Back To The Future
With Dialyzer Reuse

“To reuse or not to reuse is no longer the question, especially for small chains and independent providers” according to an article in the April 2010 edition of Renal Business Today. The article titled Surviving the Coming ESRD Bundled Payment: Should Facilities Who’ve Stopped Dialyzer Reprocessing Consider Returning To the Practice goes on to ask, “The question now is, if you’re not reusing, how soon can you start?” and “If you are reusing, how can you make your program more efficient and profitable?”

Joe Atkins and Cheryl Harter, the authors of the article, are both practitioners in the dialysis field. Joe Atkins was CEO of the Shelby County Kidney Center in Sidney, Ohio, and is presently CEO of Medical Concepts & Innovations, a dialysis consulting company based in Ohio. Cheryl Harter is the charge nurse at the VA Dialysis facility in Dayton, Ohio. The authors write that the “safety and efficacy of dialyzer reprocessing has been proven repeatedly by the way of unbiased research.” The authors continue by emphasizing that for those facilities that have moved away from reuse “the practice needs to be revisited, particularly in the light of new ESRD bundled payment, which, most likely, will be lower than what we are getting today, and for the fact that reuse continues to bring positive benefits to our patients.”

The authors discuss the current state of anti-coagulation therapy, quality of therapy delivered by multiple-use vs. single-use dialyzer models, economic effects of reprocessing, and the “green” aspects of reuse vs. disposable dialyzers.

Adequate anti-coagulation: how do you know?

Clotting studies are rarely, if ever, still carried out in most chronic dialysis facilities and, as a result, “providers have lost our measuring stick for heparin efficacy during hemodialysis.”

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Heparin administration is now evaluated using empirical evidence, and “there is no way of knowing whether heparin doses are adequate enough to keep a patient’s blood therapeutically anti-coagulated.” A dialyzer that appears to have clear fibers after treatment does not mean that anti-coagulation is adequate. Many dialyzers that appear to have clear fibers have failed the 80% cut-off on the volume test when run on the Renatron® reprocessing station. Without reprocessing you will not be sure if your patient is or is not adequately heparinized until the results of their monthly Kt/V and URR drop and are reviewed.

Affording the best

The introduction of “inexpensive, but low-performance dialyzers” was one of the primary reasons that many facilities left reuse. The parameters that affect a dialyzer’s overall performance, such as surface area and membrane pore size, tend to decrease “in the case of cheap dialyzers.” According to the authors, to make up for poor dialyzer performance you may have to increase treatment time resulting in increased staff operational costs. Saving money up front on “economy” dialyzers may end up increasing costs.

“Without dialyzer reprocessing, smaller facilities and chains would not be able to afford the “best” (larger) dialyzers.”

Profit center and/or means of survival?

With bundling for ESRD services beginning in 2011 and all the uncertainties bundling brings, the authors claim that dialyzer reprocessing can be looked at as “a silver lining to this dark cloud.” Reprocessing can help dialysis providers “position themselves so they can not only survive, but succeed, in the coming bundled-rate era.”

Opportunity to go green

Reprocessing reduces bio-hazard disposal costs and the quantity of raw materials required to manufacturer all of the disposable dialyzers.

“Dialyzer housings and membranes are created from petroleum and natural gas,” and if the 40 – 45 percent of the facilities that reprocess dialyzers stopped reuse we would be contributing to “further pollution of the planet,” and we would be contributing to the increased consumption of “finite, non-renewable resources.”

If reprocessing were eliminated, we would need to dispose of “8.2 million additional pounds of bio-hazardous material annually.” The reprocessing of multiple-use dialyzers “clearly reduces bio-hazardous disposal costs by more than half.”

Patient and financial wellness

The authors dispel the claim by some that dialyzer reprocessing contributes to poor care. In fact, their experience shows just the opposite! They state that “in a facility which averaged 30 reprocessings per dialyzer, the average patient’s Kt/V was 1.76 with 100 percent of the patients exceeding the DOQI guidelines,” and “patient outcomes far exceeded CMS’ expectations in spite of the fact that there were a higher number of diabetic, cardiac and elderly patients.”

The upcoming ESRD payment bundling will include medication costs, laboratory costs and cost of disposables with limited adjustments to the rate. The authors state that an effective dialyzer reprocessing program “can provide patients with a higher level of wellness. It is good for your patients, good for your bottom line, and last, but not least, it’s definitely good for the environment.”

Reference:
Renalog® RM reports give you options to reduce the number of logs, binders and folders you may now be accumulating. Renalog RM will electronically retain information and allow you to track and print reports for a variety of activities that are currently recorded in manual hard copy logs and forms. Much of this information is retained in Renalog RM and can be printed out in paper copy on a weekly or monthly basis, or any time period you choose. In the Audit section of Advanced Reports you can print out reports that record the daily Calibration Verification Log, daily Water Pressure Log and daily Sanitize Log.

The Active Patient Detail History of Failed Dialyzers report includes:

- Patient name
- Patient ID number
- Dialyzer number
- Model number
- Dialyzer Lot number
- Start volume
- Minimum volume
- Renatron ID number
- Program cycle
- Current volume after each reprocessing
- Number of dialyzer uses and reprocessings
- Date and time of each reprocessing
- Technician who processed dialyzer
- Failure description
- Total number of uses and reprocesses
- Failure date and time
### By The Numbers 2010

| Approximate number of chronic hemodialysis patients in the U.S. | 400,000 |
| Number of treatments per year for the average chronic hemodialysis patient. | 153 |
| Number of single-use dialyzers that would be needed to treat all chronic hemodialysis patients in the U.S. for one year. | 61 Million |
| Approximate dollar amount of sales, this year alone, which would be generated by hemodialyzer manufacturers if all patients in the U.S. were treated using single-use dialyzers at $9.50/dialyzer. | $581 Million |
| Approximate dollar amount of sales, this year alone, which would be generated by hemodialyzer manufacturers if all patients in the U.S. were treated using multiple-use dialyzers at $18.00/dialyzer. (Re-use average 15) | $73 Million |
| Approximate dollar savings in dialyzer purchases, this year alone, if all patients in the U.S. were treated using multiple-use dialyzers. | $508 Million |
| Approximate weight, in pounds, of a single-use hemodialyzer before it is thrown away as medical waste. | 1.25 |
| Amount of medical waste, in pounds, that single-use would generate in the U.S. in one year. | 76 Million |
| The approximate number of dialyzers (at a 5% annual growth rate) sitting in the ground, or being incinerated, in the U.S. by the year 2035 if we eliminated reuse. | 3.1 Billion |
| The half-life of a synthetic fiber single-use dialyzer discarded in a landfill. | 1/2 of FOREVER |
| Percentage of a synthetic fiber hemodialyzer’s components that come from oil. | 100% |
| 2002 average annual crude oil price/barrel, in 2010 dollars. | $27.46 |
| 2003 average annual crude oil price/barrel, in 2010 dollars. | $53.92 |
| April 7, 2010 crude oil price/barrel, in dollars. | $86.52 |
| Future price of an oil-based single-use hemodialyzer, taking into account an unknown increase in the price of a barrel of oil. | ? |

### Renatron® Service & Maintenance Seminars

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- Renatron specifications and operational procedures
- Renalin® description, specification, dilution, handling instructions and testing
- Calibration and maintenance lab
- Performing calibration and maintenance procedures
- Hydraulic schematic and program outlines
- Hands-on troubleshooting using hydraulic schematics
- Troubleshooting techniques and repair lab

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