

SJR

19

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Senator Gary Stevens

Alaska State Legislature

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Sponsor Statement for Senate Joint Resolution 19 (February 27, 2006)

Some 2 million infections a year are acquired in hospitals and an estimated 90,000 people die as a result of these infections, making it the sixth-leading cause of death in the country. The cost to the consumers is between \$4.5 and \$11 billion a year. Given these alarming statistics, it is vital for consumers to have full knowledge of how medical facilities fare with infection rates. Passage of SJR 19 can help accomplish this goal by providing lawmakers, state health officials and medical professions the opportunity to craft workable legislative recommendations for the collection of data on hospital-acquired infection rates.

SJR 19 creates the Task Force to Assess Public Reporting of Health Care Associated Infections. This ten member panel will consist of two senators, two representatives, the Chief of Epidemiology for the State of Alaska, one healthcare consumer from rural Alaska, one healthcare consumer from urban Alaska, a representative of the Alaska Native Tribal Health Consortium, a representative from the Alaska Chapter of the Association of Professionals in Infection Control and Epidemiology, and a representative of the Alaska State Hospital and Nursing Home Association.

During the 2006 Legislative Interim, the Task Force will be asked to:

- (1) Review experience to date with public reporting of hospital-associated infections.
- (2) Develop a white paper to be used for drafting legislation for reporting of healthcare associated infections. The white paper will address the unique healthcare challenges of Alaska and would encompass:
 - (a) Mechanism(s) for reporting;
 - (b) Identifying data sources and possible outcome and process measures to be reported;
 - (c) Timeline for implementation;
 - (d) Infrastructure needs for supporting a robust ongoing reporting system for dissemination of accurate data.

I ask for your support of this important legislation.

FISCAL NOTE

STATE OF ALASKA
2006 LEGISLATIVE SESSION

Fiscal Note Number: 2
 Bill Version: CSSJR 19(FIN)
 (S) Publish Date: 4/24/06

Revision Date/Time (Note if correction): _____ Dept. Affected: Legislature
 Title: "Relating to creating the Task Force to RDU: Budget and Audit Committee
Assess Public Reporting of Health Care Associated... Component: Legislative Finance
 Sponsor: Senator Gary Stevens
 Requestor: Senate Finance Component No: 774

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below

OPERATING EXPENDITURES	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Personal Services	0.0	0.0	0.0	0.0	0.0	0.0
Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	0.0	0.0	0.0	0.0	0.0	0.0
Supplies	0.0	0.0	0.0	0.0	0.0	0.0
Equipment	0.0	0.0	0.0	0.0	0.0	0.0
Land & Structures	0.0	0.0	0.0	0.0	0.0	0.0
Grants & Claims	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
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CHANGE IN REVENUES ()	0.0	0.0	0.0	0.0	0.0	0.0
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FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	0.0	0.0	0.0	0.0	0.0	0.0
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2006) cost: 0.0

Check this box (X) if funding for this bill is included in the Governor's FY 2007 budget proposal:

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: (Attach a separate page if necessary)

CS SJR19 (FIN) establishes a 10 member Task Force to Assess Public Reporting of Health Care Associated Infections. The 10 members are appointed jointly by the President of the Senate and the Speaker of the House. Public members of the Task Force may not receive compensation, per diem, or reimbursement for travel or other expenses incurred while serving on the Task Force, except that persons appointed as consumers of health care are entitled to reimbursement for lodging and travel expenses incurred while serving on the Task Force. The Senate Finance Committee will absorb the lodging and travel expenses for the public members appointed as consumers of health care. The Task Force will study the issue and issue a white paper of its findings to the Legislature by January 31, 2007. The Task Force may meet during and between Legislative sessions. The Legislative Affairs Agency will absorb costs to teleconference meetings and the costs to print the white paper.

Prepared by: Karla Schofield, Deputy Director Phone 465-6626
 Division: Legislative Affairs Agency Date/Time 4/24/06 4:49 PM
 Approved by: Pamela Varni, Executive Director Date 4/24/2006
 Agency: Legislative Affairs Agency

FISCAL NOTE

STATE OF ALASKA
2006 LEGISLATIVE SESSION

Fiscal Note Number: _____
 Bill Version: CS SJR 19 (FIN)
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Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	0.0	0.0	0.0	0.0	0.0	0.0
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Land & Structures	0.0	0.0	0.0	0.0	0.0	0.0
Grants & Claims	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
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CHANGE IN REVENUES ()	0.0	0.0	0.0	0.0	0.0	0.0
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Prepared by: Karla Schofield, Deputy Director Phone 465-6626
 Division Legislative Affairs Agency Date/Time 4/24/06 4:49 PM
 Approved by: Pamela Varni, Executive Director Date 4/24/2006
 Agency Legislative Affairs Agency

LEGAL SERVICES

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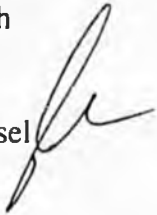
State Capitol
Juneau, Alaska 99801-1182
Deliveries to: 129 6th St., Rm. 329

MEMORANDUM

February 16, 2006

SUBJECT: Summary of SJR 19 (Work Order No. 24-LS1657\A)

TO: Senator Gary Stevens
Attn: Doug Letch

FROM: Jean M. Mischel
Legislative Counsel 

You have requested a summary of the above-described resolution.

As a preliminary matter, note that a summary of a resolution should not be considered an authoritative interpretation of the resolution and the resolution itself is the best statement of its contents.

The Whereas clauses state the findings of the legislature regarding the rate and costs of hospital acquired infections and other infections associated with health care.

The Resolve clauses establish a 10 member task force to conduct a review of and report on infections associated with health care and hospitals and reporting mechanisms.

JMM:med
06-135.med



Alaska State Legislature

Senate Majority Web: www.akrepublicans.org

Sponsor: Senator Gary Stevens
Current Version: SJR 19
Contact: Doug Letch, 465-4925

Fact Sheet for: Senate Joint Resolution 19

Short Title: TASK FORCE ON HOSPITAL INFECTIONS

Summary:

- Establishes the Task Force to Assess Public Reporting of Health Care Associated Infections.
- Composes the task force of: two state senators; two state representatives; the state chief of epidemiology; a health care consumer from rural Alaska; a health care provider from urban Alaska; a representative of the Alaska Native Tribal Health Consortium; a representative of the Alaska Chapter of the Association of Professionals in Infection Control and Epidemiology; and a representative of the Alaska State Hospital and Nursing Home Association.
- Requires the task force to:
 - review the experience of the public with reporting of infections associated with health care and hospitals;
 - develop a white paper to be used for drafting legislation for reporting of infections associated with health care and hospitals that addresses the unique health care challenges in the state.
- Terminates the task force on Feb. 1, 2007.

Benefits:

- Advances efforts to make information about infections associated with health care available to the public, enabling patients to make more informed choices about their health care.
- Helps improve overall health care quality.

Background:

- An estimated 2 billion infections associated with health care occur in the United States each year, taking 90,000 lives and costing \$4.5 billion in excess health care costs. Since 2002, six states have enacted legislation that requires hospitals to report hospital-acquired infections to the public. The state of Alaska, on the other hand, does not currently require reporting of these kinds of infections except as part of a risk management program.

ASHNHA Testimony on SJR 19
Presented by: Rod Betit, President/CEO
April 20, 2006

The membership of the Alaska State Hospital and Nursing Home Association (ASHNHA) supports SJR 19 and believes it to be important legislation.

Although some complications from surgery and other health care are unavoidable, we agree with the sponsor that care can be improved through better adherence to evidence-based practice recommendations and by giving more attention to designing systems of care with redundant safeguards.

Alaska hospitals have been actively implementing measures to reduce hospital acquired infections for some time now. Research shows, for example, that delivering antibiotics to a patient within one hour prior to beginning surgery can dramatically cut post-surgery infection rates.

While Alaska's hospitals have been addressing these and other reasons for hospital acquired infections, we believe creation of this Task Force will allow us to do several things:

- o First it will allow us to educate employers, community leaders and the public about our initiatives to strengthen health care quality for all Alaskans
- o Second, it will provide us with valuable input into the deliberations of 'next steps' for addressing other factors leading to hospital acquired infections, and
- o Third, it will provide a deliberative environment to design a reporting system that will track infection rates in Alaska that will be meaningful for Alaskans.

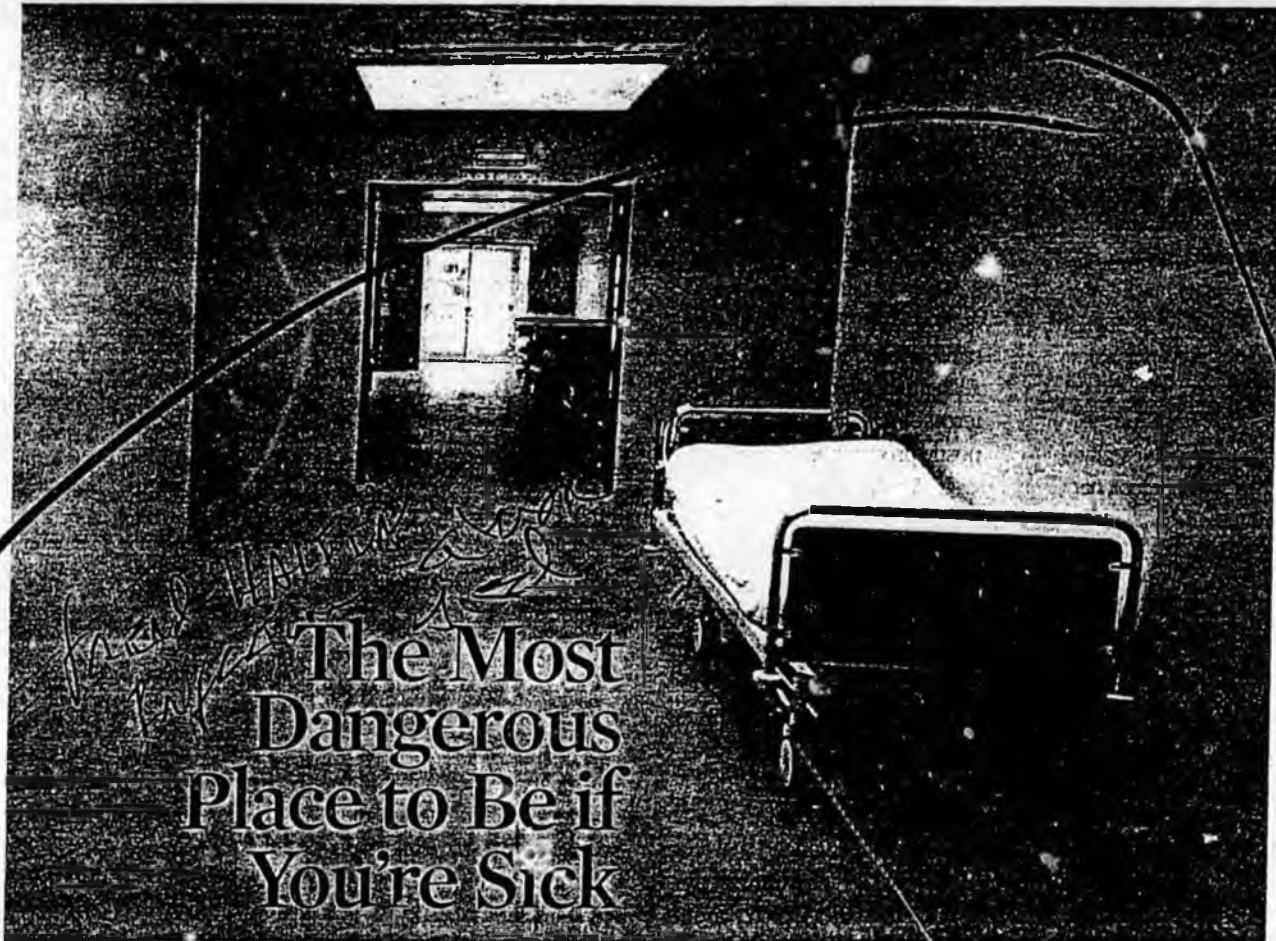
ASHNHA urges this Committee to move SJR 19 forward.

ASHNHA Represents the Following Alaska Health Care Providers

The *Alaska State Hospital and Nursing Home Association* represents 23 acute care hospitals, 2 behavioral health facilities, 6 assisted living facilities (Alaska Pioneer Homes), and 5 nursing facilities. ASHNHA's rich composition of private, federal, state, and tribal health care facilities provides a balanced viewpoint on important health care policy matters. ASHNHA's Legislative Committee evaluates health care legislation weekly and authorizes the position expressed in this testimony. Our member facilities include:

Alaska Regional Hospital, Alaska Native Medical Center, Alaska Pioneer Home System, Alaska Psychiatric Institute, Bartlett Regional Hospital, Bassett Army Community Hospital, Central Peninsula General Hospital, Cordova Community Medical Center, Denali Center Nursing Home, Fairbanks Memorial Hospital, Heritage Place Nursing Home, Kakanak General Hospital, Ketchikan General Hospital, Maniilaq Health Center, Mary Conrad Center, Mat-Su Regional Hospital, Mt. Edgecumbe Hospital SEARHC, North Star Behavioral Health, Norton Sound Regional Hospital, Petersburg Medical Center, Providence Alaska Medical Center, Providence Extended Care Center, Providence Kodiak Island Medical Center, Providence Seward Medical & Care Center, Providence Valdez Medical Center, Sitka Community Hospital, South Peninsula Hospital, USAF 3rd Medical Group- Elmendorf, Wrangell Medical Center, Wildflower Court Nursing Home, Yukon Kuskokwim Delta Regional Hospital.

[BULLETINBOARD]



When Leroy Rickabaugh had surgery to remove a bladder tumor at Mercy Medical Center in Des Moines, Iowa, last October, he expected to be in the hospital for just a few days.

Instead, he ended up staying for nearly three weeks after he contracted a bacterial infection that also hit several other patients on his ward. "I didn't get more seriously sick," Rickabaugh, 74, says, "but they wouldn't let me out until it cleared up."

In a way, Rickabaugh was lucky. Of the 2 million or so Americans each year who contract infections while in the hospital, about 90,000 die because of them. Hospital infections, in fact, are the nation's sixth-leading cause of death.

Health care and consumer activists have been pushing for laws that would require hospitals to publicly disclose their infection statistics, in the hope of pressuring them into adopting more effective anti-infection measures. So far they've scored victories in five states: Florida, Illinois, Missouri, Pennsylvania and Virginia. About 30 other states are considering similar legislation.

"It's a problem begging for attention, one that costs a lot of lives and money," says Lisa McGiffert, director of the Stop Hospital Infection Project for Consumers Union. "Clearly, hospitals aren't doing all that they can."

Now, with efforts in the states accelerating, comes a push for a nationwide standard.

"We have an information shortage about hospital infections," says Kenneth W. Kizer, M.D., president of the National Quality Forum, a Washington-based nonprofit organization. "But if we have 50 different standards for measuring the problem, we'll have information chaos."

First the bad news: About 90,000 Americans die each year from infections they contract while in the hospital.

Most infection-fighting measures aren't new, but experts say they're not consistently followed. Hungarian physician Ignaz Semmelweis proved in 1847 that the transmission of infections in hospitals could be reduced by hand washing. But many doctors, nurses and other staff members still do not wash their hands between patients.

Another simple but often overlooked precaution: ensuring that surgery patients receive the correct antibiotic up to one hour before incisions are made.

"Doctors and nurses get so caught up in their work that they don't even realize how far their own practices fall short until they see the data out there," says David Schinke of the Washington-based American Health Quality Association. "We need to get that data to them."

—Patrick J. Kiger

Myth: Hospitals Keep You Safe from Germs

Hospital Infections Kill Tens of Thousands Every Year



(ABC NEWS)

abc NEWS

Oct. 14, 2005 — There's a deadly threat hiding inside America's hospitals. What's even scarier, your hospital is probably keeping it a secret. Maureen Daly's mother was a healthy 63-year-old woman when she had surgery to fix a broken shoulder. However, after being admitted to the hospital, Daly's mother got an infection that left her immobilized on a respirator. Daly was told that life-threatening germs are an inevitable fact of hospital life.

Daly was shocked. "I cannot accept that it would be a fact of life that you can walk into a hospital with a broken shoulder and leave practically dead," she said. Her mother died four months later. It turns out hospital infections are the fourth-leading cause of death in the United States.

Betsy McCaughey, former lieutenant governor of New York and founder of the Committee to Reduce Infection Deaths, said, "These infections kill as many people each year in our country as AIDS, breast cancer and auto accidents combined."

McCaughey said it's secrecy that's allowed the problem to grow. "Most states have not required hospitals to report their infections, or provide that information to the public," she said.

Pennsylvania is one of only six states that has passed a law requiring the reporting of infections. Experts say public disclosure forces hospitals to reduce infection rates. Dr. Rick Shannon, chief of medicine at Allegheny General Hospital in Pittsburgh, looked at the data on patients in the hospital's intensive care units. He was stunned.

"Fifty-one percent of everyone who got these infections died. Half the people who got one died," he said. Dr. Shannon wasted no time. He gave an order to the ICU staff. Reduce hospital infections to zero — in just 90 days.

Staff nurses said they didn't think it could be done.

But after just one week, the ICU staff identified the culprit. It wasn't a superbug — it was the staff. And the fact they each had their own way of washing hands, changing dressings, and putting in catheters. "No one actually knew what the right way to do it was. And not knowing what the right way to do it was that all these little errors could creep in that would lead to infection," Dr. Shannon said.

Dr. Shannon and his team quickly found solutions, like putting in more hand-sanitizers and raising the head of the bed 30 degrees to prevent pneumonia. The results were unbelievable.

"Ninety days later, we went from 49 infections to zero," he said.

And the results a year later are equally impressive. Only one patient in the ICU has died from an infection.

McCaughey says it's important for the public to know about infection rates at hospitals. "The public has a right to this information. If you are going into the hospital, you should be able to find out which hospital in your area has a serious infection problem, so you can stay away from that hospital," she said. Her advocacy group is working to pass more state laws — like Pennsylvania's — requiring hospitals to release this data.

And McCaughey says there's a simple thing you can do to keep yourself safe from dangerous germs in any hospital.

"Ask doctors and nurses to clean their hands before touching you. If you are worried about being too aggressive, just remember, your life is at stake," she said.

Los Angeles Times
latimes.com.

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<http://www.latimes.com/news/printedition/la-sci-staph26feb26.0,741823.story>
From the Los Angeles Times

Infection Is Growing in Scope, Resistance

A virulent staph germ once largely confined to hospitals is emerging in jails, gyms and schools.

By Jia-Rui Chong
Times Staff Writer

February 26, 2006

It all began with what looked like a spider bite on Eileen Moore's left thigh. Nothing to worry about, she figured.

Within 24 hours, the "bite" became a 6-inch welt with a bubble of pus that eventually ripened into a black wound. Over the next few months, scabs dotted her face. A hangnail caused her middle finger to bloat like a sausage. Her pierced ears oozed pus.

The cause of Moore's ordeal was a bacterium known as methicillin-resistant *Staphylococcus aureus*, which in its most severe form can turn into a fatal flesh-destroying scourge.

For decades, the infections were found only in hospitals, where the constant use of different antibiotics, including the potent methicillin, made it resistant to many of the most powerful antibiotics.

In the last few years, it has emerged in gyms, jails, schools — and just about anywhere bacteria can grow. It has become a simmering problem that is largely unknown by the general population.

"I would characterize it as widespread, and in some areas it is epidemic," said Jeff Hageman, an epidemiologist at the Centers for Disease Control and Prevention and a coauthor of two studies on staph published last year.

There are few statistics on the disease, because resistant staph infections are not routinely reported to the CDC. But one study published last year in the journal *Emerging Infectious Diseases* estimated there were about 126,000 cases from 1999 to 2000 — twice the number of hepatitis B cases each year.

"The rapidity with which this has emerged over the last two to three years is probably unprecedented," said Donald Low, a microbiologist at the University of Toronto who was one of the key scientists who dealt with Toronto's SARS outbreak in 2003. "When you look at the numbers, this way outstrips other so-called new infectious diseases."

Its victims are legion.

Five football players with the St. Louis Rams developed lesions on their elbows, forearms or knees, where turf burns had opened up their skin in 2003. Players from a competing team also developed sores after playing against the Rams.

San Francisco has seen a surge of this antibiotic-resistant bacteria in intravenous drug users and homeless people.

In 2004, actress Hilary Swank found a blister on her foot while training at a Brooklyn boxing gym for her part in the film "Million Dollar Baby." It turned out to be a staph infection.

Moore, a 38-year-old La Cañada Flintridge software consultant, has no idea where she got her infection. All she knows is that it took four debilitating months with three increasingly powerful antibiotics to rid herself of the disease.

These days, she views every rash and pimple with suspicion.

"I'm a germophobe now," she said.

A large part of the problem in combating the staph bacterium is that it is ubiquitous.

More than 30% of Americans carry some kind of staph infection in their nose. About 1% have the methicillin-resistant strain, and half of those have an even newer strain that is less resistant, but more damaging. Many carriers never develop a skin infection, either because they have some unknown immunity or because the bacteria never have an opportunity to penetrate their skin through a wound or rash. But carriers can still spread the disease.

Staphylococcus aureus was first identified in the 1880s. It was named *aureus*, or golden in Latin, because of its distinctive color.

It survived as a relatively undistinguished microbe until the mid-20th century. The introduction of the first antibiotic, penicillin, in 1941 set the bacterium on its deadly journey of mutation. It took just two years for reports to trickle in of the bacterium's resistance.

In the early 1960s, doctors deployed a new antibiotic, methicillin, against the disease. The first signs of resistance appeared in less than a year.

The resistant strain became ingrained in hospitals in Europe, Australia and the U.S.

By the early 1990s, methicillin-resistant staph infections became the leading cause of hospital-acquired skin infections in the U.S. Recent studies have shown that this kind of staph bacterium has also colonized hospitals in Egypt, Taiwan and South America.

It was inevitable that the resistant bacterium would emerge elsewhere.

The first smattering of cases of what came to be known as community-acquired methicillin-resistant *Staphylococcus aureus* appeared as early as 1990.

The community strain is genetically different from that found in hospitals. Because it has not been bombarded by as many antibiotics, it is less resistant to drugs, but is more virulent.

To gauge the prevalence of the strain, researchers at Olive View-UCLA Medical Center in Sylmar analyzed skin infections that showed up in their emergency room. In 2002, methicillin-resistant staph caused 29% of those infections. Two years later, the rate was 64%.

A study published last year in the *New England Journal of Medicine* estimated there were about 26 community-acquired cases per 100,000 people in Atlanta and 18 per 100,000 people in Baltimore.

It is a hardy bug. The bacterium likes to grow in warm, moist areas of the human body, such as the nose, armpit or groin. It can linger on the skin without causing infection, waiting to enter through a cut or an abrasion. Unlike many other germs, it can also survive hours, possibly days, on inanimate objects such as towels or catheters.

Once inside the body, the bacteria can bloom into rashes, pimples and boils. But sometimes the bacteria cause invasive infections, such as pneumonia or meningitis. In a few cases, staph infections can turn into a nightmarish necrotizing fasciitis, the so-called flesh-eating disease. In rare cases, an infection can be fatal.

Lancing a wound is sometimes enough to stop a broader infection. But if the bacteria has spread through a person's body, antibiotics are the only effective cure.

There is a hierarchy of antibiotics, starting with older drugs, such as penicillin, and working up to the most aggressive ones, including vancomycin and linezolid, which can cause serious side effects. Using the most aggressive ones first only helps to foster more drug resistance. Thus, infected patients are often initially prescribed antibiotics that have little effect.

When Thomas Lovato's 9-year-old daughter, Cynthia, developed tiny red bumps on her hips and abdomen in August, her pediatrician thought the young girl had flea bites.

The pediatrician prescribed the common antibiotic amoxicillin, but the boils didn't go away, said Lovato, a 38-year-old air conditioner repairman from San Jose. He tried to help his daughter by popping them.

Soon he spotted a pimple on his own neck that looked like an ingrown hair follicle. Within days it grew to the size of a quarter. Then a painful rash 10 inches wide erupted on his groin, he said. Another popped up on his chin.

In about a week, he developed a fever and went to the local emergency room, where doctors cut open the wound on his groin and prescribed amoxicillin, he said.

By the beginning of September, their boils were growing faster than they had before and were three times bigger. Cynthia would scream when anyone touched them. Pus started coming out from beneath Lovato's fingernails. His 3-month-old son, Hayden, developed small bumps on the back of his head, Lovato recalled.

The whole family went back to the emergency room and the doctor prescribed different antibiotics, including rifampin, a drug commonly used to treat tuberculosis and leprosy, but which can cause liver damage.

They went on a mission to try to contain the infection. They wore surgical gloves when they tended their sores. They squirted sanitizer gel on their hands every time they touched anything. They scrubbed walls, doorknobs and surfaces with bleach and washed their bedding in hot water every other day. They skipped work and school for months, sequestered in their bedroom with little contact with the outside world, he said.

For the last month, they think they've been clear. But they fear the infections will return.

"We're trying to be optimistic," said Lovato's wife, Lorraine, the only one to escape infection.

Amid the din of afternoon wrestling practice at Bell High School, 14-year-old Manuel Villegas pushed a microfiber mop infused with a disinfectant across purple gym mats.

"I'm not going to get it," Villegas said. "That's why I take two showers a day, before practice and after practice. I bring my own soap to the boy's locker room."

Rashes started popping up on Coach Eric Klein's wrestlers about two years ago, and Klein quickly invested in the \$200 mop. He didn't know exactly what was causing all of the rashes — maybe ringworm, maybe staph — but he was worried.

Last season, he started asking the kids to lather themselves in a special wrestling foam that is supposed to provide a barrier to transmission.

"I spend a lot of money on having the mats cleaned," Klein said. "The last couple or three years, it's been a big stress."

Just as Villegas was scrubbing the mats, teammate Jose Uribe, 16, walked in with a red flush on his arm and a dark crusty scab in the middle of it.

"I think it's a spider bite," he told his teammates. Uribe said he saw a doctor, but he couldn't remember what kind of infection the doctor said it was. He said he was taking penicillin.

Klein barked at Uribe to tape up his arm. "Did the doctor say it was OK?" he asked.

Uribe nodded.

A large part of the problem with the spread of drug-resistant staph is that it is difficult to diagnose. The only way to tell for sure is a test that can take up to three days for results.

Eileen Moore, the La Cañada resident, started on the common antibiotic Keflex and ended with rifampin.

"When I think how I have something that's resistant to all Western medicine, or almost all Western medicine, that's scary to think about," Moore said. "Had I been resistant to those other antibiotics, I could have died."

Dr. Thomas Horowitz, who treated Moore at his office in downtown Los Angeles, said if rifampin didn't work, he was prepared to check her into the hospital and set up an intravenous drip of

vancomycin, considered one of the antibiotics of last resort.

"We're seeing resistance to so many of the antibiotics, and so little new antibiotic research is going on," Horowitz said.

Ten years ago, a strain that could partially resist vancomycin surfaced in Japan.

A totally resistant strain emerged a few years later in Michigan. Doctors have recorded six cases worldwide, all in the U.S.

*

(BEGIN TEXT OF INFOBOX)

Microscopic menace

*

Within a few years of the introduction of penicillin in 1941, antibiotic-resistant forms of *Staphylococcus aureus* began to appear. These bacteria, once found only in hospitals, have now emerged in the general population.

*

Staph infection chronology

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Late 1880s: Scottish surgeon Alexander Ogston identifies a bacterium, *Staphylococcus aureus*.

1928: British scientist Alexander Fleming discovers the first antibiotic, penicillin.

1941: Penicillin becomes available in the United States and England. The first penicillin-resistant *Staphylococcus aureus* is reported a short time later.

Late 1940s: one-quarter of *Staphylococcus aureus* bacteria in hospitals are penicillin-resistant.

1958: Vancomycin, still considered an antibiotic of last resort, is introduced.

1959: The antibiotic methicillin is introduced.

1961: Doctors find the first cases of methicillin-resistant *Staphylococcus aureus*.

2002: Doctors find vancomycin-resistant *Staphylococcus aureus* in the United States.

Today: Over 95% of *Staphylococcus aureus* worldwide is penicillin-resistant and 60% is methicillin-resistant.

*

Sources: U.S. Food and Drug Administration, Princeton University, Chemical Heritage Foundation,

National Academy of Sciences, ActionBioscience.org

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