

ZERO GROWTH



Mark Raaber/Herald

The water purification system allows Dr. Dwight Heberer and dental assistant Jeanie Meador to treat patients in a safe environment.

Dentists' goal is to remove bad bugs from water

BY MARK RAABER
Staff Writer

In the battle against bacterial contamination of waterlines, three local dentists have recorded a big zero and they are very pleased.

For Drs. John Blattner, Dwight Heberer and Michael Murphy that zero represents the gold standard for water purity. And it contrasts greatly to days not long ago when the readings on contaminant levels in their waterlines reached to the tens of thousands.

In a feature story in the June issue of *Illinois Dental News*, the journal of the Illinois State Dental Society, the group credits its success at reducing harmful contamination levels to a new water purification system recently

installed in its Cahokia and Waterloo offices.

"People might ask, 'Why should I worry about water the dentist squirts into my mouth; it comes from the city and it is treated, isn't it?'" Blattner said.

"That would be true if we used this water every day. But in some offices, where the dentist does not work every day, or in a practice where some treatment rooms are not used regularly, water may sit in lines within the equipment for several days.

"Because the water is stagnant, because it is dark, because it is a warm room, bacteria can grow in those lines, so there is a health risk. Legionnaires' disease, pneumonia, streptococcus, staphylococcus are just some of the bad bugs

that have been found in dental office waterlines."

Blattner said even he may have experienced the ill-effects of contaminated water in his office. He thinks a mysterious respiratory infection he suffered through a couple of years ago may have come from breathing bacteria-contaminated mist emanating from his dental instruments.

An ethical responsibility

In 1993, the Centers for Disease Control and Prevention urged dentists to institute infection control practices to prevent oral fluids from contaminating waterlines. In the mid-1990s, the American Dental Association (ADA) issued guidelines setting specific limits on the amount of bacteria

patients should be exposed to through water used during non-surgical dental procedures. It also challenged manufacturers to develop methods for controlling contaminants in waterlines.

"We have known for 30 years dental waterlines are contaminated and the ADA has always maintained there was a need to meet its guidelines," Blattner explained. "But they were just guidelines, not rules. No law says a dentist has to do this, so only about 10 percent of dental offices test their water."

"All the reports of problems resulting from contaminated water got me thinking we should meet the guidelines. After all, we give the patients

See DENTIST, page 3A

Dentist

Continued from page 1A

the impression our office is sterile.

"We wear masks, gloves and gowns. We drape everything with plastic and we sterilize our instruments. The treatment areas are equipped with laminar air flow to force contaminated air away from the dental chairs to vents near the floor. We even have our patients rinse with a mouthwash to decrease their bacterial count. So it doesn't make any sense to blow a bunch of bacteria into the patients' mouths."

Blattner and his partners agreed they had an ethical responsibility to do everything possible to ensure their patients' well being. So the trio set out looking for equipment to free their waterlines of bad bugs. They found the Water-clave Water Purifier.

"At the time, the system was being perfected by its inventors, a St. Louis dentist and his brother-in-law, an engineer who works on water treatment plants," Blattner explained. "So we became a testing site for the prototype when they sought FDA approval. The data we supplied was used to verify the efficiency of the equipment."

After the system received the government's OK, the group bought the first two units produced.

Exceeding the guidelines

"We think we purchased one of the top systems in the country," Blattner said, pointing out, while other systems comply with the guidelines, they are labor-intensive and often fail.

"With this system we exceed the ADA guidelines by a great deal, and it compliments the other efforts we put forth to give patients the best possible treatment with the least exposure to harmful bugs.

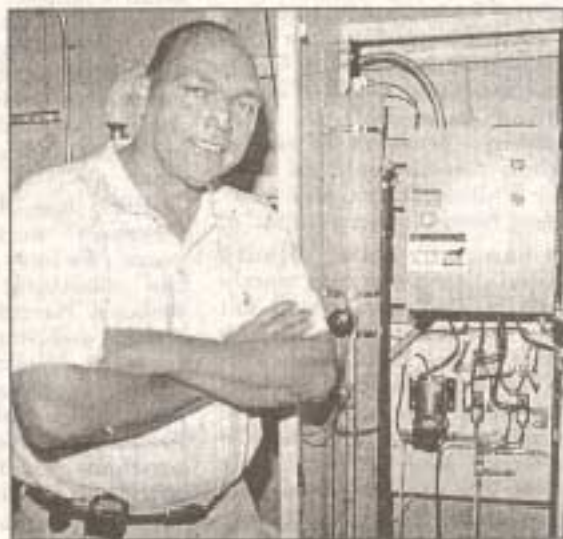
"This system decreases the bioload (the scum-like film that forms inside pipes) in our waterlines and therefore decreases our patients' exposure to bacteria," he explained.

Using an in-line autoclave (a superheated pressurized container), the system sterilizes water by heating it to 270 degrees Fahrenheit for 25 minutes. Next it bleeds off gasses freed during the heating process and lowers the oxygen level in the water. Then it quickly chills and pressurizes the water.

"Because there is less oxygen for aerobic bacteria to live in, even if the system became contaminated it would maintain its integrity," Blattner explained. "It does not have the environment to support the growth of bacteria."

"To help ensure we are providing zero bacteria water for our patients, we test the system before shutting it down each evening. And every six weeks we send samples of our water to an independent lab in California to make sure we don't have what they want us to get rid of," Blattner said, explaining 12 samples are taken from various points throughout the offices for testing.

When the group first began receiving lab



Dr. John Blattner says his group's new water purifier helps its offices exceed ADA water quality standards.

results, they became concerned because reports on bacteria levels consistently came back as zero. They wondered if the lab was even testing the water. To test the lab, Blattner included with one shipment of samples a vial of water from a toilet known to be contaminated.

"They called the day after they got the results and said it was contaminated. They were shocked because they had not gotten any counts on previous samples," he said. "So they passed our test and we trust them."

Safety conscious

"Public safety is a big issue here and that is how we approach it for our patients," Blattner pointed out. "When a new patient comes to our office we give them a tour highlighting the efforts we make to ensure their safety."

In addition to having the staff thoroughly versed in aspects of safety, from being trained in cardiopulmonary resuscitation to being drilled in the importance of maintaining a sterile environment, Blattner and his partners have taken a proactive approach to other aspects of environmental safety.

When the group was preparing to open its Cahokia office, they contacted the state's occupational safety agency and requested an inspection.

"They came in and found a few things we needed to straighten out," he said. "And because of the request, we got a letter of recognition from the state dental society. We are the only dental office ever to have made such a request."

"We do all of these things because, when a patient sits down in our dental chair, we want them to know this is a safe place," Blattner said.