THE WALL STREET JOURNAL.

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THE FRONT LINES

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FRIDAY, MAY 8, 1998

A Hospital Applies Teamwork to Thwart An Insidious Enemy

CHICAGO

YOU ARE surrounded by an invisible enemy. It strikes without notice at the worst moments. Your weapons only make it more powerful.

This is life in a big-city hospital, and the enemy is infection. Patients check in for routine procedures and get sicker, instead of better. Hospital-borne infections afflict nearly two million patients a year, of whom nearly 100,000 die. In a never-ending arms race, greater antibiotic use only causes the worst germs to spread further. Some bacteria have evolved resistance to every known antibiotic.

But as this epidemic worsens world-wide, a medical team here has reversed the trend. How? By conquering traditional communication boundaries within the workplace. Any organization besieged by outside forces can profit from the lesson.

Lance Peterson, a microbiologist and infectious-disease physician, moved to Chicago in 1992 and sensed a collegiality he'd never seen in big cities. That attitude was also evident at his new professional home of Northwestern Memorial Hospital, where he encountered another infection specialist named Gary Noskin. They had every reason to become rivals. But a shared passion for investigating infection instead threw them into a close research partnership.

Their collaboration was propitious. In 1992, a cancer patient became Northwestern's first victim of an insidious new strain of *bacterium enterococcus*, which causes a variety of infections, including the deadly septicemia. The new strain was immune even to the powerful antibiotic vancomycin, earning it the name VRE, as in vancomycin-resistant enterococci. Investigators found light switches, blood-pressure cuffs and stethoscopes colonized with VRE.

AS INFECTION spread inside the hospital, the two doctors launched a regular Monday morning meeting to plot countermoves. With all drugs powerless, their best hope was cutting off the germs' path between patients. "It's all about breaking the links of transmission," says Sandra Reiner, a nurse who participated.

To focus the attack, the team engaged an outside lab to analyze the DNA of infectious bacteria cultured from patients. Samples with identical genes share a common source, signaling a mini-epidemic instead of random outbreaks. By studying patients infected with the identical strain, the task force could close in on a piece of contaminated equipment or a staff group lacking the most aggressive infection-control measures. Some staffers initially were offended to have their practices questioned, but learning about the virulence of VRE invariably persuaded them of the need for elevated safeguards.

Candor was key. Hospital-borne infection, also called nosocomial infection, is a touchy subject in many institutions. Yet the Northwestern task force launched a wide-open dialogue, opening the Monday meeting even to equipment technicians, residents and visiting staffers from other