



## The End Stage Renal Disease Network Of Texas, Inc.

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### MEMO

To: Facility Administrators, Medical Directors, Head Nurses, & Chief Technicians  
From: Angie Wieler, MSN, RN, CNN  
Quality Improvement Coordinator  
Subject: Vinegar Use in Hemodialysis  
Date: November 29, 2007

This is to alert you to a recent event in the community where vinegar was found to be causing serious machine issues and bacterial contamination.

**Basic Information:** Vinegar is made using biological processes that result in the action of harmless microorganisms (yeast and “Acetobacter”) that turn sugars into acetic acid. Although these microorganisms are *harmless when ingested*, they are *deadly when introduced into the bloodstream*. The vinegar contains bacteria that can form a slimy mass called “Mother of Vinegar”. “Mother” is actually a cellulose (a natural carbohydrate which is the fiber in foods like celery and lettuce) produced by the harmless (if ingested) vinegar bacteria. Most manufacturers pasteurize their product before bottling to prevent these bacteria from forming “mother” while sitting on the retail shelf<sup>1</sup>. Some brands of vinegar have a tendency to produce these bacteria, so caution is required when using this product for machine maintenance.

**The Problem:** The “Mother of Vinegar” slime can inadvertently be pulled into the machine through the wands and then into the dialysate pathway. Once in the pathway it will move along until, hopefully, it is caught in the internal machine filter. However if the slime advances to the filter it will clog the filter and cause many maintenance issues. Additionally and more importantly, the slime can also release gram-negative bacteria into the dialysate pathway potentially exposing the patient population to serious infections.

Vinegar is frequently used as an acetic acid in dialysis centers as to prevent bicarb precipitate from building up in the bicarb or dialysate lines. Facilities using vinegar for machine maintenance should exercise extreme caution in the use and storage of the vinegar to prevent bacterial slime build-up. We recommend you review your HD machine maintenance manual and/or contact your machine vendor for their recommendations on how to safely use vinegar during machine cleaning. Also, please refer to page 2 of this fax for General Guidelines for Vinegar Use in Hemodialysis.



## General Housekeeping Guidelines for Vinegar Use in Hemodialysis

- 1) Be sure to inspect the vinegar prior to use – check for slimy or gooey substances or globs of thick material “Mother of Vinegar” in the liquid.
- 2) Check to make sure the vinegar does not have a bad smell – a bad odor is a sign that the vinegar is no longer useable and should be discarded immediately.
- 3) Ensure all wands are thoroughly cleaned and decontaminated after each use to remove potential bacterial growth on the wands.
- 4) **NEVER** pour leftover amounts of vinegar into one communal bottle or container – **ALWAYS** discard the leftover portions.
- 5) Keep the vinegar tightly closed between uses to prevent excessive bacterial growth in the liquid.
- 6) Never leave multiple jugs or open bottles of vinegar standing around. Open only as much bottles, as you will need for the day.
- 7) Use proper Personal Protective Equipment (PPE) when using the vinegar product, to prevent harm to you and to prevent contamination of the vinegar container.
- 8) Take precautions to prevent introduction of other bacteria into the vinegar.
- 9) **NEVER** store bleach and vinegar in the same cupboard or area. If accidental mixing of the two would ever happen the mixture would form chlorine gas.
- 10) If you are having issues with frequent clogging of the internal dialysate pathway filters check to see what the practice patterns for vinegar use are within your facility.