



Information Services Role in Infection Prevention Within Healthcare



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Summary

Technology usage within healthcare continues to increase across the United States. Infection prevention is a focus for patient care entities. Information technology requires similar steps to sterilize between use. Information Services has a pivotal role to prevent spread of infection. Documentation to sterilize medical equipment is given by the Centers for Disease Control and Prevention and administered by each health organization. There is an observed opportunity for documentation to be supplied, enforced and reviewed regularly to ensure technology prevalent in hospitals meets the same rigor for sterilization.

Introduction

This project focuses on a bacterium called Clostridium difficile (C. difficile) and the role Information Services provides within patient care areas to prevent the spread of this contagious germ. C. difficile can be spread through touching surfaces that are contaminated. Technology is used throughout healthcare entities. There are limited reports available that provide quantity of technology used within those facilities. Data was collected from the Centers for Disease Control and Prevention (CDC) in 2017 to track reported hospital onset of C. Diff which was compared to the data aggregated from the Office of the National Coordinator for Health IT (ONC) in 2016. The ONC's collection tracked Meaningful Use of Electronic Health Records implementation in all 50 states.

It was assumed that if hospitals utilized Electronic Health Records systems, they were using technology that could be susceptible to bacteria contamination. Additionally, all four types of healthcare entities within all 50 states were represented within this study: Acute Care Hospitals, Critical Access Hospitals, Inpatient Rehabilitation Facilities, and Long-Term Acute Care Hospitals.

Implementation

Data was collected through the CDC and ONC. Much of the data harvested had a wide range of variable names and identifiers. This data was cleaned, aggregated and imported into Tableau to visualize patterns.

Number of Healthcare Systems Reporting Hospital-onset of C. difficile in 2017

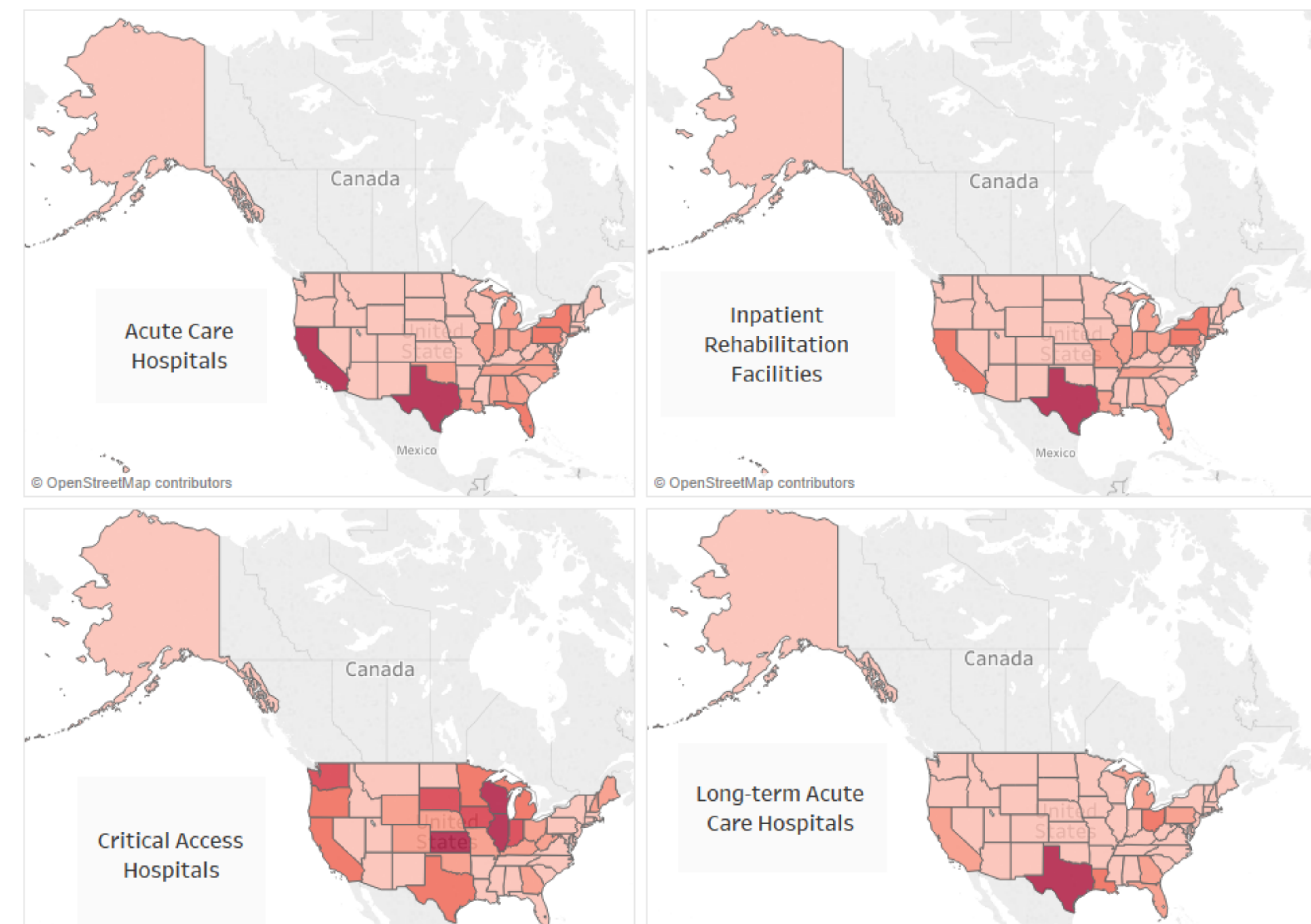


Fig. 1 C. difficile hospital-onset in 2017

Facts

- ACH Total: 3,669
- CAH Total: 757
- IRF Total: 1,145
- LTACH Total: 466
- National Total: 6,037
- National Percentage of MU Adoption: 53%

Total Number of Hospitals Reporting Hospital-onset of C. difficile Versus Percentage of Physicians, PA's, and NP's MU by State

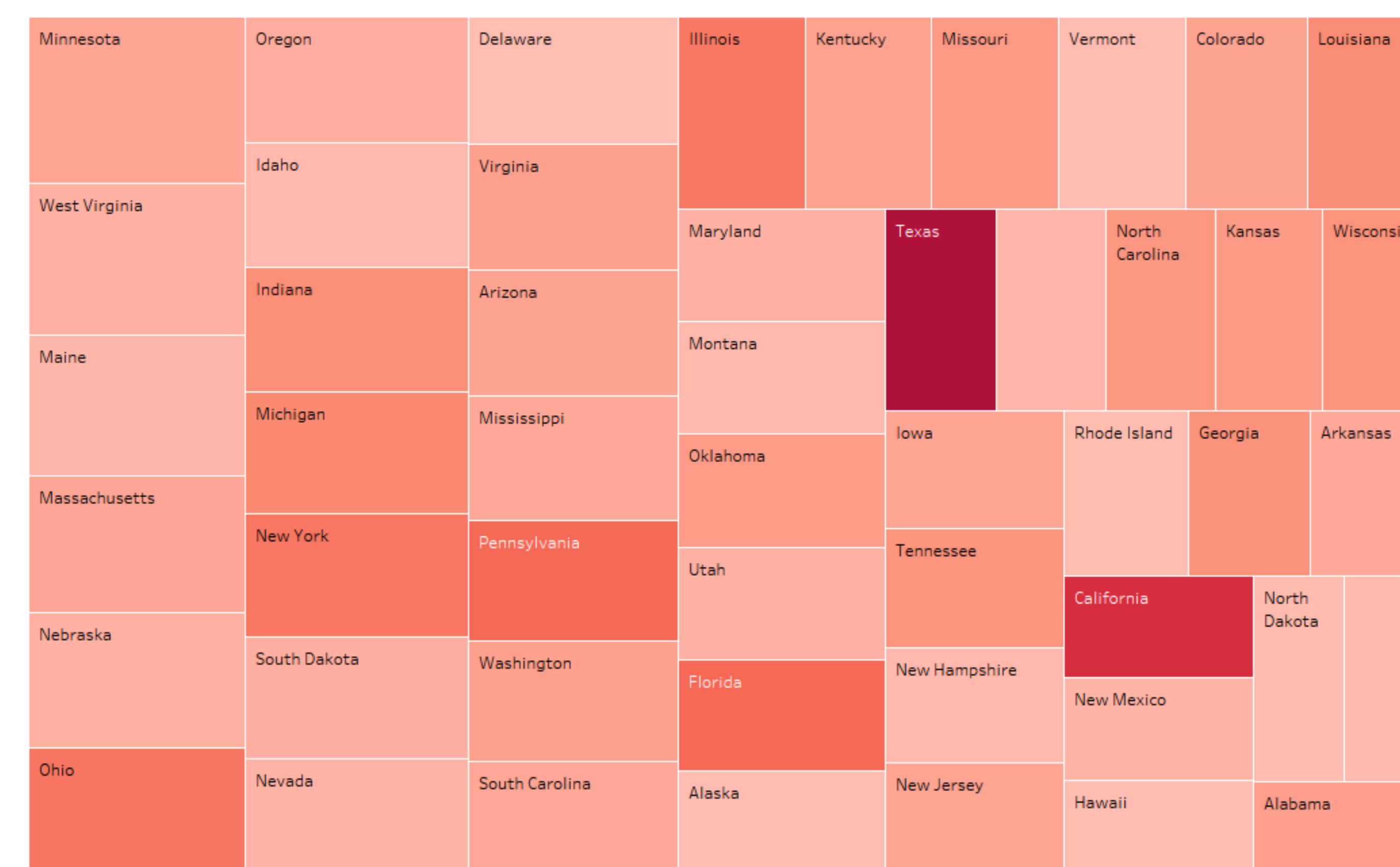


Fig. 2 Comparison of hospitals reporting C. difficile onset against Meaningful Use incentives received

Results and Evaluation

Higher totals of reported hospital onset of C. difficile did not necessarily correlate to higher percentages of advanced primary providers Meaningful Usage within Electronic Health Records. However, certain states did exhibit this behavior: Texas and California. Acute Care Hospitals (ACH) had higher reports of hospital acquired C. difficile however, there are also more ACH's that reported within the study.

Information Technology Sterilization Standards

Consistent guidelines proposed across accredited sources:

1. Wash hands prior to using technology
2. Avoid using gloves while on technology
3. Wash hands after contact with patient or specimen collection
4. Movable technology sterilized prior to moving into another patient care area
5. Sterilization of keyboards and touch screen surfaces with germicidal cloth vigorously for minimum of 5 seconds at least once a day or between use
6. Installing technology at least 3 feet from water source
7. Splashguards used in water utilized areas to prevent contamination of technology

Conclusion

Use of technology in healthcare will continue to expand as EMR incentives and mandates occur. Information Services has an integral role in preventing spread of bacterium such as C. difficile. Safety standards for cleaning technology including keyboards and laptops should be actively applied and reviewed with Information Services teams in healthcare. Future studies focused on prevalence of technology use in healthcare entities would be helpful in tracking and correlating spread of infection. The CDC should evaluate opportunities to document best practices to be applied for Information Services across the United States.

References

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