 53% (n=16) of those in southeastern region were seen in Milwaukee Co.
  - 10 outpatients
  - Most seen in Southeastern region
The purpose of this capstone project was to prevent CRE transmission and infections among acute and long-term care facilities in Wisconsin through improved education and communication tools.
Methods

- Sampling frame
- Pre-intervention survey for local health departments (LHDs)
- Pre-intervention survey for infection preventionists (IPs)
- Interviews with IPs
- Conference pre and post-survey
- Post-intervention survey for LHDs
- Post-intervention survey for IPs
Pre-Intervention Survey Results for IPs
(Total number of IPs who responded to pre-intervention survey n=58)

- 71% (n=41) of IPs had no educational materials on hand for staff
- 74% (n=43) of IPs had no educational materials on hand for patients
- 66% (n=38) of IPs never provided any CRE education materials to staff or patients
- Emphasized need for education materials
Pre-Intervention Survey Results for IPs - Educational Tools IPs Would Find Most Useful

- Fact Sheet (n=55) - 95%
- Pamphlet (n=47) - 81%
- PowerPoint Presentation (n=35) - 60%
- Surveillance Data (n=25) - 43%
- Newsletter (n=8) - 14%
- Other (ie. Website n=5) - 9%
Pre-Intervention Survey Results for LHDs

(Total number of LHDs who responded to pre-intervention survey n=23)

- Knowledge in which LHDs felt they had some knowledge about CRE:
  - Risk factors 39% (n=9)
  - Reservoir 26% (n=6)
  - Modes of transmission 43% (n=10)
  - Prevention measures 43% (n=10)
  - Surveillance 6% (n=1)
  - No knowledge 43% (n=10)
Pre-Intervention Survey Results for LHDs – Educational Materials LHDs Find Most Useful

- Fact Sheet (n=23): 100%
- Pamphlet (n=14): 61%
- PowerPoint Presentation (n=9): 39%
- Surveillance (n=15): 65%
- Newsletter (n=7): 30%
- Other (shorter version CDC guidelines n=1): 4%
Pre-conference and Post-conference Survey Results

• Conference was held for IPs whose facilities were located in the City of Milwaukee jurisdiction

• Pre-conference survey (n=36)
  • 64% (n=23) have education materials for staff
  • 53% (n=19) have education materials for patients

• Post-conference survey (n=35)
  • 97% (n=34) found education tools very useful or somewhat useful
  • 94% (n=33) felt that they were easy to comprehend
  • 77% (n=27) will use them for further education
Post-Intervention Survey Results for IPs
(Total number of IPs who responded to post-intervention survey n=49)

- 76% (n=37) of IPs now had educational materials on hand for staff
- 63% (n=31) of IPs now had educational materials on hand for patients
- 63% (n=31) of IPs have provided educational materials to staff and/or patients
- Education materials are readily available and have been used
Post-Intervention Survey Results for LHDs
(Total number of LHDs who responded to post-intervention survey n=11)

- Knowledge in which LHDs felt they had some knowledge about CRE:
  - Risk factors 91% (n=10)
  - Reservoir 55% (n=6)
  - Modes of transmission 82% (n=9)
  - Prevention measures 91% (n=10)
  - Surveillance 45% (n=5)
  - No knowledge 0% (n=0)
Overall Evaluation of Education Materials

- **IPs (n=49)**
  - Are educational materials useful?
    - 76% (n=37) very useful or somewhat useful
  - Are education materials easy to understand?
    - 90% (n=44) very easy or somewhat easy

- **LHDs (n=11)**
  - Are educational materials useful?
    - 73% (n=8) very useful or somewhat useful
  - Are education materials easy to understand?
    - 82% (n=9) very easy or somewhat easy
Discussion

- Sample Size Differences
  - Was small overall
  - Decreased Response Rate of LHDs

- Additional clarity of education materials

- Clarity of individuals role in CRE prevention
  - CRE Tool Kit
Conclusion

• Increase in availability of educational materials to direct care staff and patients

• Increase in IPs who had distributed educational materials

• Knowledge about prevention measures, reservoirs, modes of transmission, etc. may have improved

• Educational materials were found to be useful and easy to understand

• Based on the comparison between surveys, it is suggested that educational materials could have increased education and communication among acute and long-term care facilities for CRE prevention.
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Questions???