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STERILOX THE TOTAL SOLUTION

Dental clinical study confirms efficacy of Sterilox/Aqualox

The Sterilox system was evaluated at a two-chair-plus-hygienist practice in Bedford, UK, over a period of 11 weeks. The study measured:

• *Pseudomonas aeruginosa*
• Bacteria 22 degrees C (71.6 degrees F)
• Bacteria 37 degrees C (98.6 degrees F)

Prior to the trial, the degree of contamination was measured and samples were analyzed by the Department of Microbiology, John Radcliffe Hospital, Oxford.

Methodology

On commissioning, all dental unit water lines (DUWLs) at each chair were flushed through, or "smoked," with 100-percent Sterilox at 200-250ppm at pH5-6 for 2 hours. Next, the system was flushed through with Aqualox at 5ppm. The lines were then retested for bioburden.

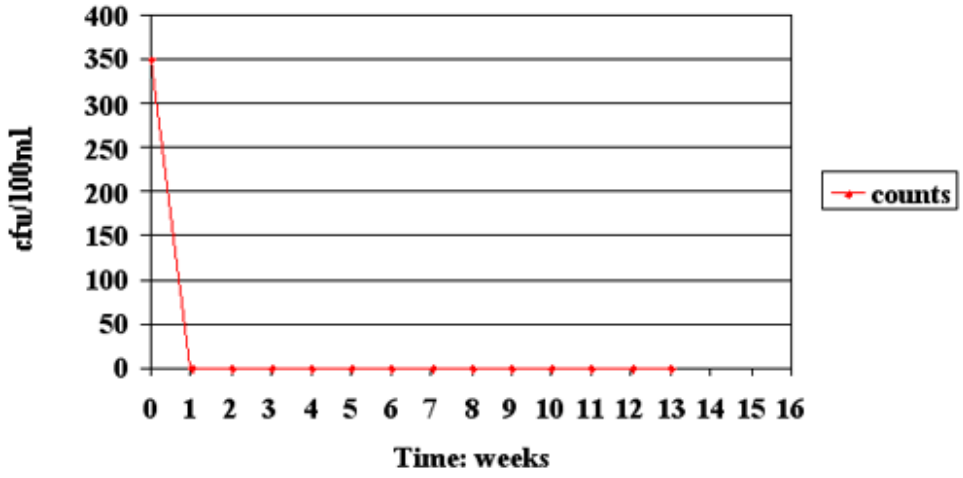
Following the initial flushings, the units were run using Aqualox at 5ppm for potable water.

DUWL water quality was evaluated weekly. Samples were taken on Mondays during the one-hour lunch break, on the assumption that the weekend would allow the longest time for any possible recolonization. Time constraints limited sampling to one line of each of the three chairs.

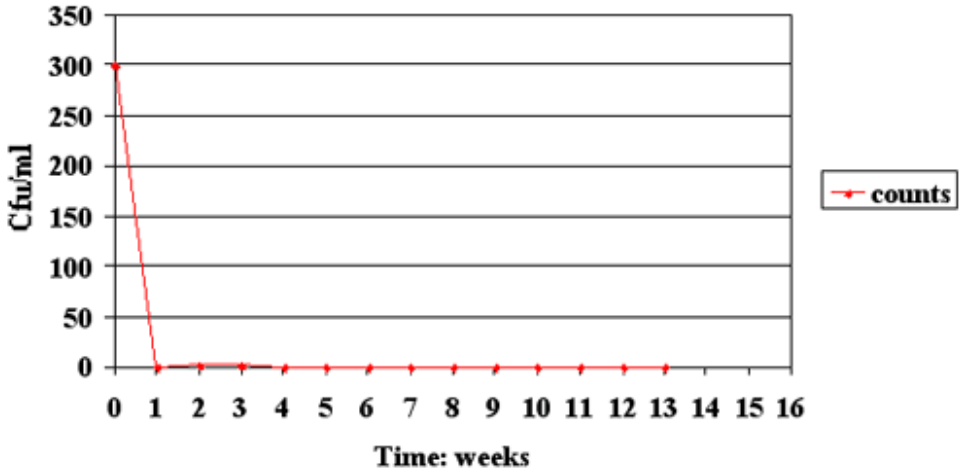
Findings

Hygienist Chair

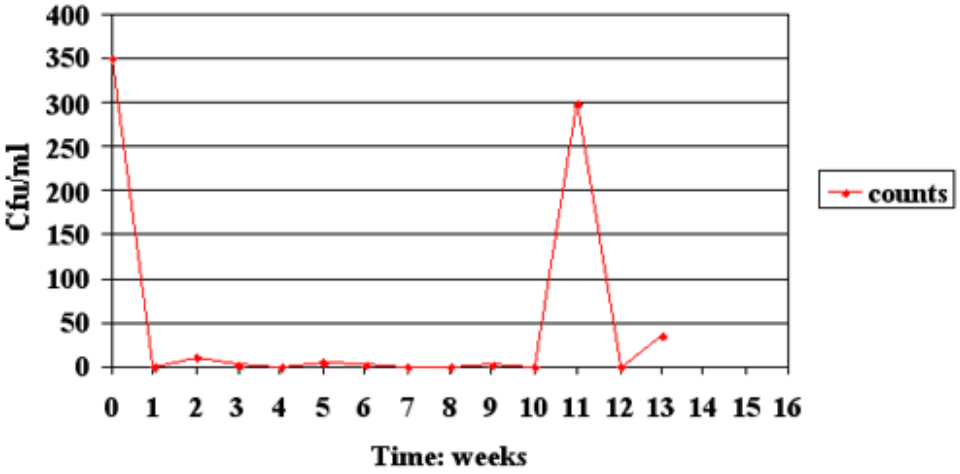
NOTE: The trial on the hygienist's chair was shorter than the rest of the study as the unit was on loan from the manufacturer.



Pseudomonas aeruginosa: The pre-trial reading was >300cfu/ml. After the initial flush with 100% Sterilox, it was reduced to 0cfu/ml and remained at that level.

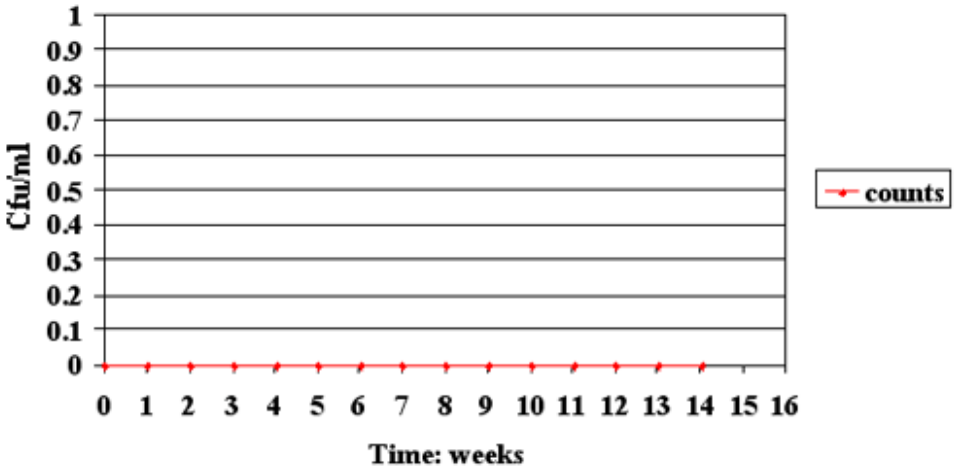


Bacteria 37°C: The pre-trial reading was >300cfu/ml. After the initial flush with 100% Sterilox, it was reduced to 0cfu/ml. It remained below the guideline level of 10cfu/ml throughout the study.

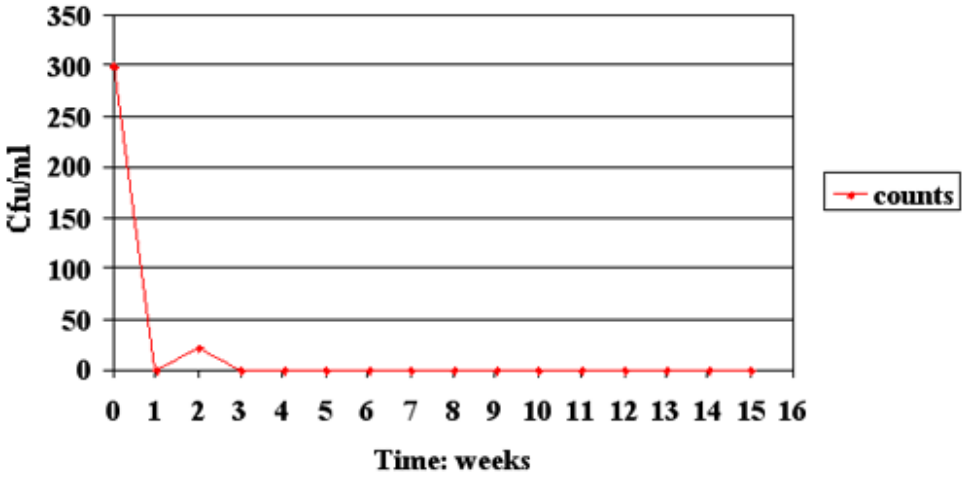


Bacteria 22°C: The same pattern was seen for non-pathogenic bacteria. The high count during week 11 was found to reflect contamination from the three-in-one handpiece, which was removed and autoclaved.

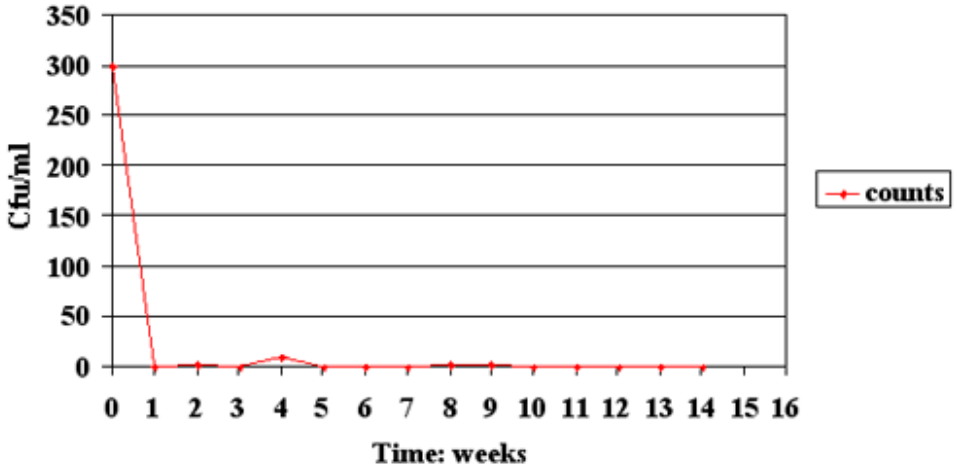
Chair 2



Pseudomonas aeruginosa: None present.



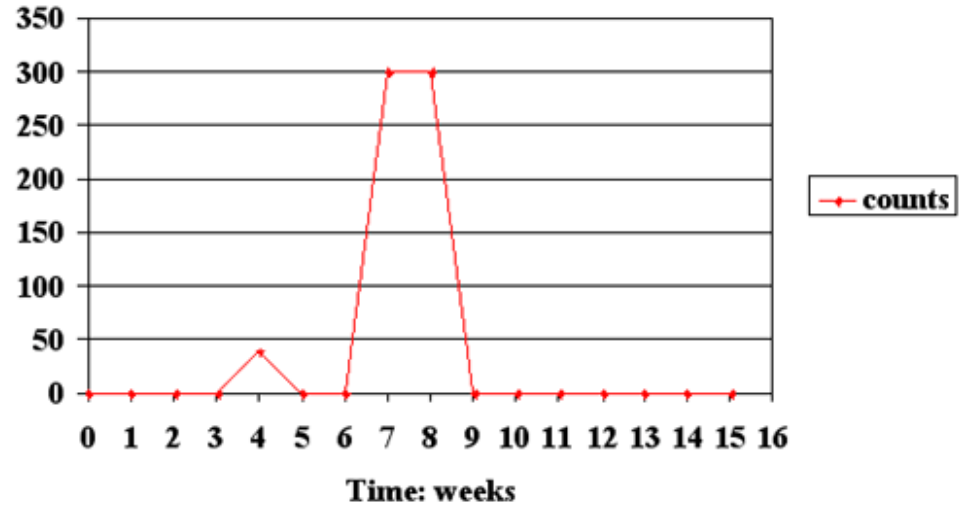
Bacteria 37°C: The pre-trial reading was >300cfu/ml. After the initial flush with 100% Sterilox, it was reduced to 0cfu/ml and remained at that level since week 3.



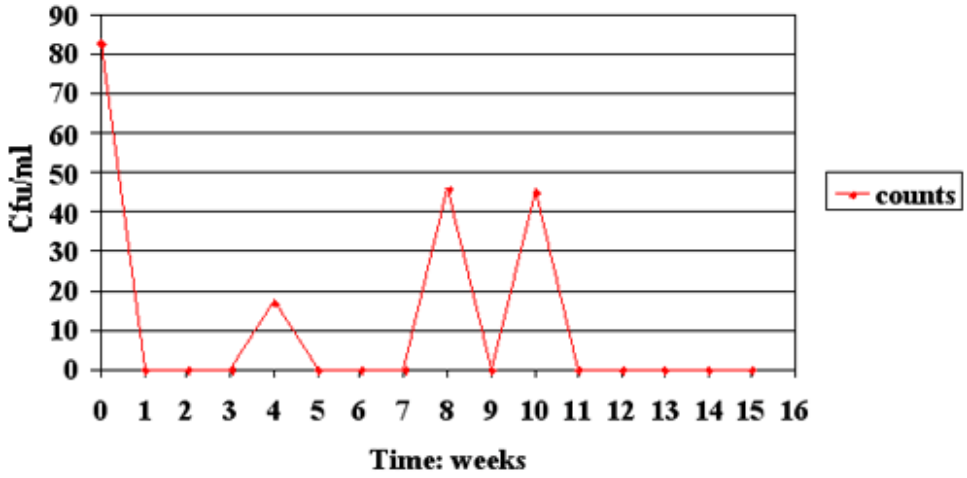
Bacteria 22°C: The pre-trial reading was >300cfu/ml. Since the initial flush with 100% Sterilox, the count has remained below the guideline level of 100cfu/ml and has remained at zero since week 5.

Chair 1

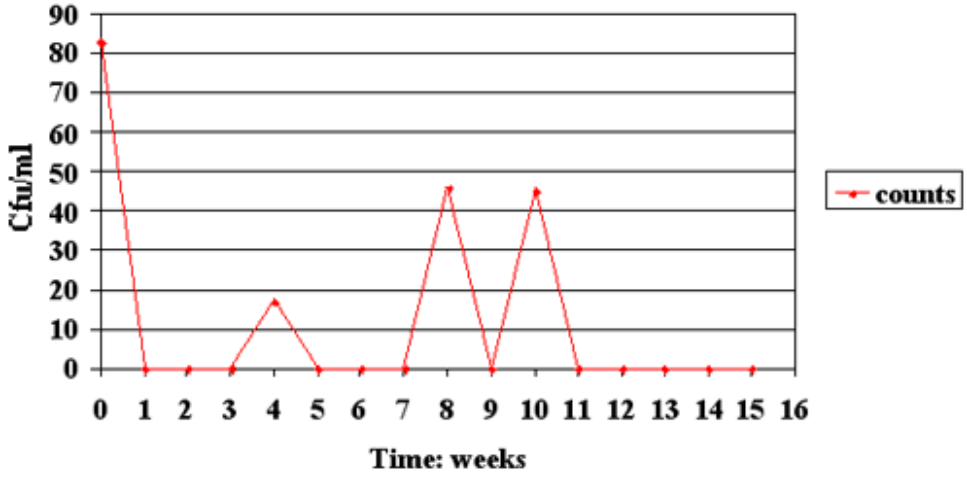
NOTE: Initially, this chair was difficult to control. It was postulated that the handpiece might be the source of contamination, as there was no reaction time between when the Aqualox contacted the contaminated handpiece and when it passed into the assay bottle, which contained sodium thiosulphate as an inhibitor. During week 9, the handpiece was removed, dismantled and autoclaved. It was refitted for week 10.



Pseudomonas aeruginosa: None present at commencement. At week 5, 4cfu/ml were present. The system was flushed prior to testing on week 6. The count returned to 0 and was maintained through week 7. The counts for weeks 8 and 9 were TNTC.



Bacteria 37°C: The pre-trial reading was 83cfu/ml. After the initial flush with 100% Sterilox, it was reduced to 0cfu/ml. The pattern followed that for *pseudomonas* until the handpiece was autoclaved. After week 10, the level remained at 0 cfu/ml.



Bacteria 22°C: The pre-trial reading was >300cfu/ml. After the initial flush with 100% Sterilox, it was reduced to 0cfu/ml. The pattern followed that for *pseudomonas* until the handpiece was autoclaved. After week 10, the level remained at 0 cfu/ml.

Conclusions

The application of Sterilox as described above successfully controlled both pathogenic and non-pathogenic bioburden initially present in the DUWL system at all three chairs in this practice. As seen in Chair 1, special attention must be paid to cleansing the handpieces separately to ensure that otherwise clean water leaving the DUWL system does not become contaminated at the handpiece.

Catholyte - MSDS
Sodium Chloride Solution - MSDS
Sterilox, Dental Unit Water Line (DUWL) Biocide - MSDS

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