

HEMODIALYSIS CPMS IV AND V: RESULTS FROM THE PILOT-TEST OF THE FACILITY QUESTIONNAIRE, 1999-2000



Supplemental Report #2

2000 ESRD Clinical Performance Measures Project

The Health Care Financing Administration

March 2001

INTRODUCTION

In 1998 the Health Care Financing Administration (HCFA), through a contract with PRO-West a Seattle-based private non-profit health care quality improvement organization, developed sixteen end stage renal disease (ESRD) clinical performance measures (CPMs) based on 22 of the National Kidney Foundation Dialysis Outcomes Quality Initiative (NKF-DOQI) clinical practice guidelines. This activity was undertaken to partially respond to the Balanced Budget Act of 1997 that required HCFA to develop a method to measure and report the quality of dialysis services under the Medicare program. The CPMs that were developed were similar to the indicators collected for the ESRD Core Indicators Project and in 1999, the Core Indicators Project and the CPM project were merged and the project is now known as the ESRD CPM Project. Information about the development and pilot testing of these CPMs can be found in the 1999 Annual Report, ESRD Clinical Performance Measures Project.¹

This Supplemental Report describes the results of two CPMs that are not included in the 1999 and the 2000 ESRD CPM Annual Reports: Hemodialysis Adequacy CPM IV - Method of Post-Dialysis Blood Urea Nitrogen (BUN) Sampling and Hemodialysis Adequacy CPM V – Baseline Total Cell Volume Measurement of Dialyzers Intended for Reuse. To assess these two CPMs, a one-page Dialysis Facility questionnaire was developed to collect information about the dialysis facility's policies, procedures and practices. In 1999 and again in 2000, the questionnaire was distributed to approximately five percent of facilities that had one or more patients selected for the adult, in-center hemodialysis sample for study years 1999 and 2000. The questionnaire contained questions regarding 1) the written facility policy for the timing of the post-dialysis blood urea nitrogen (BUN) sample collection and any audit activity of this policy during the calendar year of the study period; and 2) whether or not the facility reprocessed or reused dialyzers, and if there was reprocessing, the proportion of reprocessed dialyzers for which total cell volume (TCV) was measured prior to the dialyzer's first use.

Hemodialysis Adequacy CPM IV - Method of Post-Dialysis Blood Urea Nitrogen (BUN) Sampling, which is based on NKF-DOQI Hemodialysis Clinical Practice Guidelines No. 8 recommends the "slow flow or stop pump" techniques as the method for post-dialysis blood sampling.² Hemodialysis Adequacy CPM V – Baseline Total Cell Volume Measurement of Dialyzers Intended for Reuse, which is based on NKF-DOQI Hemodialysis Adequacy Guideline No. 11 addresses the dialyzer reuse issue by stating that if a hollow-fiber dialyzer is to be reused, the TCV of that hemodialyzer should be measured prior to its first use. Batch testing and/or use of an average TCV for a group of hemodialyzers is not an acceptable practice.² The Association for the Advancement of Medical Instrumentation (AAMI) recognizes that the best method for determining TCV is to measure the volume prior to the first use of the hemodialyzer. The guidelines state that "whenever possible, the user measure the original volume of each hemodialyzer prior to the first patient use and record this value as the reference TCV (reprocessing volume) for all subsequent reprocessing."³

Does your facility reuse hollow fiber dialyzers?
Does your facility measure the total cell volume of the dialyzers intended for reuse prior to their first use?

This report describes the findings from the pilot testing of these questions over the past two study years.

METHODS

Approximately five percent of all facilities that had one or more patients selected for the adult in-center hemodialysis sample during study years 1999 and 2000 were included in the facility samples for these study periods. Facility staff completed a one-page questionnaire (Attachments 1 and 2) and returned the completed form to their Network office. The questions on this form were slightly modified for the second data collection effort during study year 2000. For both study years, respondents were instructed to select only one answer for the facility's written policy for the timing of post-dialysis BUN sampling. Respondents were instructed to "check all that apply" for the responses to how facility staff measured TCV for reprocessed dialyzers at their facility.

Do you know your facility's policy for the timing of post dialysis blood sampling?
Does your facility audit staff adherence to the policy?

Each study period, Network staff entered information from these completed forms into a computerized database. Each study period, the 18 individual Network databases were aggregated and forwarded to HCFA for analysis.

RESULTS

1999 Study Period

Post-Dialysis BUN Sampling Policy and Audit

175 facilities were included in the sample; 100% submitted completed forms to their respective Network. 97% (170/175) of facilities reported the presence of a written policy for post-dialysis BUN sampling (Table 1).

73% (124/170) of facilities with a written policy reported this policy states post-dialysis BUN sampling is to occur 15 to 60 seconds after slowing or stopping blood flow. 3% (5/175) of facilities reported having no written policy regarding the timing of post-dialysis BUN sampling.

During the calendar year 1998, 39% (67/170) facilities reported conducting an audit of adherence to the facility's written policy.

Table 1: Written policy for the timing of post-dialysis BUN samples reported by facility

	n (%)
Facility's written policy –1999 study period	
TOTAL	175(100)
immediately, without slowing/stopping blood flow	0 (0)
immediately after slowing/stopping blood flow	14 (8)
15-60 seconds after slowing/stopping blood flow	124 (71)
1-2 minutes after slowing/stopping blood flow	28 (16)
15+ minutes after slowing/stopping blood flow	4 (2)
NO POLICY	5 (3)
Facility's written policy* –2000 study period	
TOTAL	166(100)
immediately, without slowing/stopping blood flow	0 (0)
immediately after slowing/stopping blood flow	8 (5)
15-60 seconds after slowing/stopping blood flow	124 (75)
61-120 seconds after slowing/stopping blood flow	7 (4)
>2 to 15 minutes after slowing/stopping blood flow	12 (7)
15+ minutes after slowing/stopping blood flow	0 (0)
NO POLICY	13 (8)

* Two facilities that responded they had a written policy for the timing of post-dialysis BUN sampling did not further describe the policy, thus their information does not appear in the table.

Note: Percents may not add up to 100% due to rounding.

Dialyzer Reuse

80% (139/175) of facilities reported reusing dialyzers during the calendar year 1998 (Figure 1). Within this subset of facilities, 24% (33/139) reported measuring TCV **prior to the dialyzers' first use** for a percentage (ranging from 75-99%) of dialyzers at their facility.

75% (104/139) reported measuring TCV for 100% of reprocessed dialyzers at their facility. 26% (36/139) of facilities reported inferring TCV from the manufacturer's product information; 14% (19/139) reported using batch testing and/or an average TCV for a group of hemodialyzers to infer TCV.

2000 Study Period

Post-Dialysis BUN Sampling Policy and Audit

173 facilities were included in the sample; 96% (166/173) submitted completed forms to their respective Network. 92% (153/166) of facilities reported the presence of a written policy for post-dialysis BUN sampling (Table 1).

Do you know how drawing a patient's post dialysis BUN sample can affect his or her adequacy measure (Kt/V or URR)?

81% (124/153) of facilities with a written policy reported this policy states post-dialysis BUN sampling is to occur 15 to 60 seconds after slowing or stopping blood flow.

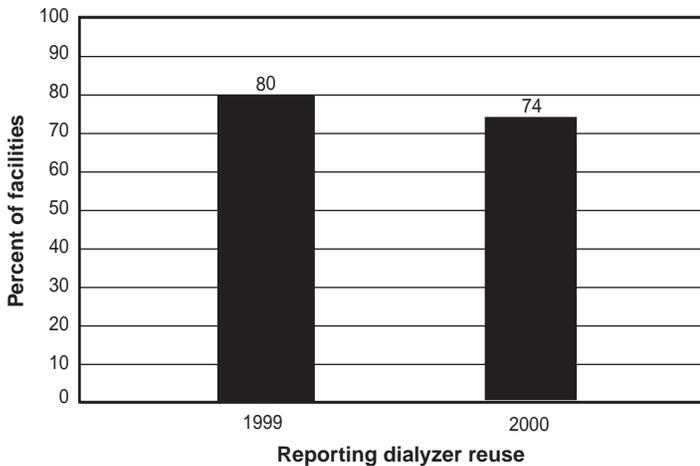
8% (13/166) of facilities reported having no written policy regarding the timing of post-dialysis BUN sampling. During the calendar year 1999, 34% (52/153) facilities reported conducting an audit of adherence to the facility's written policy.

Dialyzer Reuse

74% (123/166) of facilities reported reusing dialyzers during the calendar year 1999 (Figure 1). Within this subset of facilities, 9% (11/123) reported measuring TCV **prior to the dialyzers' first use** for <95% of dialyzers at their facility. 76% (94/123) reported measuring TCV for 95%-100% of reprocessed dialyzers at their facility. 20% (24/123) of facilities reported inferring TCV from the manufacturer's product information; 9% (11/123) reported using batch testing and/or an average TCV for a group of hemodialyzers to infer TCV.

Does your facility monitor and evaluate the performance of those dialyzers that are reused?

Figure 1: Percent of facilities reporting dialyzer reuse



KEY OBSERVATIONS

- 97% of the facilities sampled in 1999 reported that they had written procedures for post-dialysis BUN sampling compared to 92% in 2000.
- 39% of the facilities sampled in 1999 reported that they conducted an audit of adherence to their facility's policy for post-dialysis BUN sampling compared to 34% in 2000.
- 73% of the facilities sampled in 1999 reported that their written policy for post-dialysis BUN sampling was 15-60 seconds after slowing or stopping blood flow compared to 81% in 2000.
- 3% of the facilities sampled in 1999 reported that they did not have a written policy regarding the timing of post-dialysis BUN sampling compared to 8% in 2000.
- 80% of the facilities sampled in 1999 reported that they reused dialyzers during calendar year 1998 while 74% of the facilities sampled in 2000 reported that they reused dialyzers during calendar year 1999.
- 75% of the facilities sampled in 1999 that reused dialyzers reported that they measured TCV **prior to the dialyzers' first use** for 100% of reprocessed dialyzers. 76% of the facilities sampled in 2000 that reused dialyzers reported that they measured TCV for 95-100% of reprocessed dialyzers.

NEXT STEPS

- HCFA will continue to collect information on these two CPMs - timing of post-dialysis BUN sampling and measuring TCV for reprocessed dialyzers. A five percent random sample of facilities with one or more adult in-center hemodialysis patients in the 2001 ESRD CPM sample will be asked to report their facility's policy in these areas.
- Educational efforts to raise awareness of appropriate practice in these areas will continue.

In this report we asked you some questions to make you aware of the importance of how the post dialysis blood samples are drawn and the need to measure the total cell volume of those dialyzers that are reused **prior to the dialyzers' first use**.

If you answered no to most of the questions or if you do not know the answers for your facility, ask someone in your facility.

We also recommend that you review the NKF K/DOQI clinical practice guidelines for these areas. You can also contact your ESRD Network office for assistance.

REFERENCES

1. Health Care Financing Administration. 1999 Annual Report, End Stage Renal Disease Clinical Performance Measures Project. Department of Health and Human Services, Health Care Financing Administration, Office of Clinical Standards and Quality, Baltimore, Maryland, December 1999.
2. NKF-DOQI Clinical Practice Guidelines for Hemodialysis Adequacy. Am J Kidney Dis 1997;30 (supplement 2).
3. Association for the Advancement of Medical Instrumentation (AAMI) Standards and Recommended Practices. Re-use of hemodialyzers. 2nd ed. ANSI/AAMI RD47-1993. Page 105. Arlington, VA: AAMI, 1993b. American National Standard.

ATTACHMENT 1
FACILITY CLINICAL PERFORMANCE MEASURES DATA COLLECTION FORM: 1999

FACILITY IDENTIFICATION

MAKE CORRECTIONS TO FACILITY INFORMATION
ON LEFT IN THE SPACE BELOW

PLACE FACILITY DATA LABEL HERE

1. Which of the following would best describe your facility's written policy for the **TIMING** of the post-dialysis BUN sample collection as of October 1, 1998? (*This question refers to any written policy, endorsed by your facility's management and to which adherence is expected, regarding the timing of blood draws for the assessment of post-dialysis BUN samples. Please mark the box "No Policy" if there is none.*) **[CHECK ONLY ONE ANSWER]**

- | | |
|--|--|
| <input type="checkbox"/> Immediately, without slowing blood flow | <input type="checkbox"/> Immediately after slowing or stopping blood flow |
| <input type="checkbox"/> 15 to 60 seconds after slowing or stopping blood flow | <input type="checkbox"/> 1 to 2 minutes after slowing or stopping blood flow |
| <input type="checkbox"/> > 15 minutes | <input type="checkbox"/> No Policy |

2. During the time period January 1, 1998 to December 31, 1998, did your facility conduct an audit of adherence to the written policy for post-dialysis BUN sample collection? (*An audit refers to an actual physical observation and verification of post-dialysis BUN blood sample draws in order to assess compliance with the policy identified in question A.*)

- Yes No Unknown

3. During the time period October 1, 1998 to December 31, 1998 did your facility re-process (re-use) dialyzers? (*Please answer "Yes" if your facility re-used ≥ 1 dialyzer(s) between October 1, 1998 and December 31, 1998.*)

- Yes No Unknown

If yes, please check the box(es) which most accurately represents the proportion of reprocessed dialyzers for which total cell volume (TCV) is measured in your facility prior to first use: **[CHECK ALL THAT APPLY]**

- ____% 100 %
- We use the dialyzer manufacturer's product information to infer TCV
- We use batch testing and/or an average TCV for a group of hemodialyzers to infer TCV
- Other _____

Individual Completing Form (**Please print**) :

First name: _____ Last name: _____ Title: _____

Phone number: (_____) _____ - _____ Fax number (_____) _____ - _____

ATTACHMENT 2

DIALYSIS FACILITY CLINICAL PERFORMANCE MEASURES DATA COLLECTION FORM 2000

FACILITY IDENTIFICATION

MAKE CORRECTIONS TO FACILITY INFORMATION
ON LEFT IN THE SPACE BELOW

PLACE FACILITY DATA LABEL HERE

1. Does your facility have a written policy for the **TIMING** of the post-dialysis BUN sample collection? (*This question refers to any written policy, endorsed by your facility's management and to which adherence is expected, regarding the timing of blood draws for the assessment of post-dialysis BUN samples*).

Yes No

If yes, which of the following would best describe your facility's written policy for the **TIMING** of the post-dialysis BUN sample collection as of October 1, 1999? [**CHECK ONLY ONE ANSWER**]

- Immediately, without slowing blood flow Immediately after slowing or stopping blood flow
 15 to 60 seconds after slowing or stopping blood flow 61 to 120 seconds after slowing or stopping blood flow
 >2 to 15 minutes after slowing or stopping blood flow >15 minutes after slowing or stopping blood flow

2. During the time period January 1, 1999 to December 31, 1999, did your facility conduct and document an audit of adherence to the written policy for post-dialysis BUN sample collection? (*An audit refers to an actual physical observation and verification of post-dialysis BUN blood sample draws in order to assess compliance with the policy identified in question 1*).

Yes No Unknown

3. During the time period October 1, 1999 to December 31, 1999 did your facility re-process (re-use) dialyzers? (*Please answer "Yes" if your facility re-used ≥ 1 dialyzer(s) between October 1, 1999 and December 31, 1999.*)

Yes No Unknown

If yes, please check the box(es) which most accurately represents the proportion of reprocessed dialyzers for which total cell volume (TCV) is measured in your facility prior to first use: [**CHECK ALL THAT APPLY**]

- < 95 % 95 - 100 %
 We use the dialyzer manufacturer's product information to infer TCV
 We use batch testing and/or an average TCV for a group of hemodialyzers to infer TCV
 Other _____

Individual Completing Form (**Please print**):

First name: _____ Last name: _____ Title: _____

Phone number: (_____) _____ - _____ Fax number (_____) _____ - _____