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| Reports on Vancomycin-Resistant Enterococci (VRE), | |

Abstract of Bay Area Study from

California Department of Health Services Surveillance

for Vancomycin-Resistant Enterococci (VRE),

San Francisco Bay Area, 1993-96.

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After conducting testing to determine the proficiency of hospital laboratories in detecting vancomycin resistance in enterococci, we initiated active laboratory-based surveillance for clinical isolates of VRE at 30 laboratories serving **33 general acute care hospitals in three San Francisco Bay area counties in January 1995**. Laboratories were surveyed by questionnaire for the occurrence of clinical isolates for 1993-94. Laboratories were capable of detecting high- and moderate-level resistance to vancomycin.

The number of hospitals reporting >= I patient clinical isolate was 1 (3%) in 1993, 7 (21%) in 1994, 31 (94%) in 1995, **and 33 (100%) in 1996**. The number of patient isolates increased from 20 in 1994 to 171 in 1995, and to 425 in 1996. The majority of isolates, 62% in 1995 and 57% in 1996, were from urine, and were not associated with serious clinical disease. However, the number of isolates from blood increased from 9 (6% of total) in 1995 to 44 (11.5% of total) in 1996. In the 20 laboratories reporting total enterococcal isolates tested for vancomycin susceptibility in 1995, 101 (1.3%) of 7521 isolates were resistant. These data show that VRE emerged and increased in number among many San Francisco Bay Area hospitals in 1994-96. The increasing prevalence of clinical isolation of VRE can be viewed as a sentinel event, **predictive of future increases in serious clinical infections unless measures are taken to prevent the spread of vancomycin resistance** in this area.

The San Francisco Examiner, Sunday, Sept. 14, 1997 - Page C1

Resistant bacteria on rise in Bay hospitals

Once-benign bug has mutated into potential killer

Lisa M. Krieger, MEDICAL WRITER

Overuse of antibiotics has created a **drug-resistant organism** in Bay Area hospitals that can lead to serious illness, even death, according to a new state study to be released Monday.

The bug, a once-benign gastrointestinal bacterium called enterococcus, is outsmarting every antibiotic in the therapeutic arsenal, including the once-formidable vancomycin.

First detected in Europe nine years ago, vancomycin-resistant enterococcus (VRE) has since migrated westward - and is **now present in 95 percent of surveyed hospitals** in San Francisco, Alameda and Contra Costa counties, up from 3 percent only four years ago, according to the study. "It has arrived," said the study's lead investigator Dr. Jon Rosenberg, a medical epidemiologist with the Emerging Infections Program of the California Department of Health Services.

The report reaches the same somber conclusion as dozens of others presented this weekend at the San Francisco meeting of the Infectious Diseases Society of America: **Antibiotics, once wonder drugs, don't help like they used to**. For most people, for most illnesses, some form of antibiotic still works, said experts.

But almost every human infection - including **malaria, tuberculosis, gonorrhea, pneumonia, even leprosy** - is now resistant to at least one major class of antibiotics, conference researchers report.

And some organisms, like VRE, are impervious to all drugs. Little can be done other than continue to fight whatever else ails the patient. This creates the ultimate medical nightmare: a runaway infection that cannot be treated.

"The horse is really out of the barn," said Dr. Lucy Tompkins of Stanford University Medical Center and chairwoman of the conference. "We have not been nearly vigorous enough in policy and process to implement the systems needed to prevent wide-scale (antibiotic) overuse." Of greatest immediate concern is not VRE but the **more deadly Staphylococcus aureus**. Before penicillin, four of every five people who contracted staph blood infections died. **Drug resistance may take us back to those days**, say experts.

Three cases of vancomycin-resistant staph have been reported in the past year - and experts at the conference believe that more cases are right around the corner. The antibiotic vancomycin, developed in 1958, has been considered the best weapon against bacteria that were no longer vulnerable to other drugs. As resistance to other antibiotics has increased, doctors have turned to vancomycin with growing regularity. But vancomycin, the last line of defense, is losing its punch.

"We're scraping around the bottom of the barrel," said Rosenberg. "This is predictive of future increases in serious infection, unless measures are taken to prevent the spread of vancomycin resistance." The number of VRE isolates in Bay Area hospitals has increased steadily, from 20 in 1994 to 425 in 1996, Rosenberg's study says. The bug was harmless until it mutated out of reach. In healthy people, it lives in the intestinal tract, causing no illness. But when turned loose in **emergency rooms, intensive care units and** **nurseries, it is dangerous - even deadly**.

"If you need a liver transplant, if you're critically ill with catheters, if you're immune suppressed - then there could be very serious consequences. If (the bug) enters your bloodstream, you could potentially die," said Rosenberg. Major medical centers like UC-San Francisco - which have a steady stream from other hospitals of very sick patients, many of them on long-term massive doses of antibiotics - are particularly vulnerable to VRE infection.

The hospitals do not experience one single outbreak, but many smaller clusters of infection caused by multiple strains of bacteria, said Rosenberg. He believes that the drug-resistant bugs originate elsewhere but **arrive here with sick patients, then quickly spread**. The growing prevalence of VRE is worrisome for another reason: Enterococcus and the far more deadly staphylococcus hang out in the same places - on surgical wounds, on the scalp, in fecal matter, **in hospital labs** and may exchange genes.

If enterococcus passes its resistance gene over to staph, there will be bigger trouble, said experts at the conference. **Super staph, once it gains a foothold, could claim thousands of lives**. Some bugs become more pathogenic for reasons besides resistance, said Dr. Michael Osterholm of the University of Minnesota. A frightening new strain of hantavirus in southern Argentina was found to be transmitted from person to person, rather than rodent to person, as seen in the United States.

Additionally, federal scientists at the conference will report on a **hyperviralent strain of tuberculosis** detected in rural Colorado between 1994 and 1996, transmitted through mere casual contact, Dr. Osterholm said Saturday night. The best way to combat these new waves of infections is to use antibiotics with much more care, according to experts at the conference. Antibiotics - particularly vancomycin - shouldn't be taken for diarrhea, colds or other nonbacterial diseases. And with rare exceptions, they shouldn't be taken in combination with other antibiotics.

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