

Epidemic Ravages Caregivers; Thousands die from diseases contracted through needle sticks

San Francisco Chronicle; Sunday, April 13, 1998

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UNIVERSITY OF WISCONSIN HOSPITAL, MADISON, WIS., 1978

Dr. Dennis Maki, chief of infectious diseases, was unnerved.

On a winter morning a few weeks earlier, a urology technician was inserting an intravenous needle into a patient's arm when the device slipped, piercing the 55-year-old medical worker's finger.

Not long after, the technician fell seriously ill with [hepatitis B](#), and Maki suddenly realized his hospital -- and perhaps the rest of the country -- had a serious problem on its hands. "This totally innocent victim had become sick," he said, "and we had to try to understand why."

So he and nurse Rita McCormick began to do some detective work. Their groundbreaking research would sound the first alarm over a deadly epidemic of needle sticks that was striking down health care workers at a startling rate.

Over the next 20 years, the epidemic would ravage the nation's medical workers. Thousands of needle stick victims would die of AIDS, hepatitis and other blood-borne infections. Tens of thousands more would contract devastating diseases. Hundreds of millions of dollars would be spent every year on replacing and treating dying and infected workers.

And now, researchers fear, a new needle stick threat has been discovered: Untold numbers of female health workers may have suffered serious birth complications from transmissions of incompatible blood.

But it didn't have to happen. Needles with simple safety features -- often costing just pennies more to make -- were available at least 10 years ago. Today, however, few have reached the hands of health care workers, even at the nation's most technologically advanced institutions.

In a six-month investigation, The Chronicle has uncovered a chilling pattern of indifference and neglect within the nation's medical industry. Scores of interviews

and thousands of pages of documents show that the nation's leading needle manufacturer suppressed the market for safer needles, at times using tactics that have raised serious legal and ethical questions. Health care providers, under intense pressure to contain costs, balked at purchasing safer needles, calculating that it was cheaper to buy conventional needles than to save their workers' lives.

And, perhaps most troubling of all, government watchdog agencies failed to enact and enforce regulations that would have protected health care workers from danger.

"It's disgusting that we can allow people to die when we can easily prevent it," said Andrew Stern, president of the Service Employees International Union, the nation's largest health care workers' union.

"When a crane falls or a mine caves in, the government rushes to do something about it. But when health care workers are dying, it's invisible."

Two decades after Maki's unsettling discovery, the needle stick epidemic rages on. This year, the nation's 6 million nurses, doctors, laboratory technicians and hospital housekeepers will suffer 1 million needle injuries.

Thousands of them will get hepatitis and other lethal diseases. This is the story of an epidemic that could have been prevented -- how it emerged, why calls for action went unanswered and how health care workers were betrayed by the people who were supposed to protect them.

BECTON DICKINSON HEADQUARTERS, FRANKLIN LAKES, N.J.

Becton Dickinson and Company, a small medical device import business, was founded in 1897, about 50 years after the first hypodermic syringe entered the market.

Even then, medical experts realized they had a problem: Blood-contaminated hollow-bore needles could transmit infectious diseases with deadly efficiency.

Researchers would soon report cases of diphtheria, malaria and syphilis from needles. The variety of diseases would grow into the dozens, with herpes, [tuberculosis](#), even Ebola, joining the list.

By the 1960s, executives of Becton Dickinson knew that hepatitis B could be transmitted by needles -- through both the reuse of contaminated needles and through accidental needle sticks.

"It was probably the reason Becton Dickinson is a \$2 billion company today," said company executive Joseph Welch at a deposition eight years ago.

Welch explained that the soaring number of hepatitis B cases created a huge market for disposable syringes, which would make reusable needles obsolete. With cash raised from the first public offering of its stock in 1962, Becton Dickinson began producing tens of millions of the disposable products.

The new disposable syringes reduced infectious transmissions between patients but did nothing to decrease the accidental needle sticks that were spreading diseases to health care workers.

And the company's attention soon turned to making needles sharper, not safer.

The reason: In the late 1970s the Japanese firm Terumo had begun to flood the U.S. market with cheaper, sharper needles.

Within two years, Becton Dickinson overhauled its manufacturing facilities and was mass-producing razor-sharp needles that, in the words of a company advertisement, go through the skin "like butter. Every time."

UNIVERSITY OF WISCONSIN HOSPITAL, MADISON, WIS., 1981

Dr. Maki and nurse McCormick were ready to publish the first systematic study of needle sticks in the [United States](#).

They had studied 316 reported needle stick injuries over a 47-month period between 1975 and 1979. They investigated how the injuries occurred, who the victims were and how the number of accidents could be reduced.

The researchers were stunned by the high rate of needle sticks at their hospital -- an average of one out of every 12 workers reported being injured every year.

"But we believe," they wrote, "these figures underestimate the magnitude of the problem."

It was the first indication that needle sticks were a far more serious problem than anyone had known.

And, for the first time, health care workers were warned not to recap needles -- a practice Maki and McCormick found frequently led to needle sticks.

BECTON DICKINSON HEADQUARTERS, FRANKLIN PARK, LAKES, N.J.

Times were good for Becton Dickinson.

The company had overcome the threat from Terumo. Its strategy of signing needle distributors to exclusive, long-term contracts kept Terumo and other competitors at bay and helped establish Becton Dickinson as the world's largest

needle manufacturer. It is a position the company maintains today with an estimated 70 percent share of the U.S. market.

But by the early 1980s the dangers of needle sticks had begun to spawn new ideas for making needles safer.

In 1981, for example, Becton Dickinson engineer Michael Bennett filed a patent for a new needle shield. At the same time, his colleagues developed designs for oversized needle covers that make syringes easier to recap as well as devices for clipping off needle points.

But Becton Dickinson did not produce any of the devices, even though "the needle stick problem was obvious at that point," said former Becton Dickinson engineer Robert Stathopoulos, an independent consultant who now works for rival manufacturers.

"The company thought that customers would not pay extra money for any of these safety measures, and they would just cut down on profitability."

In a 1990 suit filed by a needle stick victim, Becton Dickinson Medical Director Edward Duffie offered a candid assessment of the company's response to the needle stick epidemic:

"I don't think we did anything, specifically."

SAN FRANCISCO GENERAL HOSPITAL, SAN FRANCISCO

Dr. June Fisher believes she would have been wasting her time if in the 1970s she had tried to persuade convince hospital administrators that needle injuries were a problem.

"If we had had a meeting on sticks at that point, no one would have come," said Fisher, a medical device expert who set up a health and safety project at San Francisco General Hospital in 1978.

"The approach would have been to modify behavior," she said, "to tell health care workers to be careful, to take their time."

That attitude persisted across the nation throughout the decade, undermining efforts to measure the epidemic's scope and leading hospitals to issue orders simply telling employees to be more cautious -- or worse, writing them up if they stuck themselves.

Some critics insist that the epidemic was ignored because of who the victims were: mostly nonunionized female or minority nurses, housekeepers and orderlies with little power.

"We are not considered important," laundry worker and multiple-stick victim Gwyen Spruill told a congressional committee in 1992. "Our work is not considered anything at all."

Even medical workers with clout rarely complained of their injuries, let alone demanded protection.

"A stick has always been viewed as a right of passage, a battle scar, a point of pride -- as in, "I've been stuck six times and never been infected," said Patricia Wetzell, a Texas doctor who contracted the AIDS virus from a needle stick in 1991.

"The attitude is that if you think about yourself and get protective equipment, you're a sissy."

FOOD AND DRUG ADMINISTRATION, ROCKVILLE, MD.

In 1976 lawmakers gave the [FDA](#) the authority to regulate medical devices. The agency's mandate was to ensure the "efficacy and safety" of such products.

But any items marketed before 1976 were exempt from review, which, in effect, allowed manufacturers to continue producing conventional needles. By 1983 the agency knew conventional needles could be made to be safer, because entrepreneurs had begun asking the agency to review new syringes with safety features.

But the agency took no action to compel the manufacturers of conventional needles to make their devices safer.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, WASHINGTON, D.C.

OSHA issued voluntary guidelines on hepatitis B to the nation's health care employers in 1983.

The agency's notice described the viral disease in detail and recommended work practices including hand washing and the use of a new hepatitis B vaccine.

But OSHA failed to mention the hazards of recapping needles or to convey the urgency of the needle stick problem.

CENTERS FOR DISEASE CONTROL, ATLANTA

By the early 1980s, CDC officials knew they had a serious problem with accidental needle sticks.

Thousands of health care workers were contracting hepatitis B from needle sticks every year -- and hundreds were dying.

In 1985, CDC officials came out with their recommendations to health care workers: Use gowns, gloves, masks and the hepatitis vaccine as protections against infection.

But by then, needle sticks were already spreading a new disease through hospitals and the ranks of health care workers -- a mysterious infection with no known cure that was killing its victims with brutal, tragic efficiency.

The appearance of the AIDS virus did what the hepatitis crisis could not: It put the government and the medical industry on alert.

"Had AIDS not happened onto the scene," testified Dr. Edward Duffie, Becton Dickinson's medical director, in a needle stick victim's 1990 lawsuit against the company, "little or nothing would have been made of the ... ongoing risks ... to the health care workers."

SINAI HOSPITAL, BALTIMORE

In February 1982, a 33-year-old housekeeper at Sinai Hospital in Baltimore was taking out the garbage when a discarded needle pricked the palm of his hand.

Fourteen months later, he checked into the hospital's outpatient center complaining of fever, chills, shortness of breath and a cough that wouldn't go away.

Tests were run; his history was checked. The final diagnosis: He had AIDS, and the only way he could have gotten it was from the needle stick a year before.

On June 12, 1983, the housekeeper died, leaving behind a 9-year-old child and a girlfriend six months' pregnant. A letter in the March 1984 issue of the medical journal *Lancet* noted that he was the first health care worker known to have contracted the AIDS virus from a needle stick. The news jolted the medical community. Hospitals and manufacturers began to rethink their passive responses to the dangers of conventional needles.

Still, Becton Dickinson was cautious. Standard needles had lifted the company to the top of the industry, and a sudden move toward alternative products could open the market to rival firms and erode Becton Dickinson's market share -- or worse, expose the company to lawsuits over its unshielded needles.

OFFICES OF DR. DAVID ATEFI, ROSSVILLE, GA.

On April 15, 1985, medical assistant Jenia Hamley was stuck in the left index finger while recapping a Becton Dickinson needle. Five months later, she tested positive for hepatitis B. Worse, Hamley had been five months' pregnant at the time of the stick, and she claimed the infection caused brain damage in her newborn son.

Hamley contended that she had merely followed the product's instructions, which recommended recapping before throwing the needle away. So she sued Becton Dickinson, arguing that its product was unreasonably dangerous.

The company responded that its instructions to recap the needle met industry guidelines in 1985 -- even though four years earlier the study by Maki and McCormick had specifically warned that recapping was a leading cause of needle sticks.

The company also argued that Hamley was a trained medical expert who needed no warning because she knew the dangers of needles better than the company did. It is a defense the company uses to this day.

Becton Dickinson settled the case confidentially and denied liability.

ADMINISTRATIVE OFFICES, SAN FRANCISCO GENERAL

Managers at San Francisco General Hospital were in the forefront of treatment of AIDS patients, opening the nation's first full AIDS ward in 1985.

But they responded to employee concerns about contaminated needles by merely urging workers to use more caution around needles and to slow down.

"Here was the premier AIDS center in the world, and there was such resistance -- they just kept downplaying the risk to health care workers," said John Mehring, a health and safety officer for the Service Employee International Union.

Mehring and his union, which represented more than half a million medical workers across the country, finally realized that the battle for greater needle safety would never be won piecemeal, hospital by hospital.

So in September 1986, with several other unions that represented health care workers, SEIU petitioned OSHA to issue emergency regulations that would force hospitals to provide greater protections for their employees.

Thirteen months would pass before the agency finally responded to the petition. On Oct. 22, 1987, Assistant Labor Secretary John Pendergrass rejected it, stating that there was insufficient data to grant the emergency request.

Instead, OSHA said it would develop tough new workplace regulations to protect health care workers -- a process that would involve sending notices to 600,000 employers, gathering comments and holding public hearings. The process would be lengthy, but health care workers were optimistic that the agency was at last paying attention to the needle stick epidemic. WARD 86

SAN FRANCISCO GENERAL

In July 1987, a young nurse who asks to be identified only as Jane Doe was finishing the 11th hour of her 12-hour shift in the AIDS unit at San Francisco General.

She was exhausted as she withdrew an unsheathed needle from an intravenous line connected to a patient.

Safe line connectors with recessed needles were already in use at hospitals across the country. But they were unavailable at San Francisco General, where intravenous lines were still joined with a hypodermic needle held by adhesive tape.

As Jane Doe held up the intravenous fluid bag, the needle went through the bag and into her finger. "I think I said, "Oh, shit," she said, recalling the horror of the moment. "I was struck by the irony that in my three years as a nurse, I never had a needle stick."

Six weeks later, Jane Doe tested positive for the AIDS virus and became the first documented case of a medical worker at the hospital to be infected with HIV through a needle injury. She was the 13th confirmed case in the nation.

ST. JOSEPH'S HOSPITAL, ORANGE, CA.

Nurse Norma Sampson was concerned about the constant exposure of health care workers to hepatitis B through needle sticks.

"Then, when I read about AIDS," she recalled, "I thought, "Oh, boy, this is worse than hepatitis. People will surely die."

So Sampson came up with her own solution: A syringe with a simple plastic shield that could slide over a needle. With the help of two relatives and a South Carolina engineer, Sampson refined her product. In 1987, Becton Dickinson bought the rights to the device. The manufacturer now had the technology in hand to produce a safer product --one that could slash the number of needle sticks and save thousands of health care workers' lives.

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