HAIs Have Met Their Match: Coordinated Prevention Strategies and Practices

Rekha Murthy, MD, FIDSA, FSHEA, Chair, HQI’s HAI Workgroup and Medical Director of Hospital Epidemiology, Cedars-Sinai Medical Center

Lori Schaumleffel, RN, PHN, CIC, COHN-S, Performance Coordinator, HAI Program, California Department of Public Health

Christine Martini-Bailey, RN, BSN, QI Project Lead, Health Services Advisory Group
The Changing Landscape of HAI

- Increasing antimicrobial resistance
- Decreasing pipeline of new antibiotics
- Public reporting legislation
- HAI Reimbursement penalties
- Health care reform
Many infections are inevitable, although some can be prevented.

Each infection is potentially preventable unless proven otherwise.

CA Leading the Way: HAI

- SB 739 – HAI, influenza vaccine
- SB 1058 – MRSA screening
- SB 158 – Infection control, Patient Safety
- SB 1311 – Antimicrobial Stewardship
## California Healthcare-Associated Infection (HAI) Progress

Data provide healthcare facilities and public health agencies knowledge to design, implement, and evaluate HAI prevention efforts.

### Legend
- 2013 state SIR is significantly lower (better) than comparison group in column header.
- Change in 2013 state SIR compared to group in column header is not statistically significant.
- 2013 state SIR is significantly higher (worse) than comparison group in column header.
- 2013 state SIR cannot be calculated.

### Table

<table>
<thead>
<tr>
<th>HAI Type</th>
<th># of California Hospitals That Reported Data to CDC's NHSN, 2013</th>
<th>2013 State SIR vs. 2012 State SIR†</th>
<th>2013 State SIR vs. 2013 Nat'l SIR</th>
<th>2013 State SIR vs. Nat'l Baseline‡</th>
<th>2013 State SIR</th>
<th>2013 Nat'l SIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTI</td>
<td>341</td>
<td>⬆ 7%</td>
<td>⬆ 16%</td>
<td>⬇ 10%</td>
<td>0.90</td>
<td>1.06</td>
</tr>
<tr>
<td>SSI, Abdominal Hysterectomy</td>
<td>303</td>
<td>⬇ 7%</td>
<td>⬇ 18%</td>
<td>⬆ 28%</td>
<td>0.72</td>
<td>0.86</td>
</tr>
<tr>
<td>SSI, Colon Surgery</td>
<td>318</td>
<td>⬆ 15%</td>
<td>⬆ 12%</td>
<td>⬆ 18%</td>
<td>0.82</td>
<td>0.92</td>
</tr>
<tr>
<td>MRSA Bacteraemia</td>
<td>359</td>
<td>2012 SIR not available</td>
<td>21%</td>
<td>27%</td>
<td>0.74</td>
<td>0.92</td>
</tr>
<tr>
<td>C. difficile Infections</td>
<td>359</td>
<td>2012 SIR not available</td>
<td>18%</td>
<td>5%</td>
<td>1.05</td>
<td>0.90</td>
</tr>
</tbody>
</table>

*Not all hospitals are required to report these infections; for example, some hospitals do not use central lines or urinary catheters, or do not perform colon or abdominal hysterectomy surgeries.
†The state's 2012 SIR can be found in the data tables of this report.
‡Nat'l baseline time period varies by infection type. See first column of this table for specifics.

### What is the Standardized Infection Ratio?

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 SIR for a facility or state is adjusted to account for factors that might cause infection rates to be higher or lower, such as hospital size, teaching status, the type of patients a hospital serves, and surgery and patient characteristics.

### What is California doing to prevent healthcare-associated infections?

California has a state mandate to publicly report at least one HAI to NHSN. California is one of 10 state health departments participating in CDC's Emerging Infections Program, which allows for extra surveillance and research of HAIs.

Prevention efforts to reduce specific HAIs:
- Surgical site infections
- Multidrug-resistant infections (MRSA, C. difficile, CRE, and others)
- Long-term care facilities
- Hand hygiene
- Antibiotic stewardship
- Healthcare personnel influenza vaccination

This report is based on 2013 data, published January 2015.
Collaboration

Coming together is a beginning; keeping together is progress; working together is success.

*Henry Ford*
• HQI was formed as a 501(c)(3) in 2013

• It is a collaboration of the:
  • California Hospital Association (CHA),
  • Hospital Association of Southern California (HASC),
  • Hospital Association of San Diego & Imperial Counties (HASDIC), and
  • Hospital Council of Northern & Central California (HCNCC)
Summary

HQI is a not-for-profit, non-regulatory, non-accrediting, non-governmental body, created by hospitals to support hospitals in their improvement of safer care, better care, better health, and lower costs.
HQI Hospital Acquired Infection (HAI) Workgroup

Convened in 2013

Workgroup chartered to study and support evidence-based improvements in healthcare associated infections (related to clinical care and delivery issues) in hospitals

Multidisciplinary:
- Senior Infection Prevention Professionals
- ID Physicians/Hospital Epidemiologists
- CA APIC Coordinating Council (CACC) Leadership
- CA DPH Leadership
- HSAG – CA QIO
HQI HAI Workgroup Activities

Prioritized Areas of Focus:

- Hand Hygiene
- Immunization
- Antimicrobial Stewardship

- Other:
  - Advocacy
  - Education
  - Media/public relations
Hand Hygiene (HH)

HH Workgroup:
Alicia Munoz  Barbara Goss-Bottorff, RN  Shilla Patel, DO
Deb Johnson, RN  Annemarie Flood, RN  Rekha Murthy, MD

2013: Statewide survey (CHA hospitals and CACC members)
- Identified barriers to progress on hand hygiene compliance and monitoring
- Majority of respondents expressed interest in a CA hand hygiene campaign
- In response, education and tools provided to all requesting CA hospitals during 2014 Infection Prevention Week

2014: Direct Observation QI Project initiated with industry partner
- Design and implement pilot project to test mobile app usability (in process)
- Intention: Reduce the burden of HH surveillance by getting real-time data into the hands of the users for feedback and improvement
Hand Hygiene Monitoring: A QI Project Evaluating the Usability of a Wireless App and Web Based Software for Data Reporting

Purpose: Provide opportunity for IPs to
- Test a mobile device before investment
- Standardize and simplify training
- Provide objective data
- Decrease data reporting burden
- Build a feedback (and accountability) system

Project Overview:
- 90 day evaluation period completed
- 43 Hospitals sought participation - 18 met participation criteria
- Mobile Technology-Clinical Communication availability was the biggest constraint (iPad, iPhone, or Android)
- Report to be presented at HQI Annual Meeting
GOJO SMARTLINK™ Activity Monitoring System

Main Menu
- Record Observations: Monitor hygiene opportunities
- Email Observations: Email current and recent data
- Change Settings: Edit account settings
- View Help: Learn more about iScrub
- About: Contact info and contributors

Location: SURGICAL INTENSIVE CARE UNIT: 3 UNSENT OBS.
- Physician
- Nurse
- Consultant
- XRay Tech
- Phys Ther
- Other

Job Role: Done

Hospital Quality Institute

DMAIC: The Six Sigma Method
Define → Measure → Analyze → Improve → Control
Users feedback:
• Facilitated accountability, allowing peer to peer follow up
• Real time actionable data available for reporting
• Customized notes for observation comments allowed drill down and targeted education
• Medical Staff very satisfied

Limitations industry partner learned:
• Site specific processes and definitions
• Lack of standardized recording method of discrete HH or PPE episode observations (limited consistency of data retrieval)
Feedback on

Q2 Overall, how satisfied are you with SMARTLINK app for collecting hand hygiene observations?

Answered: 46    Skipped: 2

- Very satisfied
- Somewhat satisfied
- Neither satisfied nor satisfied
- Somewhat dissatisfied
- Very dissatisfied
Influenza Vaccination: Healthcare Providers

Influenza Workgroup:
Alicia Munoz            Karen Anderson, RN            Deb Johnson, RN
Shilla Patel, DO        Barbara Goss-Bottorff, RN   Rekha Murthy, MD

2014: Statewide survey on influenza vaccination policies and practices (CHA hospitals and CACC members)

- Low response rate lacked power to generalize results
- Signals within the data:
  - Higher influenza vaccination rates associated with a masking policy
  - Lower vaccination rates associated with lack of a policy and senior leader engagement
  - Barriers to achieving higher vaccination rates included lack of: executive support, monitoring/feedback, and consequences

- Identified the need for a comprehensive and reliable database on vaccination policies and practices within the state
Antimicrobial Stewardship (AS)

SB 1311 requires a process of AS in CA hospitals
CDPH AFL outlined 4 specific requirements

- HQI HAI Workgroup aims:
  - Assist hospitals to meet this mandate
  - Participate with CDPH HAI-AC AS Subcommittee to help disseminate best practices to hospitals and represent hospital perspective
  - Support efforts in patient and community education
International Infection Prevention Week Activities

• 2014 – Webinar on hand hygiene for IPs, partnership with GOJO (posters and Purell samples provided), shared HH survey results

• 2015 – Webinar on current issues in Infection Prevention directed to C-suite (and posters and Purell made available) aired on 10/20/15
  • Intended for spotlight on IP activities and discussion with hospital leadership
  • Q&A format - Topics:
    • The increasing demands of infection surveillance and prevention and impact on or hospitals (resources, education, compliance)
    • Transparency
    • Evolving and emerging threats
    • Antimicrobial Stewardship Programs
    • CA hospital performance good but *C. difficile* is increasing
    • Burden of data collection on the infection prevention team
Remember Ebola?
Advocacy

- **Ebola**
  - CHA Webinar on Ebola 10/24/2015
  - Oct ‘14- Apr ‘15 – contributed to responses to rapidly evolving ad changing regulatory guidance on EVD (CDPH, Cal OSHA)
  - 11/18/2014 Senate Health Committee Hearing Testimony on Ebola

- **Antimicrobial Stewardship**
  - Participated in responses to new legislation SB 1311

- **Other legislation**
  - Provided evidence against proposed new legislation re: MRSA in healthcare workers (SB2616)
The past year in reflection: Infectious Diseases

- Over 100 cases of measles in U.S., most from Disneyland outbreak
- Influenza: I don’t believe in vaccinations for my kids
- Human influenza
- Ebola
- CRE

BusinessWeek: War against the microbes
How drug makers are fighting back against a global resurgence of infectious disease.
California Strengthens Antimicrobial Stewardship Mandate for Hospitals

March 1, 2015, AJHP News

Kate Traynor

BETHTESDA, MD 13 Feb 2015—A California law that goes summer strengthens the state’s previous requirement for hospitals to practice antimicrobial stewardship.

Starting July 1, acute care hospitals in California must participate in antimicrobial stewardship programs that follow federal society guidelines and include a process to evaluate the antimicrobials. The law specifies that the stewardship team is multidisciplinary and include “at least one physician or pharmacist” expertise and training in antimicrobial stewardship.

California is the only state that has enacted legislation in antimicrobial stewardship for hospitals.

The law, which was passed last September, supplement 2006 that mandates stewardship programs for California hospitals and requires the state health department to ensure compliance.

Late last week California Governor Jerry Brown signed the country’s most stringent law regulating the use of antibiotics in livestock—one that goes beyond federal regulations—banning the use of antibiotics used in human medicine and those used solely for growth promotion. The new law, Senate Bill 27, which also has oversight and reporting components, takes effect beginning January 1, 2018.

“The science is clear that the overuse of antibiotics in livestock has contributed to the spread of antibiotic resistance and the undermining of decades of life-saving advances in medicine,” Brown said in a statement. The bill will:

...prohibit the administration of medically important antimicrobial drugs, as defined, to livestock unless ordered by a licensed veterinarian through a prescription or veterinary feed ... and would prohibit the administration of a medically important

More About Antibiotics

- Antibiotic-Resistant Bacteria is Blowing in the Wind
- Will New Antibiotic Regulations Actually Do Anything?
CA Leading the Way: Immunization


California's new vaccination law serves as a national model for children's health, Stanford scholars say

Stanford legal experts say that California's controversial new vaccination law may serve as a model for other states at a time when vaccination rates are low by historical standards.

BY CLIFTON B. PARKER

California's tough new vaccination law is legally sound and will serve as a model for how to keep children healthy, Stanford professors say.

On June 25, California Gov. Jerry Brown approved a new state law (SB277) that substantially narrows exceptions to school-entry vaccination mandates. In doing so, California becomes the third state (Mississippi and West Virginia are the others).
Summary

- Workgroup identified 3 specific topics for targeted projects
- 2014-2015 marked by several infectious diseases/infection control issues that diverted workgroup attention
- Emerging issues in CA (Ebola, measles, CRE, etc) resulted in need for collaboration, dialogue, advocacy and education – ongoing
- Collaboration with other organizations and leveraging resources and expertise across CA (CDPH, CACC, IDAC, CACC, etc) will be critical to address present and future ID challenges
• Continue surveillance and implementation of best practices to reduce CAUTI, CLABSI, *C. difficile*, VAP, MRSA, and MDRO
• Expand and deepen areas of focus in Hand Hygiene, Immunization and Antimicrobial Stewardship
• Recognize and celebrate CA Infection Prevention successes
• Partner with hospitals to engage and involve patients and communities
• Continue to support opportunities for advocacy and education
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