Los ANGELES -- Public health officials are investigating an outbreak of an aggressive, community-acquired, methicillin-resistant Staphylococcus aureus skin infection that has struck more than 1,000 people, including newborns, young athletes, healthy women, gay men, and prisoners in Los Angeles over the past year.

Federal officials said the outbreak of community-acquired methicillin-resistant S. aureus (MRSA) appears to be the largest ever reported in the United States.

Several unusual features of the cases have officials worried, including the fact that patients have included otherwise healthy, community-dwelling adults and newborns, as well as people with HIV, and male and female prisoners who share close quarters.

The infection appears on seemingly intact skin as "a little boil that very quickly looks very bad," said Dr. Elizabeth Bancroft, medical epidemiologist with the Los Angeles County Department of Health Services.

Very aggressive treatment is required, sometimes including surgical debridement and lengthy hospital stays for patients to receive intravenous antibiotics to which the organism is sensitive.

"We all knew MRSA was going to escape into the community we just didn't know how. The frightening thing is the virulence with which it happened," said Margie A. Morgan, Ph.D., a microbiologist at Cedars-Sinai Health System, where pulsed-field gel electrophoresis showed that samples from a dozen patients in Los Angeles shared a "virtually identical" genetic fingerprint.

In turn, isolates from her lab were found to be a clonal match with samples from an MRSA outbreak among gay men in New York City in 1997.

But while the initial outbreaks may have spread through skin-to-skin contact among gay men, community-acquired MRSA in Los Angeles appears to be infiltrating disparate populations.
When the Los Angeles Times first reported the presence of MRSA in the community's gay population in late January, Dr. Bancroft's office was inundated with calls from people, including healthy women with no risk factors, who said, "I had that."

Dr. Derek Jones, a dermatologist in West Los Angeles, said he has been seeing "explosive numbers of patients in my practice for many months."

Since he began culturing lesions about 6 months ago, he has diagnosed 50 cases, mostly in HIV-positive and HIV-negative gay men, but also in healthy heterosexual adults.

Despite a vigorous tracking effort and the launch of a case-control study, Dr. Bancroft said she could not yet characterize the magnitude of the outbreak. "I can't even begin to guess at the number of cases," she said during a telephone interview.

Dr. John H. Clark, chief medical officer for the Los Angeles County Sheriff's Department, confirmed that 928 inmates in his facilities were diagnosed with culture-positive MRSA in the last half of 2002, and 57 required hospitalization. Currently 106 inmates have culture-positive MRSA.

Many more suspected cases were seen in the jail population and were misdiagnosed as spider bites from February to June 2002, when public health officials were finally notified of a potential MRSA outbreak.

Outbreaks of MRSA disease in prisons and jails are not uncommon. In Mississippi prisons, for example, 59 inmates were diagnosed during 1999-2000.

However, one difference in the Los Angeles outbreak is that some inmates appear to be entering the jails with preexisting MRSA. Dr. Clark said 9% of affected inmates have developed MRSA lesions within 5 days of entering the jail, and 17% within 10 days. Most affected inmates have had compromised skin or immune systems, underlying illnesses, or significant chemical or substance abuse problems, he noted.

Two prominent infectious disease practices and a dermatology practice in Los Angeles can account for at least another 150 documented cases of MRSA since mid-2002, mostly in HIV-positive and HIV-negative gay men, but also in HIV-negative women. Dr. Bancroft said her department has confirmed MRSA in five healthy newborns and in several young men on an athletic team.

Dr. Peter Ruane, the infectious disease specialist credited with recognizing and reporting an apparent outbreak in his mostly HIV-positive patient population, said the lesions have an explosive onset and tend to recur despite treatment.

"It's very impressive the way they develop clinically. When a physician sees one for the first time, it kind of takes their breath away," said Dr. Ruane, who directs research at Tower Infectious Disease Medical Associates in Los Angeles, which has treated at least 40 patients with MRSA.

He described one patient who bumped his knee while moving furniture and within days developed a prepatellar abscess with extensive edema and erythema that extended from midthigh to midcalf.

"Usually a staph infection is a boil with a small amount of redness and a lot of pus. These are..."
very large, very nasty, invasive-looking lesions that are puffy and red, with extensive inflamed tissue surrounding them."

Not all patients have a history of a minor injury to the area that develops into an MRSA abscess, explained Dr. Ruane, although he suspects that the organism may be spread more readily on shaven skin or an area that the patient has scratched.