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The findings and conclusions in this presentation are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Healthcare-associated infections (HAIs) are infections patients can get while receiving medical treatment in a healthcare facility. Working toward the elimination of HAIs is a CDC priority. The standardized infection ratio (SIR) is a summary statistic that can be used to track HAI prevention progress over time; lower SIRs are better. The infection data are reported to CDC's National Healthcare Safety Network (NHSN).

HAIs data for nearly all U.S. hospitals are published on the Hospital Compare website. This report is based on 2014 data, published in 2016.

### CLABSIs
- **Central Line-Associated Bloodstream Infections**: 50% lower compared to Nat'l Baseline*

### CAUTIs
- **Catheter-Associated Urinary Tract Infections**: 0% no change compared to Nat'l Baseline

### MRSA Bacteremia
- 13% lower compared to Nat'l Baseline*

### SSIs
- **Abdominal Hysterectomy**: 17% lower compared to Nat'l Baseline*
- **Colon Surgery**: 2% lower compared to Nat'l Baseline*
- **C. difficile Infections**: 8% lower compared to Nat'l Baseline*

* Statistically significant
HAI Prevention

Partial implementation of known prevention strategies

Complete implementation of known Prevention strategies

Ongoing innovation for new prevention strategies

Prevented

Preventable

Prevention approach unknown
What is the Prevention Epicenters Program?

- A program in which CDC works collaboratively with academic partners to create new strategies for preventing healthcare-associated infections and antibiotic resistance
  - Aligns public health and academic innovation goals
It’s not a grant program, it’s a cooperative agreement

- CDC subject matter experts work together with outside scientists
- Informed by CDC’s insight gained from surveillance, outbreak investigation, policy insight, etc.

Helps keep public health/academic goals on the same path
- Emphasis on inter-epicenter collaboration

- CDC facilitates opportunities for collaboration with other partners (e.g. health departments, health systems, etc.)

- Innovation agenda focused on pragmatic public health solutions
  - Goal to move toward practical public health application as quickly as possible
Example: Use of Chlorhexidine Bathing as an Infection Control Strategy

Effectiveness of Chlorhexidine Bathing to Reduce Catheter-Associated Bloodstream Infections in Medical Intensive Care Unit Patients

Susan C. Blessdale, MD, William E. Trick, MD, Ines M. Gonzalez, MD; Krista O. Tylczak, MD, Mary K. Hayden, MD; Robert A. Weinstein, MD
Arch Intern Med 2009;169(12):1372-1377
INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY OCTOBER 2009, VOL. 30, NO. 10

Original Article

Selective Use of Intranasal Mupirocin and Chlorhexidine Bathing and the Incidence of Methicillin-Resistant Staphylococcus aureus Colonization and Infection Among Intensive Care Unit Patients

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY OCTOBER 2009, VOL. 30, NO. 10

Original Article

Effectiveness of Routine Patient Cleansing with Chlorhexidine Gluconate for Infection Prevention in the Medical Intensive Care Unit

Kyle J. Continuing Medical Education Article

The effect of daily bathing with chlorhexidine on the acquisition of methicillin-resistant Staphylococcus aureus, vancomycin-resistant Enterococcus, and healthcare-associated bloodstream infections: Results of a quasi-experimental multicenter trial

Michael W. Climo, MD; Kent A. Sepkowitz, MD; Gianna Zuccotti, MD, MPH; Victoria J. Fraser, MD; David K. Warren, MD; Trish M. Perl, MD, MSc; Kathleen Sneed; John A. Jeremian MD; Jaime R. Robles, PhD; Edward S. Wong, MD
Crit Care Med 2009 Vol. 37, No. 6

63% of US Hospitals have implemented chlorhexidine bathing to prevent transmission of antibiotic resistant infections

Infect Control Hosp Epidemiol. 2016;37:1105-8
**Example: Regional Interventions to Control Antibiotic Resistance**

- **Shared Healthcare Intervention to Eliminate Life threatening Dissemination of MDROs in Orange County (SHIELD OC)**
  - **Providing Regional Organizations with Techniques to Control MDROs in Chicago (The Chicago PROTECT Project)**
    - Regional MDRO Intervention Orange County, California and Metropolitan Chicago
    - Use region specific patient sharing networks in simulation models to help to identify optimal intervention strategies, then implementing them and evaluate impact
Examples of New Investments

- Enhanced Detection of outbreaks of resistant pathogens in US hospitals
- Better ways to prevent transmission of resistant pathogens in healthcare settings
- Environmental Factors in Transmission
- Regionally coordinated public health interventions to prevent spread of antimicrobial resistance
- Antibiotic Stewardship
- Protecting the Microbiome
  - Identifying new strategies to prevent disruption of, or restore, our normal flora
Summary

- We have made progress in preventing antimicrobial resistant HAIs, but we need better prevention tools.

- The prevention innovation pipeline can expand our toolbox.
  - CDC is increasing its investment in HAI/AR prevention innovation that addresses public health goals.

- The pipeline is producing promising advances.
Thank You!

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