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Fuel for the fire: MRSA prevalence study may spark state infection control laws

APIC: Findings are a call to action for hospitals

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An unprecedented prevalence study that revealed an epidemic of methicillin-resistant *Staphylococcus aureus* (MRSA) in the nation’s hospitals will likely accelerate fires that already were smoldering in many state legislatures. Expect the shocking findings that MRSA prevalence is eight to 11 times higher than previous estimates to be presented as “Exhibit A” in consumer and patient safety demands for state laws specifically targeting MRSA detection and prevention in hospitals.

Commissioned by the research branch of the Association for Professionals in Infection Control and Epidemiology (APIC), the MRSA study was unveiled recently in San Jose at the annual APIC conference. Even those who expected the worst may have underestimated these findings, as a one-day “snapshot” study conducted last year found that 46 out of every 1,000 patients in participating facilities of all stripes and sizes were colonized or infected with MRSA. (See study highlights, p. 87.)

The findings drew plenty reaction from the press, patient safety advocates, consumer groups and even some ICPs who openly questioned whether such troubling data may spur state laws mandating infection control measures against MRSA. Many state legislatures are currently mulling MRSA legislation, much of it tied to recommendations by the Society for Healthcare Epidemiology of America to implement active surveillance cultures (ASC) to detect the patients with MRSA and place them in contact isolation to prevent transmission to others.¹ However, there is considerable controversy about the practice within epidemiological circles, and even proponents of ASC have come out against mandating clinical practice through state laws. (See *Hospital Infection Control*, July 2007.)

‘Why did we go into infection control?’

Still, the suggestion that a line of scientific inquiry should not be pursued out of fear of unintended consequences was troubling to the

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veteran epidemiologist who designed and administered the MRSA prevalence survey for APIC. Now a private consultant, **William Jarvis, MD**, formerly was a leading investigator of hospital outbreaks for the Centers for Disease Control and Prevention. "I must admit I was somewhat dumb-founded with that reaction," he tells *Hospital Infection Control*. "Why did we go into infection control? I don't know about anybody else but I went into it to prevent these infections from occurring, not to count them and see them keep going up. [But] one of the disturbing things with the mandatory reporting legislation and virtually all other infection-associated legislation is that

none of them demand or require any increase in infection control personnel. They are unfunded mandates and if you do that nothing is going to change."

But change could still come in the form of the many positive signs afoot for MRSA prevention, including the massive reduction and eradication effort that has been undertaken by the Veterans Affairs hospitals and other hospital chains. "I am hopeful that this [study] will lead to administrators recognizing that this is a problem they really need to address and they need to provide the resources to do it," Jarvis says. For their part, ICPs and health care epidemiologists must be passionate in insisting endemic levels of MRSA are no longer acceptable, he argues. "We should all be furious unless we see those rates going down," Jarvis says. "If the rates are not going down, you need to do more. I don't care where you are or what kind of facility you are in, we are in infection prevention."

'MRSA not only bug in town'

Other speakers at APIC defended the study while emphasizing that it should not be used to pass legislation aimed at a single bug. "As scientists we should never be opposed to advancing scientific knowledge," **Tammy Lundstrom, MD, JD**, medical director for epidemiology at the Detroit Medical Center, told APIC attendees. "This is a first, one-of-a-kind study. I feel very strongly that there is so much that is yet unknown about MRSA that we need a lot of research. I don't think we should ever be opposed to increasing knowledge, but certainly we are opposed to legislating in one approach that is a portion of a bigger program."

Indeed, the educational challenge ICPs must face after the highly publicized release of the findings is to address heightened concerns about MRSA among the public, patients, press, and staff without letting a host of other infection control concerns get swept aside in process. "MRSA isn't the only bug in town for a lot of our facilities," Lundstrom said. "If you look at the cost of these multidrug-resistant organisms [MDROs] — whether you are talking about MRSA, VRE, or extended-spectrum beta-lactamase gram-negative organisms — there is a higher cost for caring for patients, a longer length of stay and, in many cases, higher attributable mortality than with sensitive organisms. But we also have to be concerned about sensitive organisms, because if a patient dies from [drug-susceptible *S. aureus*], it is no less tragic than if a patient dies from MRSA."

Echoing Jarvis sentiments, **Denise Graham**,

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Editorial Questions

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Got MRSA? 'Yes we do,' ICPs answer in all 50 states

All sizes, types of facilities participate

Key points and findings from the Association for Professionals in Infection Control and Epidemiology that are from its national prevalence survey of methicillin-resistant *Staphylococcus aureus* (MRSA) are summarized as follows:

Summary: The study found an MRSA rate of 46.3 per 1,000 inpatients in the United States, (including infection or colonization) is eight to 11 times higher than previous estimates made with different hospital samples and using incidence rather than prevalence data. The survey data are more general to all U.S. health care facilities, since the sample included a broad range of health care facilities from every state. The sample is large, with the 1,237 responding facilities representing approximately 21% of all U.S. health care facilities and 28.5% of the average daily census.

Participants and Facilities: Respondents were recruited from APIC member facilities, and APIC members were asked to recruit non-APIC members to participate. The survey was made available through a secure website and via hard copy. All participants were asked to complete the survey on one day during the period of Oct. 1-Nov. 10, 2006. On the one day chosen during this period, each participant was asked to identify all patients known to be colonized or infected with MRSA using existing microbiology, medical, and infection control records. No additional patient culturing was requested. The 1,237 responding facilities were located in every state. These facilities ranged in size from eight to 1,668 licensed beds (avg. = 256). These facilities had a total of 187,058 inpatients (avg. = 69) during the survey period. Respondents included: acute care facilities, rehabilitative care, long-term care facilities, women's facilities, long-term acute care facilities, children's hospitals, and Veteran's Administration (VA) hospitals. Of these facilities, 64% were urban and 36% were rural.

Key findings

MRSA patients and rate: The total number of patients with MRSA colonization/infection was 8,654. The overall MRSA rate (infection and colonization, HA-MRSA and CA-MRSA) was 46.3 per

1,000 inpatients. For states with reporting from > five facilities, the MRSA rate ranged from 16-91 per 1,000 inpatients. The clinical culture-positive MRSA rate (i.e., including only infections) ranged from 16-48 (avg. = 34) per 1,000 inpatients.

From the detailed data provided on 7,944 patients with MRSA:

- 54% were male, 46% were female;
- 67% were on the medical service;
- 81% of patients were detected by clinical cultures
- 19% were detected by active surveillance cultures;
- 77% were detected <48 hours within admission;
- 23% were detected >48 hours within admission*;
- 37% had skin and soft-tissue infections only (most commonly seen with CA-MRSA);
- 63% had infections at sites other than skin or soft tissue (e.g., blood, pneumonia, urinary tract);
- <30% of isolates susceptible to clindamycin and <20% susceptible to levofloxacin.

(*Many papers in the literature divide HA-MRSA from CA-MRSA using this artificial cutoff of hours after admission, ignoring the fact that many patients are repeatedly admitted and thus become colonized with MRSA at one admission and then are detected with infection at a subsequent admission. Our data (see above) on site of infection and antimicrobial susceptibility results suggest that the majority of MRSA isolates reported were from HA-MRSA rather than CA-MRSA).

Surveillance activities: The mean number of infection control professionals (ICPs) per facility was 1.6. Almost all used CDC definitions of HAI; those in long-term care facilities most frequently used the McGeer criteria for infection. Approximately 45% conducted hospitalwide surveillance for all HAIs and 55% conducted focused surveillance (ICU patients, surgical patients or high-risk nursery patients). Of those conducting surveillance, 42% conducted routine surveillance for all HAIs, 62% conducted blood-stream infection surveillance, 59% conducted surveillance for ventilator-associated pneumonia or surgical site infections, and 31% conducted surveillance for catheter-associated urinary tract infections. Approximately 28% reported performing active surveillance cultures (ASC) for MRSA (to detect patient colonization). Of those performing ASC, 42% performed ASC on transfers from long-term care facilities, 34% on transfers from other health care facilities, 20% on patients with repeated admissions, 18% on selected ward patients, 16% on ICU patients, and 14% on dialysis patients. ■

vice president of public policy at APIC, told conference attendees to use the prevalence findings as "a call to action for health care administrators. We want very much for them to put the necessary resources in place to help you — not just with

MRSA but with other [infections]. . . . This has been a bit emotional in the newspapers, but the study has been done. Do we want newspapers to pick up and interpret the wrong message or do we want to help shape that message? You're the

professionals and we should be helping you shape that message.”

The bug in the smoke-filled room

The message will be critical as an increasing number of state legislatures put some form of MRSA law on their agenda for discussion. Illinois appears to be close to passing such a law, which was “on the governor’s desk” as this issue went to press, she noted. Several other states are at looking at MRSA legislation, which is a hot topic at national legislative meetings where state lawmakers rub shoulders and share ideas that may endear them to constituents back home. “If you are wondering why this is taking off, it is kind of like the public reporting [of hospital infection rates] initiative,” Graham said. “Consumers get on it, the emotional stories are out there and it quickly moves across the country.”

Indeed, there was already so much interest among state legislatures regarding MRSA laws that an increase in bill proposals was anticipated by trend trackers even before the prevalence study was completed. “We have heard from a lot of states that did not introduce legislation officially [this year],” she said. “So, next year you are going to see an awful lot more. Whether we provided our study or not wasn’t really going to matter. States are looking at it because they are hearing from their constituencies.”

They will hear from them a lot more if the Consumers Union — publishers of *Consumer Reports* — has anything to do it. The group has launched a letter writing campaign to state governors urging them to implement ASC and other measures against MRSA in their state hospitals. **(See related story, p. 90.)** As soon as the APIC MRSA prevalence study was released, Consumers Union issued a release calling for “hospitals to take more aggressive steps to protect patients from MRSA infections in light of a new study showing that the superbug is much more common in hospitals than previous estimates had indicated. The Committee to Reduce Infection Deaths (www.hospitalinfection.org) used the findings to criticize the Centers for Disease Control and Prevention, charging in a press release that the findings “confirm [a] CDC cover-up and the urgent need for cleanliness standards and MRSA screening in U.S. hospitals.”

While praising the findings of the APIC study, a leading CDC epidemiologist on MRSA defends the agency’s infection prevention approach to

MRSA and other MDROs and says one study will not change them.

“I don’t think it changes anything in the way we are looking at [the problem of MRSA],” says **John Jernigan, MD**, a medical epidemiologist in the CDC division of healthcare quality promotion. “It is consistent with many previous estimates that suggest that there is way too much MRSA in U.S. hospitals. We have been working very actively in putting prevention programs that are effective in reducing MRSA rates. We actually applaud the study. It is another piece of evidence that suggests that MRSA continues to be an enormous problem in health care facilities.”

Jernigan defended the approach outlined in the 2006 MDRO guidelines. Those CDC guidelines use two-tier approach, with hospitals going to more aggressive measures such as ASC if rates are not going down.² “I don’t think there are any plans to change the MDRO guidelines based on this study,” he tells *HIC*. “If hospitals are able to reduce or even eliminate MRSA with recommendations that are contained in Tier 1, then I’m not sure what the point would be in asking them to do more. On the other hand, if they are not [reducing rates], then the guideline says you need to do more. And in fact, active surveillance is part of those [additional] recommendations.”

An under- or over-estimate?

Concerning the striking increase in MRSA prevalence from prior estimates, Jernigan noted that the survey approach used a very different methodology than approaches used in other studies. “A lot of the differences in numbers has to do with the methodology,” he says. “For example, they looked for evidence of infection *and* colonization. It was a voluntary study so it may be that hospitals that had particularly bad problems were more likely to want to participate.”

However, even if the survey findings are winnowed down to only the MRSA-infected, the resulting rate of 34 per 1,000 inpatients still is 8.6-fold higher than the most recent estimate by CDC researchers.³ The primary sources for previous estimates have been discharge data or surveillance data from CDC sentinel hospitals in the National Nosocomial Infection Surveillance (NSIS) system, both of which likely underrepresent the burden of MRSA nationally, Jarvis contends. “You look at the landscape of all the data that are out there and realize we really didn’t have a good estimate, and we knew that when I

was at CDC," he says. "We are looking at point prevalence [in this study], so it is kind of a snapshot of single day vs. the previous studies that have been estimates made on incidence data. The results of the survey show the extent and depth of the problem. We really had widespread distribution geographically and of various hospital types — not just 210 NNIS ICUs at large teaching hospitals. A large proportion of the respondents were people that don't get tapped in the NNIS database."

A minimum estimate?

While conceding the survey methodology is different than other studies, Jarvis cited other factors to support his contention the data gleaned from the study likely represent an *underestimate*. "I think the results are a minimum estimate," he says. "If everybody at every facility was doing very aggressive clinical cultures, then secondly they were doing active surveillance cultures — and using for both of those the most sensitive [laboratory] methods they could use — the numbers are only going to go up."

Indeed, only 28% of 1,237 responding facilities said they were using ASC methods to detect patients colonized with MRSA. Moreover, many of those using ASC reported doing so with rudimentary laboratory methods — meaning cases were likely going undetected even in hospitals looking for them. Of those performing active surveillance testing for MRSA, 54% used routine media and 38% used selective media. Only 8% used the gold standard of polymerase chain reaction (PCR) to detect MRSA colonization.

"It looked like that many of the facilities that were doing ASC had done some kind of risk assessment beforehand and were targeting high-risk populations," Jarvis says. "What was kind of surprising to me was that — number one, only 28% of them were doing ASC on anybody — and secondly, the majority was still using a nonselective media. That is the least sensitive of the [laboratory] methods that we have out there."

'We found it everywhere'

Despite such limitations, that survey netted widespread reports of infected and colonized MRSA patients from all types of facilities, exploding the myth that the bug is primarily a problem for large hospitals. "We found it everywhere," Jarvis says. "It didn't matter what the size of the

facility was or geographically where you were. The rate was very high and the majority was health care-associated."

CA-MRSA not driving results

Though it was not possible to truly delineate hospital strains of MRSA from emerging community-associated MRSA, the findings primarily reflect traditional hospital infections, Jarvis says. Despite the fact that many infections were diagnosed before the 48-hour cut point — a traditional measure used to differentiate infections acquired in the community vs. the hospital — previous studies have shown that most patients coming in with MRSA will have a history of health care exposure rather than true community-acquired infection, he notes.

"It is clear that using that 48-hour cutoff is not a very precise measurement of community vs. health care-associated, but I wanted to collect that data because I think a lot of people do use it," he says. "My guess is that we are actually even overcalling CA-MRSA vs. health care-associated in this survey because we are using artificial cut points."

Still, in survey data broken down on 7,944 patients with MRSA, 37% had skin and soft-tissue infections, which often are seen with CA-MRSA. There has been speculation that the rapid emergence of the USA300 strain of CA-MRSA could fuel a national increase in prevalence, and indeed some reports indicated the strain has simply displaced traditional strains in some hospitals. For the most part, however, CA-MRSA infections are occurring beyond the hospital and thus would not be reflected in the survey, Jarvis contends. "The majority of those patients end up in a [physician] office, emergency department, or outpatient clinics," he says. "They get seen, lanced, get an antibiotic, and go home. So under any circumstances only a minority of patients with CA-MRSA get admitted to the hospital in the first place. Certainly in our data, looking at the magnitude and prevalence of MRSA, the large proportion of it is health care-associated and not community-acquired."

Jarvis contrasted the study findings with the prevalence estimates in the late 1970s and early '80s when epidemiologists were just beginning to get a clear picture of emerging MRSA. "It's rather amazing when you look at that and see where we were sitting at that time," he says. "Many hospitals had virtually no MRSA, and even some large hospitals were only seeing like five cases in five years. Look at what it is now. I think that virtually every hospital in the country has MRSA and

many of them have endemic MRSA.”

Though preferring to be characterized as a proponent of prevention rather than simply an advocate of ASC, Jarvis has lobbied for the practice on many an occasion and clearly sees it as part of the solution. “For MRSA, it is quite clear from the huge body of literature now — there are almost 200 studies, either published papers or abstracts — showing that if you do a risk assessment, target active surveillance cultures for high-risk patients, put them in contact isolation, and reinforce hand hygiene and environmental cleaning that you can have a dramatic impact on reducing MRSA,” he says. “I don’t know of anyone who has done that — and who has got compliance — and has not seen a reduction in MRSA.”

Jarvis also rejects the argument that a focus on MRSA will lead to a rise in other infections. “I am not aware of [any studies] where MRSA has been controlled or at least moved in the direction of controls and other organisms have gone bananas,” he says. “Our infection control personnel are smarter than that.”

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Consumer groups seize on MRSA study

Urging legislatures, governors to take action

Consumer groups, patient safety advocates, and critics of the health care system are expressing outrage and demanding action after the highly publicized release of a study that showed methicillin-resistant *Staphylococcus aureus* (MRSA) prevalence in the nation’s hospitals is at least eight times higher than previously estimated.

The study by the Association for Professionals in Infection Control and Epidemiology (APIC) was unveiled recently in San Jose at the annual APIC conference. With national media outlets jumping on the story, the findings immediately energized the ongoing issue of state laws requiring hospitals to adopt measures such as active surveillance cultures (ASC).

“We are clearly telling reporters that this is just one bug, and that legislatures cannot legislate the bug of the month per se,” **Denise Graham**, vice president of public policy at APIC, told conference attendees. “You need to identify your MRSA reservoir, but that is just one component of the plan. This is what we are telling legislatures and the press, but the press like emotional stories, and this is an emotional issue.”

Though emphasizing the common goal of patient safety means the Consumers Union “isn’t the enemy,” she warned ICPs that the consumer advocacy group is sending letters to “every single governor asking them to speak to [their state] hospital administrators and ask them how many do active surveillance.” And that was before the MRSA study was released.

Best known as publishers of *Consumer Reports* magazines, the Consumers Union is encouraging people to join in the letter writing campaign to governors and other state “decision makers.” A template for such letters posted on the group’s web (www.StopHospitalInfections.org) states that: “All hospitals should be using ‘active surveillance,’ which has been validated by more than 100 studies around the world as an effective prevention technique. The Centers for Disease Control and Prevention and the Society for Healthcare Epidemiology of America have issued guidelines that describe the procedures for active surveillance. Most hospitals are familiar with these, yet few choose to use them. We are asking you to direct our state health agency to survey all hospitals to find out which ones are using active surveillance to prevent MRSA. We are asking for that information to be provided to the state legislature in a public report. We have a right to know which hospitals are using these successful evidence-based techniques.”

With that campaign already under way, the Consumers Union issued a press release when the APIC study was released that underscored its message that hospitals must take aggressive steps to protect patients from infections.

“MRSA is lurking in every U.S. hospital and poses a serious and sometimes deadly health risk to patients who are unwittingly exposed to these

superbugs," said **Lisa McGiffert**, director of Consumers Union's Stop Hospital Infections Campaign. "Unfortunately, most hospitals are not doing enough to keep these antibiotic-resistant germs in check. It's time for hospitals to aggressively step up their efforts to protect patients from these preventable infections. We know how to control MRSA, but most U.S. hospitals are not consistently following these successful infection control practices."

Another take on the MRSA prevalence study came from the Committee to Reduce Infection Deaths (www.hospitalinfection.org), a national patient safety advocacy group chaired by **Betsy McCaughey**, former lieutenant governor of New York. The findings of such a high level of MRSA prevalence in U.S. hospitals shows "the dangerous flaws in the policies of the Centers for Disease Control and Prevention," she said in a statement. "For 30 years, the CDC has collected data monthly tracking the rapid rise of drug-resistant infections, but has done almost nothing to stop it." The group charged that the CDC has "delayed" calling on hospitals to screen incoming patients for the MRSA bacterium despite numerous studies demonstrating that hospital infections cannot be prevented without knowing which patients are carrying the germ.

Asked about such criticisms, **John Jernigan**, MD, a medical epidemiologist in the CDC division of healthcare quality promotion, defended the approach outlined in the CDC's 2006 guidelines on multidrug-resistant organisms (MDRO). The MDRO guideline outlines a two-tier approach, with hospitals going to more aggressive measures like ASC if rates are not going down.² "If they are not [reducing rates], then the guideline says you need to do more," he tells *Hospital Infection Control*. "And in fact active surveillance is part of those [additional] recommendations." ■

CDC issues new patient isolation guidelines

It's official: 'Nosocomial' has left the building

[Editor's note: The Centers for Disease Control and Prevention has posted its long-awaited (OK, long, long-awaited) new isolation guidelines at www.cdc.gov/ncidod/dhqp/gl_isolation.html. Look for a complete analysis of key changes and additions along with ICP comments

and reactions in a special report in the next issue of *Hospital Infection Control*. For immediate reference, the executive summary of the guidelines is summarized below.]

The "Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007" updates and expands the "1996 Guideline for Isolation Precautions in Hospitals." The document's executive summary notes that the following developments led to revision of the 1996 guideline:

1. The transition of health care delivery from primarily acute care hospitals to other health care settings (e.g., home care, ambulatory care, free-standing specialty care sites, long-term care) created a need for recommendations that can be applied in all health care settings using common principles of infection control practice, yet can be modified to reflect setting-specific needs. Accordingly, the revised guideline addresses the spectrum of health care delivery settings. Furthermore, the term "nosocomial infections" is replaced by "health care-associated infections" (HAIs) to reflect the changing patterns in health care delivery and difficulty in determining the geographic site of exposure to an infectious agent and/or acquisition of infection.

2. The emergence of new pathogens (e.g., SARS-CoV associated with the severe acute respiratory syndrome [SARS], avian influenza in humans), renewed concern for evolving known pathogens (e.g., *C. difficile*, noroviruses, community-associated MRSA [CA-MRSA]), development of new therapies (e.g., gene therapy), and increasing concern for the threat of bioweapons attacks, established a need to address a broader scope of issues than in previous isolation guidelines.

3. The successful experience with Standard Precautions, first recommended in the 1996 guideline, has led to a reaffirmation of this approach as the foundation for preventing transmission of infectious agents in all health care settings. New additions to the recommendations for Standard Precautions are Respiratory Hygiene/Cough Etiquette and safe injection practices, including the use of a mask when performing certain high-risk, prolonged procedures involving spinal canal punctures (e.g., myelography, epidural anesthesia). The need for a recommendation for Respiratory Hygiene/Cough Etiquette grew out of observations during the SARS outbreaks where failure to implement simple source control measures with patients, visitors, and health care personnel with

respiratory symptoms may have contributed to SARS coronavirus (SARS-CoV) transmission. The recommended practices have a strong evidence base. The continued occurrence of outbreaks of hepatitis B and hepatitis C viruses in ambulatory settings indicated a need to reiterate safe injection practice recommendations as part of Standard Precautions. The addition of a mask for certain spinal injections grew from recent evidence of an associated risk for developing meningitis caused by respiratory flora.

4. The accumulated evidence that environmental controls decrease the risk of life-threatening fungal infections in the most severely immunocompromised patients (allogeneic hematopoietic stem cell transplant patients) led to the update on the components of the Protective Environment (PE).

5. Evidence that organizational characteristics

(e.g., nurse staffing levels and composition, establishment of a safety culture) influence health care personnel adherence to recommended infection control practices, and therefore are important factors in preventing transmission of infectious agents, led to a new emphasis and recommendations for administrative involvement in the development and support of infection control programs.

6. Continued increase in the incidence of HAIs caused by multidrug-resistant organisms (MDROs) in all health care settings and the expanded body of knowledge concerning prevention of transmission of MDROs created a need for more specific recommendations for surveillance and control of these pathogens that would be practical and effective in various types of health care settings. ■



Dead reckoning: 98,987 patients die in single year

"So many, I had not thought death had undone so many."

— T.S. Eliot, *The Wasteland*

Let's not round it off to a cool — make that Cold — 100,000 deaths. No, leave it as it lies: 98,987 people with health care-associated infections (HAIs) listed as a contributing cause of death over the span of a single, miserable year.

None shall know what that breaks down to in numbers of grieving but never-to-be-the-same survivors — be they parents, siblings, widows, or orphans. The devil has those details, and we can but stare blankly at those five digits, a number that epidemiologists and their computers arrived at that is:

- The equivalent of a plane carrying 270 passengers crashing with no survivors. Every day for a year.
- Some 40,000 more people than are listed on the Vietnam War memorial wall.
- More than double the number people who die every year in car accidents in the United States.

The 100,000 annual infection deaths has been used as a stark estimate for years, but the Centers for Disease Control and Prevention recently published an elaborate analysis that gives us the more chillingly precise 98,987 for the year 2002.¹ According to the authors, the main source of 1990-2002 data was gleaned from the CDC's National Nosocomial Infections Surveillance (NNIS) system. In addition, data from the National Hospital Discharge Survey (for 2002) and the American Hospital Association Survey (for 2000) were used to supplement NNIS data. The percentage of patients with an HAI whose death was determined to be caused or associated with the HAI from NNIS data was used to estimate the number of deaths, the authors explained.

In other words, it still is a dead reckoning based on statistical analysis of surveillance data and other sources, but somehow arriving at an exact number has a humanizing effect. These lives may have ended but they have not been rounded off. Researchers estimated that a staggering 1.7 million patients had an HAI that year and 155,668 of them died. The aforementioned 98,987 were those cases where death was caused by or associated with the HAI. The death totals included 35,967 for pneumonia, 30,665 for bloodstream infections, 13,088 for urinary tract infections, 8,205 for surgical site infections, and 11,062 for infections of other sites. Need we remind that there was nothing particularly unusual about 2002, and that death toll may represent an underestimate. "Our death estimate is limited in that attributable mortality is often difficult to determine from a patient's records," the

CDC researchers concluded.

What is not difficult to determine is why people — consumer advocates, legislators, patients — stare in blank disbelief at such numbers. They may be told that some of the 2002 dead were no doubt very sick patients being kept alive by medical interventions that would not have been possible in past years. Some infections are inevitable, the deaths to follow unavoidable. Perhaps, but there is another common answer to the inevitable “why?” that loses epidemiological rigor, sounding almost criminally trivial: Too often, health care workers do not wash their hands between patients. There it is, and even with a thousand infection control presentations somewhere still echoing as evidence, it still seems far short of an acceptable explanation. And for that matter, not much of an epitaph.

— Gary Evans, Editor

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Pandemic mask guidance frees up N95s for hospitals

CDC: Use masks for all but HCWs

If an influenza pandemic strikes, the public can use standard surgical masks, “social distancing” and hand hygiene to protect against community transmission, the Centers for Disease Control and Prevention (CDC) announced. That recommendation clears the way for businesses to stockpile less expensive and more abundant surgical masks — and to leave the N95 respirators for hospitals and other health care facilities.

Already, the respirator supply has loosened, says **David Naylor**, vice president of sales at

AramSCO, of Thorofare, NJ, the world’s largest distributor of N95 respirators. Some hospitals had experienced delays in receiving their respirator orders as large customers ordered respirators for pandemic stockpiling.

“The surgical mask decision by CDC finally gave some direction to the pandemic preparedness market,” says Naylor, who is knowledgeable about the health care market but does not supply hospitals. “Whether accidentally or intentionally, it will have a big relief on hospital supplies.”

Respirators or masks are considered a key protective measure in the event of pandemic influenza. Public health authorities acknowledge that it will take months, at least, to develop a strain-specific vaccine.

Last year, the CDC reversed its previous guidance and said that N95 respirators would be “prudent” for health care workers during “direct care activities involving patients with confirmed or suspected pandemic influenza.”

Yet massive worldwide stockpiling by corporations, utilities, and public health agencies caused spot shortages of N95s even for hospitals’ everyday use.

Now, the CDC is urging those businesses and individuals who are doing personal pandemic planning to rely primarily on surgical masks. N95 respirators, which require fit-testing in order to have the proper protective factor, “have a very limited role in pandemic planning,” CDC director **Julie Gerberding**, MD, MPH, said in a press conference.

“No mask or any facial protection alone is going to be enough to completely eliminate the risk of a pandemic,” she said. “So people have to always remember that what they’re doing about their protection has to be done in context of [other] steps.”

Gerberding acknowledged that the community-based mask guidance wasn’t based on scientific evidence, and that more research is needed on the protective value of masks and respirators. But she added, “we think that we have something to offer here that will just be useful to people who are making decisions for themselves and for their families.”

The CDC does recommend that family members

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caring for a sick person at home wear a respirator, if one is available. Gerberding also discouraged businesses outside of health care from stockpiling. "Masks may be an extra margin of safety for businesses, but I don't think any of the masks that we're talking about today are going to make a very big difference in what a business would need to be doing during a pandemic," she said. "So at this point, I would say that stockpiling masks of any kind is really an option that some businesses may consider, but it wouldn't be our priority in terms of overall preparedness."

The national stockpile contains about 52 million surgical masks and 100 million N95 respirators. While business sites generally do not need to worry about N95 stockpiling, hospitals need to pay greater attention to their supplies, advises Naylor. Most hospitals function with "just-in-time" inventory, maintaining just three days supply of respirators and other products. They count on vendors to maintain a stockpile for emergencies.

"It gives them this artificial feeling of security," says Naylor. "Keep in mind this is not a government-owned stockpile. This is owned by private entities. Don't expect your contract holder of your three-day predictable usage to be able to

handle a surge that is nationwide."

Instead, hospitals should purchase a stockpile and contract with a third party to store respirators, advises Naylor. Excess government warehouse space is available around the country at low rates, he says. "Your agreement should be

CNE/CME questions

5. A study of methicillin-resistant *Staphylococcus aureus* (MRSA) in health care settings found that MRSA prevalence was how many times higher than previous estimates?
 - A. two to three
 - B. four to seven
 - C. eight to 11
 - D. 12 to 15
6. The MRSA prevalence study confirmed that the pathogen is primarily a problem for large teaching hospitals, as other settings reported very little MRSA.
 - A. True
 - B. False
7. The Consumers Union has launched a letter writing campaign to state governors regarding what infection prevention practice?
 - A. Active surveillance cultures
 - B. Flu shots for health care workers
 - C. Hand hygiene
 - D. All of the above
8. In effort to preserve N95 respirators for health care settings, the Centers for Disease Control and Prevention advised the public to use which of the following measures to prevent community transmission?
 - A. Standard surgical masks
 - B. "Social distancing"
 - C. Hand hygiene
 - D. All of the above

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that you can come in without notice and inventory your material." ■

CDC infection tracking system goes nationwide

About 1,000 hospitals expected to join NHSN

The Centers for Disease Control and Prevention has opened enrollment for all health care facilities in the United States who wish to join its state-of-the-art infection reporting system: the National Healthcare Safety Network (NHSN). The NHSN is a secure, web-based reporting network that lets facilities track infections associated with health care. It now is available to all health care facilities in the United States, it recently announced.

NHSN currently has more than 600 participants and is utilized in 45 states. That number is expected to grow to some 1,000 as hospitals and other health care settings take the CDC up on the invitation. CDC already is partnering with dozens of health care facilities, including Department of Veterans Affairs hospitals, to use NHSN as a tool to track the prevention of a common infection caused by methicillin-resistant *Staphylococcus aureus* (MRSA). NHSN has been recently improved to meet the needs of states with mandatory public reporting of health care-associated infections. As a result, many states are designating NHSN as part of systems for hospitals to report health care-associated infections to meet requirements of state laws requiring infection rate disclosures.

The NHSN provides multiple options for data analysis and more flexibility for sharing information both within and outside a facility — including the general public, if the facility so chooses. The system builds upon the CDC's National Nosocomial Infection Surveillance (NNIS) system which,

for more than 30 years, was the gold standard system for tracking health care-associated infections. CDC developed the NNIS system to help infection control professionals and hospitals stay abreast of the rapidly expanding science and practice of infection prevention and control, and better manage episodes of health care-associated infections. The NNIS system had about 300 participating facilities nationwide. ■

CNE/CME answers

5. C; 6. B; 7. A; 8. D.

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CDC: Add HCW flu shots to patient safety program

Another move to end HCW apathy, resistance

Health administrators should consider the level of vaccination coverage among health care workers to be a “measure of a patient safety quality program,” recommends the Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices (ACIP).

In recently released recommendations that continue the CDC’s effort to reverse historically poor flu immunization rates among caregivers, ACIP says calls for hospital and health care administrators to implement policies to encourage HCP vaccination (e.g., obtaining signed statements from HCP who decline influenza vaccination). “Health care facilities should offer influenza vaccinations to all health care personnel (HCP), including night, weekend, and temporary staff,” ACIP states. “Particular emphasis should be placed on providing vaccinations to workers who provide direct care for persons at high risk for influenza complications. Efforts should be made to educate HCP regarding the benefits of vaccination and the potential health consequences of influenza illness for their patients, themselves, and their family members. All HCP should be provided convenient access to influenza vaccine at the work site, free of charge, as part of employee health programs.”¹

The recommendations follow a joint statement

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last year by ACIP and the CDC’s Healthcare Infection Control Practices Advisory (HICPAC).² Those joint guidelines stated that “obtaining declination statements from health care workers who refuse vaccination for reasons other than medical contraindications can assist facilities in identifying personnel who might require targeted education or other interventions to overcome barriers to vaccine acceptance. In addition, collection of such information will allow health care facilities to determine what proportion of their staff are reached and offered vaccine.”

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