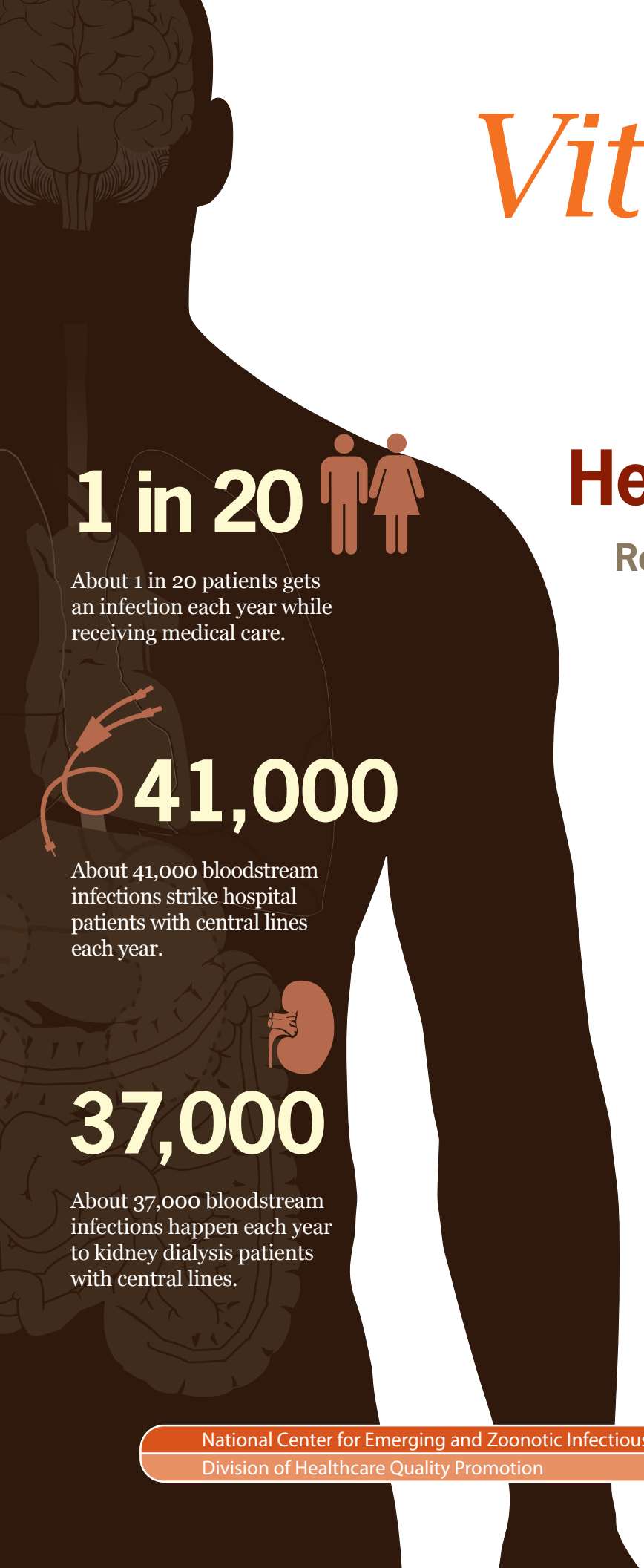
CDC Vitalsigns™
March 2011

Making Health Care Safer

Reducing bloodstream infections



1 in 20

About 1 in 20 patients gets an infection each year while receiving medical care.

41,000

About 41,000 bloodstream infections strike hospital patients with central lines each year.

37,000

About 37,000 bloodstream infections happen each year to kidney dialysis patients with central lines.

A central line is a tube that a doctor usually places in a large vein of a patient's neck or chest to give important medical treatment. When not put in correctly or kept clean, central lines can become a freeway for germs to enter the body and cause serious bloodstream infections. These infections can be deadly. Of patients who get a bloodstream infection from having a central line, up to 1 in 4 die. Bloodstream infections in patients with central lines are largely preventable when healthcare providers use CDC-recommended infection control steps. Medical professionals have reduced these infections in hospital intensive care unit (ICU) patients by 58% since 2001. Even so, many still occur in ICUs, in other parts of hospitals, and in outpatient care locations. In 2008, about 37,000 bloodstream infections occurred in hemodialysis* outpatients with central lines.

*Use of a machine to clean or filter the blood when kidneys no longer work.

Learn what you can do to reduce central line bloodstream infections.

→ See page 4

Want to learn more? Visit

www http://www.cdc.gov/vitalsigns

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

Bloodstream Infections in Patients with Central Lines

Problem

A preventable and costly threat to patient safety.

1. Progress has been made in hospitals, but more needs to be done to protect patients from infection.

◇ New data show that 58% fewer bloodstream infections occurred in hospital ICU patients with central lines in 2009 than in 2001. In 2009, about 18,000 bloodstream infections occurred in ICU patients with central lines. About 23,000 more happened to patients who got treatment in other areas of the hospital.

◇ Overall, the decrease in infections saved up to 27,000 lives and is associated with $1.8B in excess medical costs. In 2009 alone, reducing infections saved about 3,000-6,000 lives and about $414 million in extra medical costs compared with 2001.

◇ Bloodstream infections from staph (*Staphylococcus aureus*) in ICU patients with central lines were reduced by 73%, more than from any other germ.

2. Many bloodstream infections occur in people who receive outpatient hemodialysis treatment through central lines.

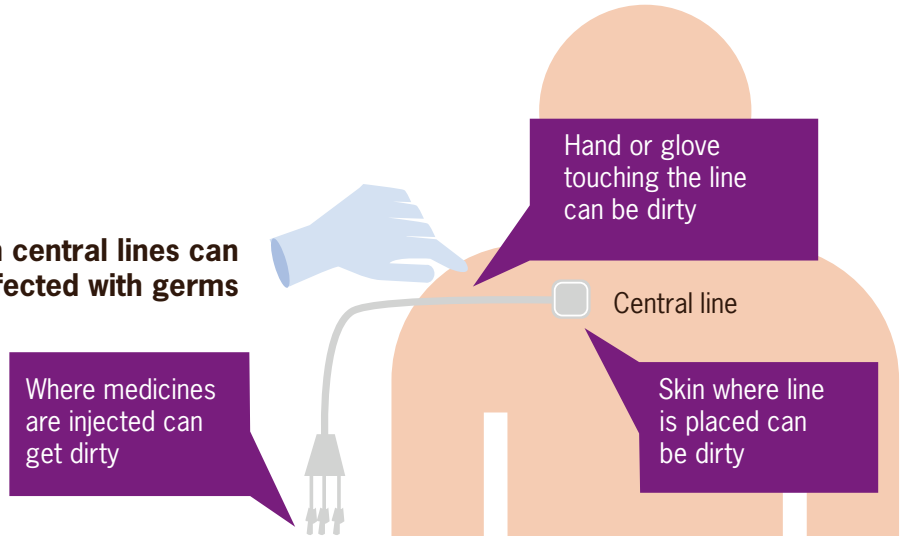
◇ About 350,000 people receive life-saving hemodialysis treatment at any given time. About 8 in 10 of these patients start treatment through a central line.

◇ Infections are one of the leading causes of hospitalization and death for patients on hemodialysis.

◇ About 37,000 bloodstream infections occurred in 2008 in hemodialysis patients with central lines.

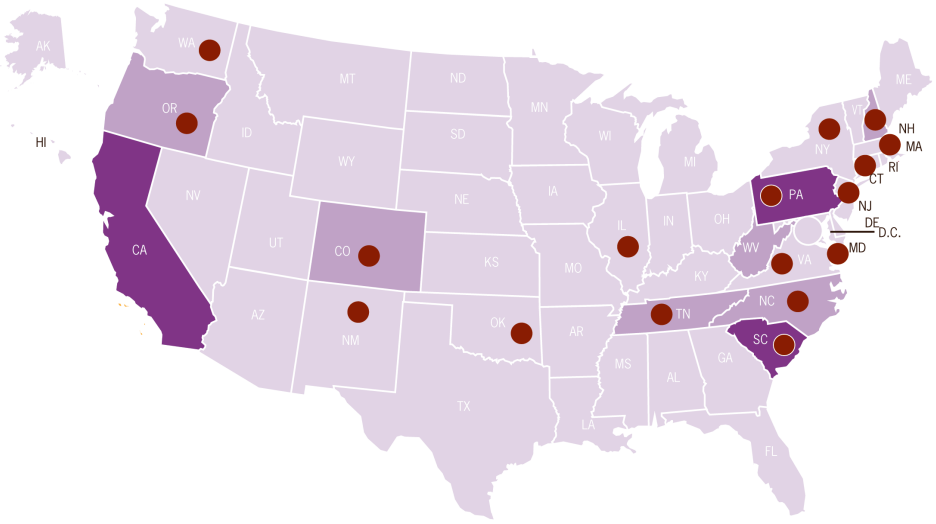
◇ A hemodialysis patient is 100 times more likely to get a bloodstream infection from MRSA than other people. MRSA is a type of staph that is resistant to certain antibiotics.

How patients with central lines can get infected with germs



US State Info

States where hospitals are tracking central line bloodstream infections using CDC's National Healthcare Safety Network



ICU only

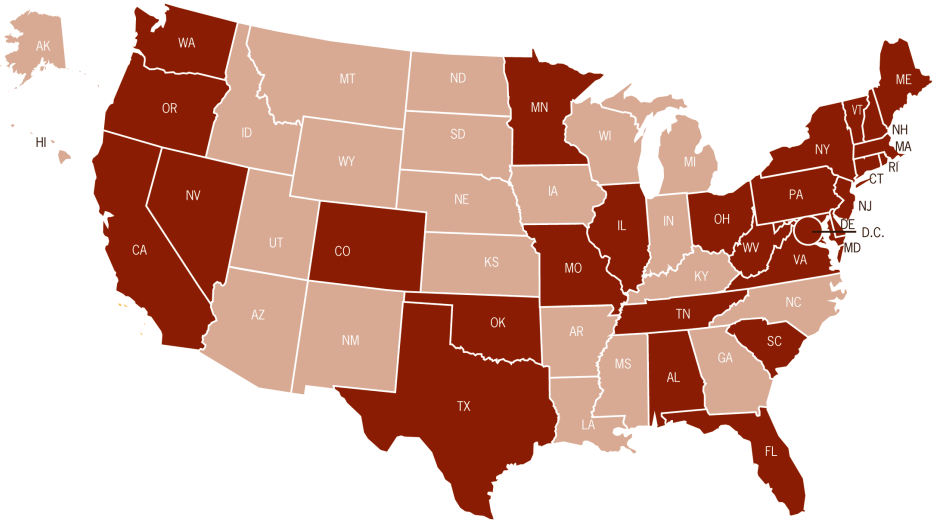
ICU and ward – Ward tracking less than or equal to 20%

ICU and ward – Ward tracking greater than or equal to 70%

State validating healthcare-associated infection data as of 2010

Validation means double checking data to ensure accurate infection tracking.

States required to publicly report some healthcare-associated infections



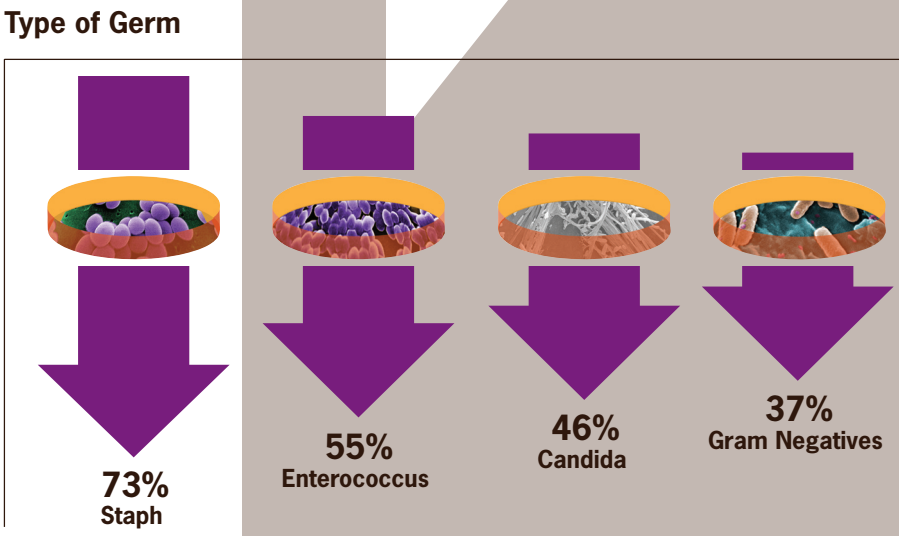
(Both maps as of 2011)

YES

NO

Decrease in bloodstream infections in patients with central lines, by germ

SOURCE: CDC's National Healthcare Safety Network, 2010



What Can Be Done

US Government can

◇ Develop and promote further guidelines and tools that increase widespread adoption of best practices to prevent infections.

◇ Engage partners to promote prevention.

◇ Apply the success in reducing central line bloodstream infections to other types of infections in health care. Identify which actions and germs cause the most problems and how to prevent them.

◇ Promote research of new methods to prevent bloodstream infections. Track and report progress toward reducing infections.

State governments can

◇ Join, start, or expand programs to keep bloodstream infections from happening in patients with central lines.

◇ Encourage facilities to join CDC's infection tracking system and validate their data (National Healthcare Safety Network, http://www.cdc.gov/NHSN).

◇ Join **On the CUSP: Stop BSI** program to develop a prevention roadmap and share best practices (http://www.onthecuspstophai.org).

◇ Build partnerships with and give technical support to hospitals, dialysis centers, and other medical care locations.

Hospitals, dialysis centers, and other medical care locations can

◇ Use CDC-recommended infection control guidelines every time a central line is put in and for central line care.

◇ Use central lines for hemodialysis only when other options are not available.

◇ Use data for action. Track infection rates and germ types with CDC's National Healthcare Safety Network (NHSN) to learn where and why infections are happening, target actions to stop them, and track progress.

◇ Recognize staff members or units that work hard to prevent central line infections.

◇ Join state and local health department prevention programs, quality improvement projects, and state-based partnerships to foster best practices.

Doctors and nurses can

◇ Use CDC-recommended infection control steps every time a central line is put in and used.

◇ Remove central lines as soon as they are no longer needed.

◇ Be sure that all people taking care of the patient follow the right steps.

◇ Speak up if someone is not following the right steps.

Patients and caregivers can

◇ Ask doctors and nurses to explain why the central line is needed, how long it will be in place, and which infection prevention methods they will use.

◇ Make sure that all healthcare providers clean their hands with soap and water or alcohol-based hand rub before and after caring for the patient.

◇ Inform a nurse or doctor if the area around the central line is sore or red, or if the bandage falls off or becomes wet or dirty.

www http://www.cdc.gov/vitalsigns

www http://www.cdc.gov/mmwr

CS220503B

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Publication date: 03/01/2011