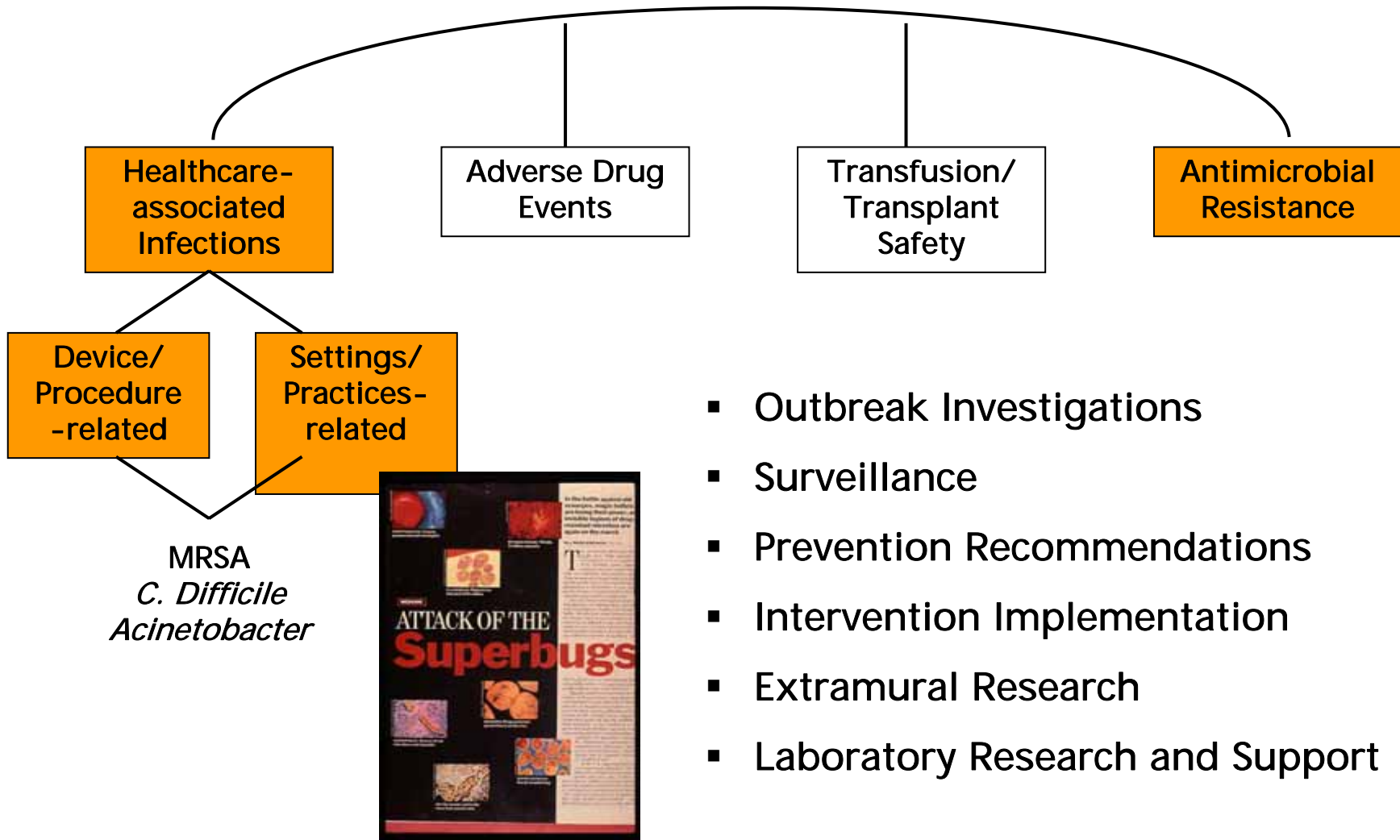


CDC is working to improve patient safety

Patient Safety



- Outbreak Investigations
- Surveillance
- Prevention Recommendations
- Intervention Implementation
- Extramural Research
- Laboratory Research and Support

MRSA infections are a patient safety challenge, but we are beginning to see local successes

ORIGINAL CONTRIBUTION

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Invasive Methicillin-Resistant *Staphylococcus aureus* Infections in the United States

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surveillance (ABCs) MRSA

Investigators

AFTER BEING INITIALLY reported among injecting drug users in Detroit in 1981¹ and then associated with the deaths of 4 children in Minnesota and North Dakota in 1997,² community-associated methicillin-resistant *Staphylococcus aureus* (MRSA) has become the most frequent cause of skin and soft tissue infections presenting to emergency departments in the United States.³ Although community outbreaks of MRSA in diverse populations, including American Indian and Alaska Natives,⁴ sports

Context As the epidemiology of infections with methicillin-resistant *Staphylococcus aureus* (MRSA) changes, accurate information on the scope and magnitude of MRSA infections in the US population is needed.

Objectives To describe the incidence and distribution of invasive MRSA disease in 9 US communities and to estimate the burden of invasive MRSA infections in the United States in 2005.

Design and Setting Active, population-based surveillance for invasive MRSA in 9 sites participating in the Active Bacterial Core surveillance (ABCs)/Emerging Infections Program Network from July 2004 through December 2005. Reports of MRSA were investigated and classified as either health care-associated (either hospital-onset or community-onset) or community-associated (patients without established health care risk factors for MRSA).

Main Outcome Measures Incidence rates and estimated number of invasive MRSA infections and in-hospital deaths among patients with MRSA in the United States in 2005; interval estimates of incidence including 1 site that appeared to be an outlier with the highest incidence; molecular characterization of infecting strains.

Results There were 8987 observed cases of invasive MRSA reported during the surveillance period. Most MRSA infections were health care-associated: 5250 (58.4%) were community-onset infections, 2389 (26.6%) were hospital-onset infections; 1234 (13.7%) were community-associated infections, and 114 (1.2%) could not be classified. In 2005, the standardized incidence rate of invasive MRSA was 31.8 per 100 000 (interval estimate, 24.4-35.2). Incidence rates were highest among persons 65 years and older (127.7 per 100 000; interval estimate, 92.6-156.9), blacks (66.5 per 100 000; interval estimate, 43.5-63.1), and males (37.5 per 100 000; interval estimate, 26.8-39.5). There were 1598 in-hospital deaths among patients with MRSA infection during the surveillance period. In 2005, the standardized mortality rate was 6.3 per 100 000 (interval estimate, 3.3-7.5). Molecular testing identified strains historically associated with community-associated disease outbreaks: recovered from cultures in both hospital-onset and community-onset health care-associated infections in all surveillance areas.

Conclusions Invasive MRSA infection affects certain populations disproportionately. It is a major public health problem primarily related to health care but no longer confined to intensive care units, acute care hospitals, or any health care institution.

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See also p 1803 and Patient Page.

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~ 500,000 persons in the United States hospitalized with *Staph* each year

Invasive MRSA infections alone are responsible for approximately 94,000 infections and 19,000 deaths each year.

Approximately 85% of these serious MRSA infections are healthcare associated.

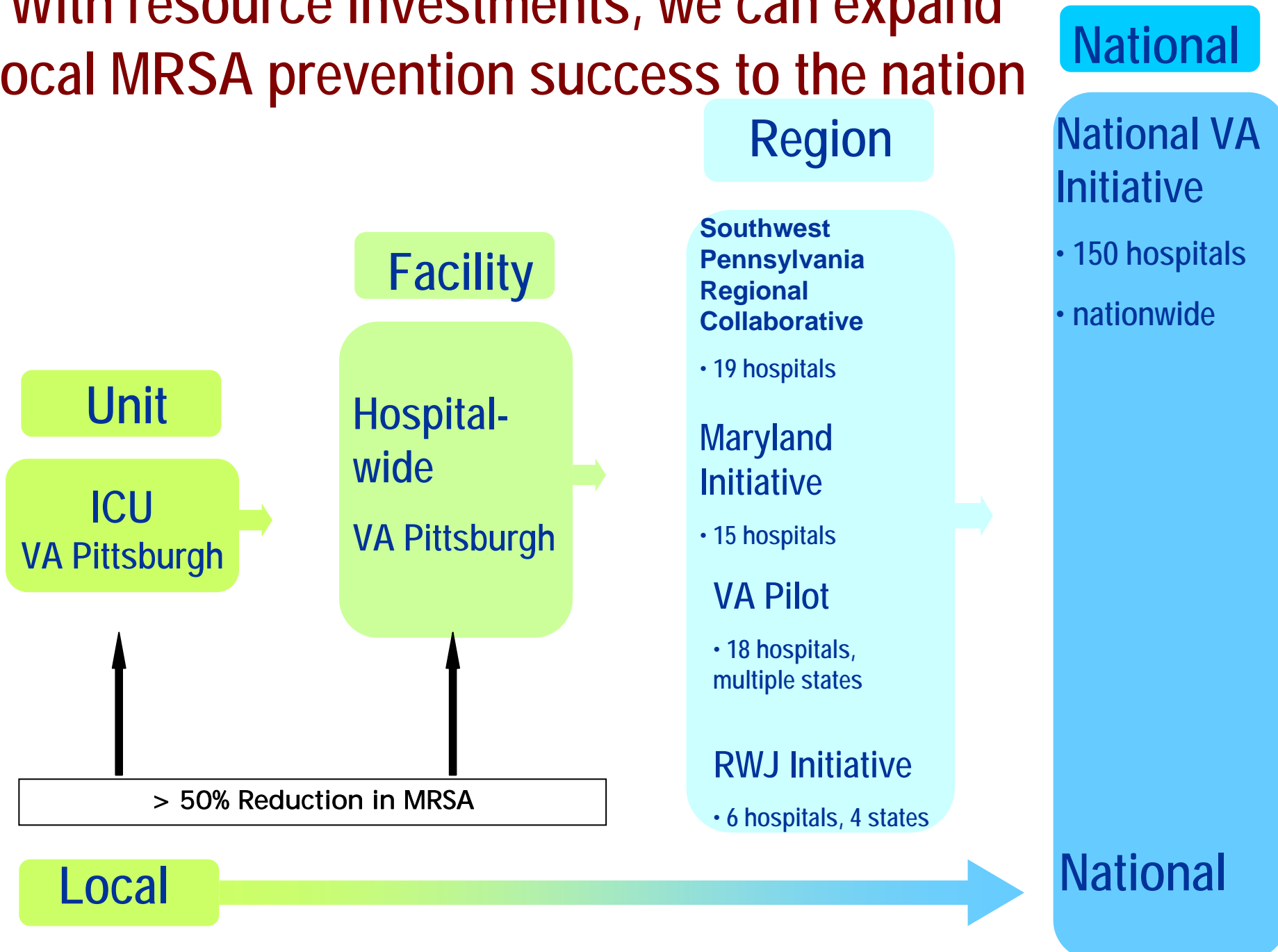
Estimated U.S. costs for all *Staph* infections, including MRSA, have increased from \$8.7 billion in 1998 to \$14.5 billion in 2004.

Within the Medicare program alone, healthcare charges for *Staph* bloodstream infections exceeded \$2.5 billion in 2005.

Through CDC-supported efforts in Pennsylvania, local hospitals have successfully reduced bloodstream and MRSA infections as much as 70% by fully implementing CDC prevention recommendations.

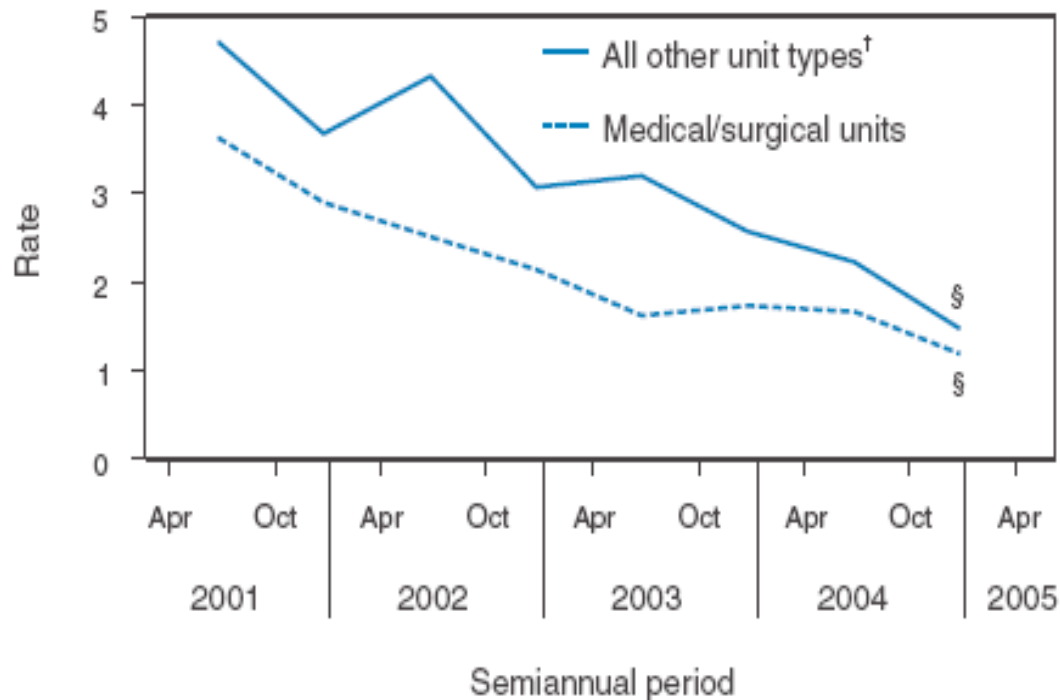
Replicating these efforts nationally could dramatically reduce *Staph*-related deaths and complications and yield estimated short-term (<3 years) cost savings to the Medicare program of up to \$1 billion.

With resource investments, we can expand local MRSA prevention success to the nation



Adherence to CDC Prevention Guidelines Has Impact: Southwestern Pennsylvania, 39 hospitals (66 ICUs)*

FIGURE. Central line–associated bloodstream infection rate* in 66 intensive care units (ICUs), by ICU type and semiannual period — southwestern Pennsylvania, April 2001–March 2005

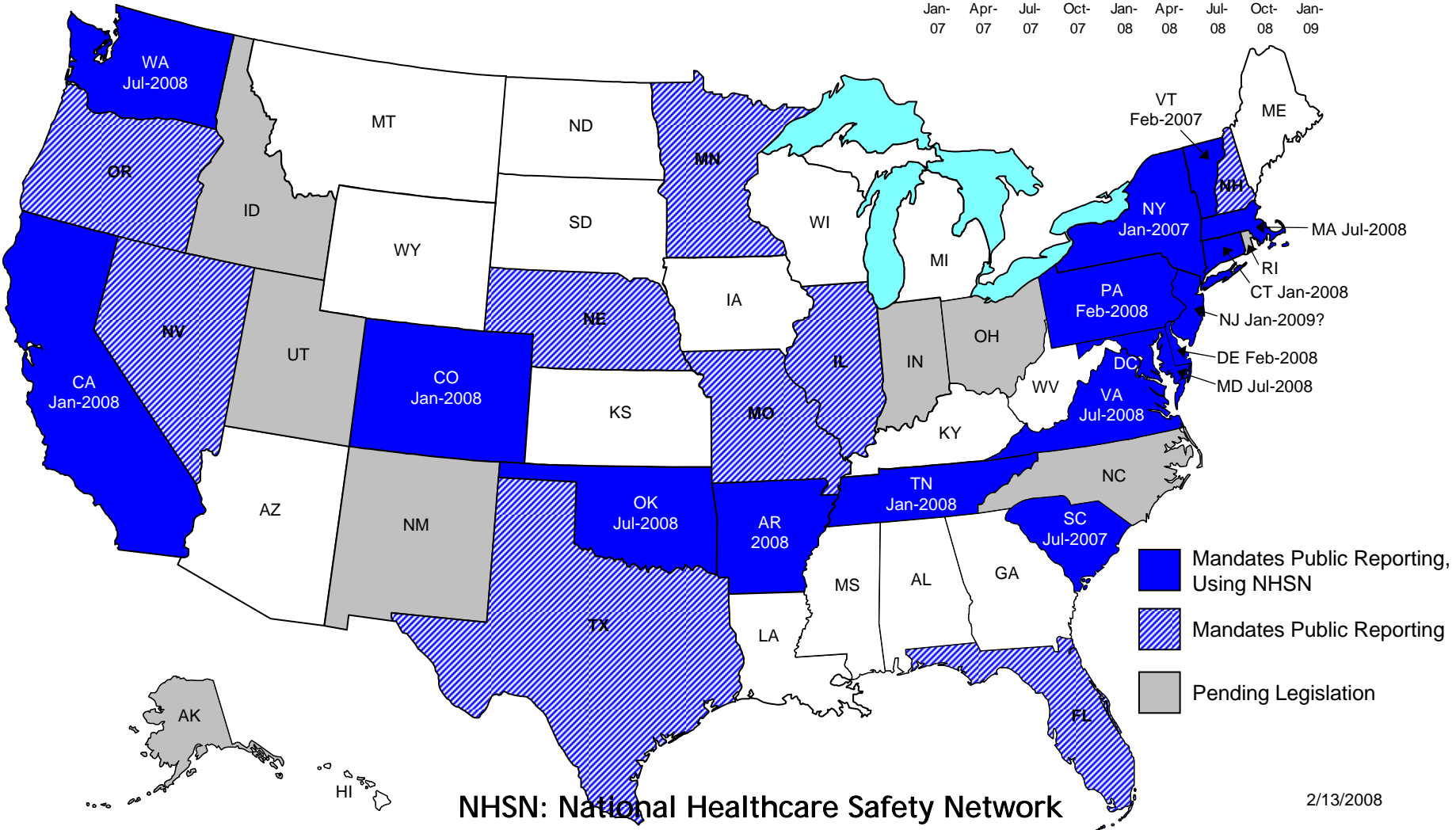
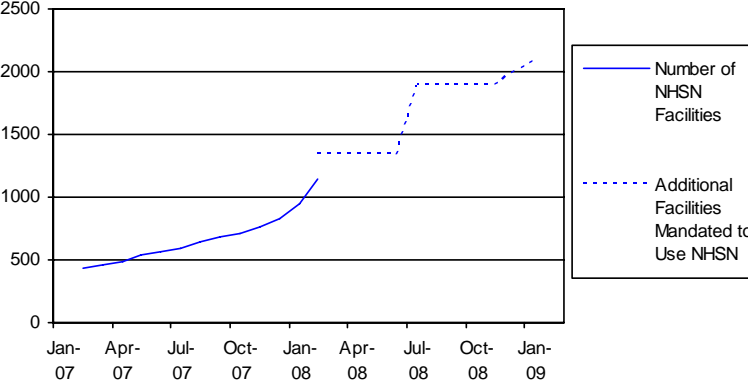


* Pooled mean rate per 1,000 central line days.

[†] Includes cardiothoracic, coronary, surgical, neurosurgical, trauma, medical, burn, and pediatric ICUs.

[§] $p < 0.001$.

States using NHSN for public reporting of healthcare-associated infections as of 02/08:
with resource investments, expanding opportunities for prevention



Changing World of Patient Safety

CA-MRSA

Multi-drug
resistant gram
negative

C. difficile

Increased use of
ambulatory care
settings

Organ transplants

Adverse drug events

Blood safety

Public reporting

Antimicrobial resistance



Emerging threats to patient safety

Multiple outbreaks of healthcare-associated infections, including hepatitis B and C viruses in outpatient settings

- associated with unsafe injections
- preventable with basic infection control practices

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50 CENTS ONE DOLLAR NEVADA'S LARGEST NEWSPAPER *** MARCH 14, 2008

Lawyers: 100 fear infection

Health official: Data still being investigated

By ANNETTE WELLS and BRIAN KAYNES
REVIEW JOURNAL

More than 100 former patients of the Endoscopy Center of Southern Nevada believe they contracted potentially

PUBLIC HEALTH CRISIS

tics, according to several Las Vegas trial lawyers. "It's stunning," said Robert Eglet, who represents 51 clinic patients who have

coming back higher than we expected." Ed Bernstein said he has at least 20 clients who tested positive for one of the blood-

sents about 25 such clients. Most of the positive tests were for hepatitis C.

The attorneys expect to see more positives in coming weeks as blood test results come back for the thousands of patients who had proce-

officials say, at least six people contracted hepatitis C because of unsafe medical practices. Late Thursday, a source in the state Health and Human Services Division said it will be announced today that

Pillars for the Elimination of Healthcare-Associated Infections

- **Implement best practices and full adherence to recommendations**
- **Healthcare data for local and national action:**
 - Recognize excellence
 - Communicate with consumers
- **Identify and respond to emerging problems**
- **Improve science for prevention through research**

