

Quality Performance Measures

Assisting the Renal Community to Improve the Quality of Patient Care

2001

Quality Improvement Activity

**End stage
Renal Disease
Network 13**

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Introduction

Background

As of December 31, 2000, there are 11,783 people in Network 13 who have end stage renal disease (ESRD), of which 91% (10,731) are treated by hemodialysis and 9% (1,052) are treated by peritoneal dialysis. The available National data activities (historically Core Indicators and now Clinical Performance Measures) report on the quality of care being provided to the ESRD beneficiaries and are a commitment to improving ESRD patient care and outcomes. Those results provided to date, argue strongly that meaningful feedback data reports are an important tool that can be used by the Network 13 facilities in assessing patient care processes and outcomes, as well as helping providers in identifying opportunities for improving their processes of care. However, these National projects report only a percentage of patients and providers within the Network. A truly reflective facility-specific snapshot of the dialysis care provided throughout Network 13 is now available on an annual basis through this annual Quality Performance Measures (QPM) activity.

With the widespread distribution of the National Kidney Foundation-Dialysis Outcomes Quality Initiatives (NKF-DOQI), guidelines were put forth into the renal community for utilization. Based on these guidelines as well as National data, the ESRD Network 13 Medical Review Board and Board of Directors have approved utilization of the QPM as a map to direct areas in which to focus Network 13 Quality Improvement (QI) activities.

Objectives

QPM is based on a combination of two separate but complementary activities: outcomes assessment and continuous quality improvement.

- Outcomes of Interest = (1) Anemia Management; (2) Delivery of Adequate Dialysis Therapy; (3) Monitoring of Vascular Access; (4) Management of Nutrition; (5) Infection Control Practices; and (6) Issues of Prevention such as immunizations and foot care.
- Process Indicators = (1) Early detection of anemia, inadequate dialysis therapy, vascular access complications, inadequate nutrition management, inappropriate infection control practices, and (2) prevention of influenza, pneumococcal pneumonia, and hepatitis as deemed appropriate, as well as diabetic/neuropathy foot complications (e.g., foot ulcers, amputations).
- The anticipated short and long-term goal of this activity is to stimulate facility-specific ongoing QI processes specific to listed outcomes.

Methodology

Two hundred thirty-five (235) CMS-approved ESRD providers/facilities within Network 13.

- The Network provided project facilities with data abstraction tool.
- Exclusions – Any facility listed as “pending” Medicare-approval at time of data abstraction, as well as units declaring “primarily acute” patient populations and prison units.
- Timeframe: July 2001

Methodology (Continued)

Data Analysis:

It should be noted that the data analyzed for this report was self-reported, facility-specific data. Quality of data issues were clarified via telephone and fax replies to questions regarding data. Each facility's medical director and nurse manager was asked to 'sign off' that the "information provided was current and reflective of performance at their facility". The Network staff, Quality Improvement Committee (QIC) and the Medical Review Board (MRB) reviewed preliminary data analyses and reports prior to distribution.

Data Validation:

On 10% of participating facilities (25 facilities), patient-specific monthly lab reports for July 2001 were collected on 100% of their patient population. This allowed the Network to validate adequacy, anemia, and nutrition sections of the QPM.

Review and Distribution of State and Facility-Specific Data

The Network annually submits a preliminary report detailing the results of individual facility and statewide (AR, LA, OK) QPM results for review by the Network's MRB prior to distribution to the renal community. Based on their review, the MRB can direct the Network to notify facilities of concerns with facility outcomes, as well as to offer Network assistance in facility quality improvement activities.

Opportunity to Improve

Each Network 13 dialysis facility receives facility-specific charts displaying their outcomes with both state and Network comparisons. It is expected that facility leadership will review their charts for opportunities to improve. The Network QI staff are available upon request to assist facilities in reviewing their outcomes and in implementing quality improvement activities.

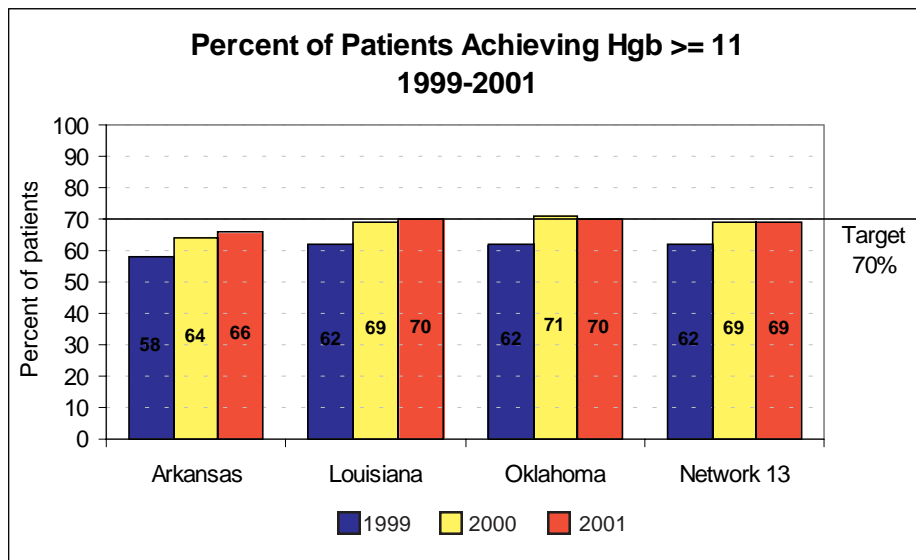
Acknowledgments

ESRD Network 13 staff and the Medical Review Board commend the Network's dialysis community for their cooperation in collecting and reporting facility data for the 2001 Quality Performance Measures Report, as well as for the improvement noted over time in patient care outcomes. This report, which represents many hours of hard work, is a symbol of your ongoing commitment towards providing dialysis patients with longer, healthier, more active lives.

Anemia Management

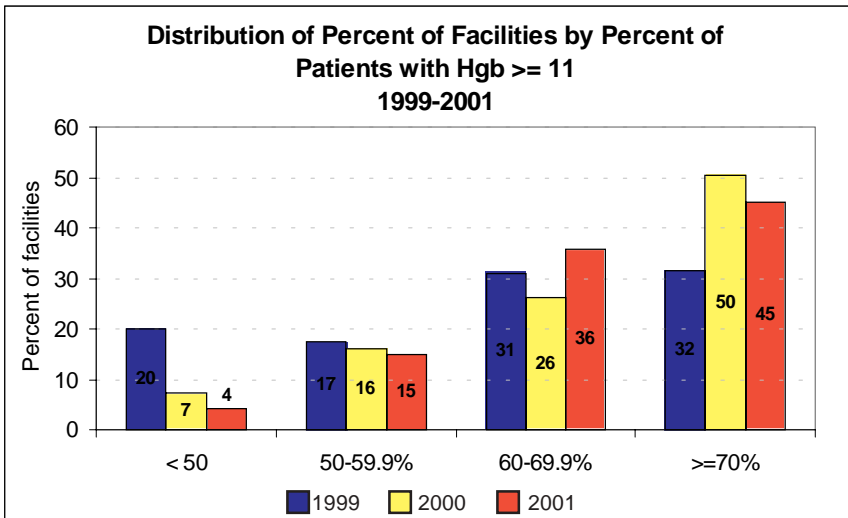
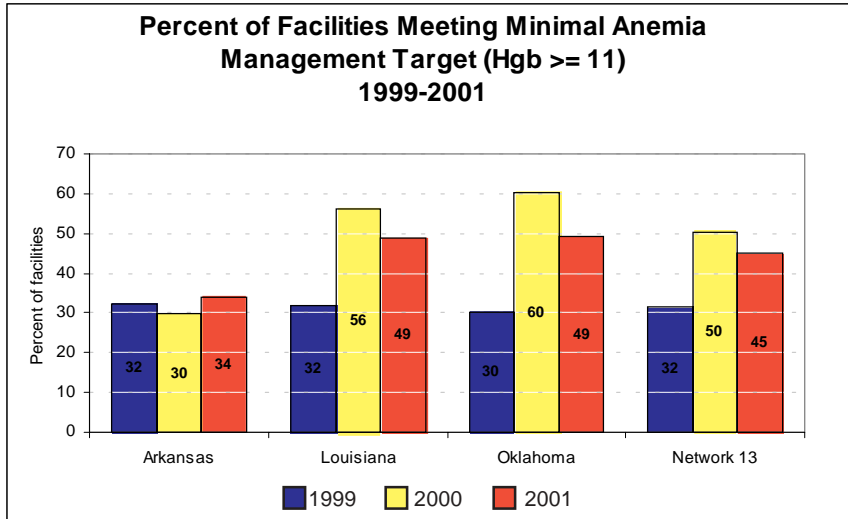
The most commonly used laboratory test to assess anemia management is the hemoglobin (Hgb). Additional tests measure serum ferritin and transferrin saturation (TSat). The National Kidney Foundation (NKF) Kidney Disease Outcomes Quality Initiative (K/DOQI™) Clinical Practice Guidelines for anemia management recommend the following:

1. Target Range for Hemoglobin / Hematocrit for Epoetin Therapy.
 - Target range should be Hgb 11 -12 g/dL and/or Hct 33 - 36%.
2. Assessment of Iron Stores Among Anemic Patients or Patients Prescribed Epoetin Therapy.
 - Iron status should be monitored by the percent transferrin saturation (TSat) and the serum ferritin.
 - Target iron level. Chronic renal failure patients should have sufficient iron to achieve and maintain a hemoglobin of 11-12 g/dL (hematocrit of 33% to 36%).
 - Monitoring iron status:
 - a. During the initiation of Epoetin therapy and while increasing the Epoetin dose in order to achieve an increase in hemoglobin / hematocrit, the TSat and the serum ferritin should be checked every month in patients not receiving intravenous iron, and at least once every 3 months in patients receiving intravenous iron, until target hemoglobin / hematocrit is reached.
 - b. Following attainment of the target hemoglobin / hematocrit, TSat and serum ferritin should be determined at least once every three months.



Anemia Management: 2001				
All ESRD Patients	Arkansas	Louisiana	Oklahoma	Network 13
Mean Hemoglobin	11.5	11.6	11.6	11.6
% Facilities with 70% or more of their patients with Hgb \geq 11	34	49	49	45
% Facilities reporting an Epoetin protocol	95	99	100	98
% Facilities reporting an Iron protocol	95	99	94	97
% Facilities who have protocol for hyporesponse to Epoetin/Iron therapy	56	59	57	57
% Patients with serum ferritin \geq 100 ng/ml	88	92	91	91
% Patients with TSat \geq 20%	72	79	78	77
Opportunity to Improve				
Only 45% of facilities achieved target of 70% of their patient population with Hgb's 11g/dL. Additional QI focus is needed to assist patients in achieving Anemia Management target.				

Anemia Management (Continued)



How Does Your Facility Compare?

Distribution of Facilities by Percent of Patients with Hemoglobin \geq 11g/dL: 2001

% of ESRD patients with a Hgb \geq 11	Arkansas		Louisiana		Oklahoma		Network 13	
	# Facilities	% Facilities	# Facilities	% Facilities	# Facilities	% Facilities	# Facilities	% Facilities
0-9.9%	1	1.7	0	0.0	0	0.0	1	0.4
10-19.9%	0	0.0	0	0.0	0	0.0	0	0.0
20-29.9%	0	0.0	0	0.0	0	0.0	0	0.0
30-39.9%	1	1.7	0	0.0	0	0.0	1	0.4
40-49.9%	4	6.8	3	2.4	1	1.9	8	3.4
50-59.9%	8	13.6	17	13.8	10	18.9	35	14.9
60-69.9%	25	42.4	43	35.0	16	30.2	84	35.7
70-79.9%	12	20.3	37	30.1	15	28.3	64	27.2
80-89.9%	7	11.9	19	15.4	10	18.9	36	15.3
90-100%	1	1.7	4	3.3	1	1.9	6	2.6
Total	59	100	123	100	53	100	235	100

These facilities have been identified as having an opportunity for improvement.

Adequacy of Dialysis

Hemodialysis Adequacy

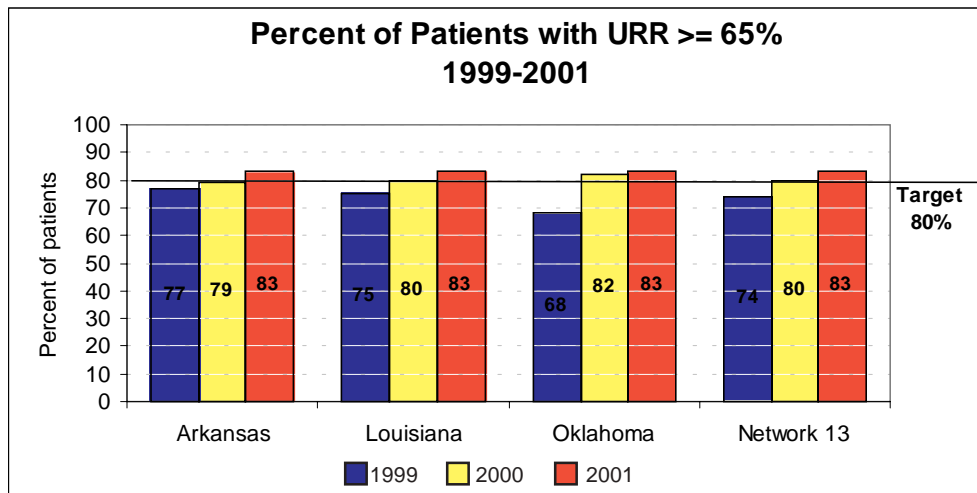
The two common measures to assess hemodialysis adequacy are urea reduction ratio (URR) and Kt/V. The NKF-K/DOQI Clinical Practice Guidelines recommend the following:

1. Minimum Delivered Hemodialysis Dose

- The dialysis care team should deliver a Kt/V of at least 1.2 (single-pool, variable volume) for both adult and pediatric hemodialysis patients. For those using the urea reduction ratio (URR), the delivered dose should be equivalent to a Kt/V of 1.2, i.e., an average URR of 65%; however, URR can vary substantially as a function of fluid removal.

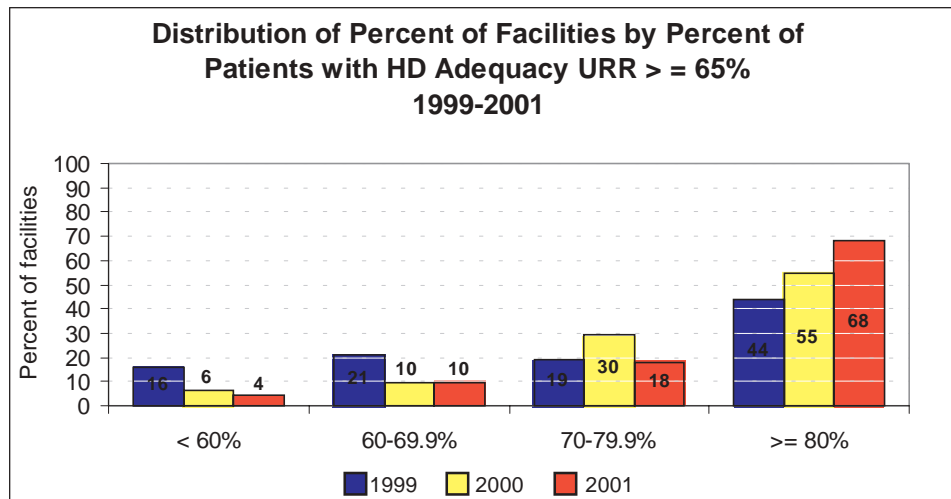
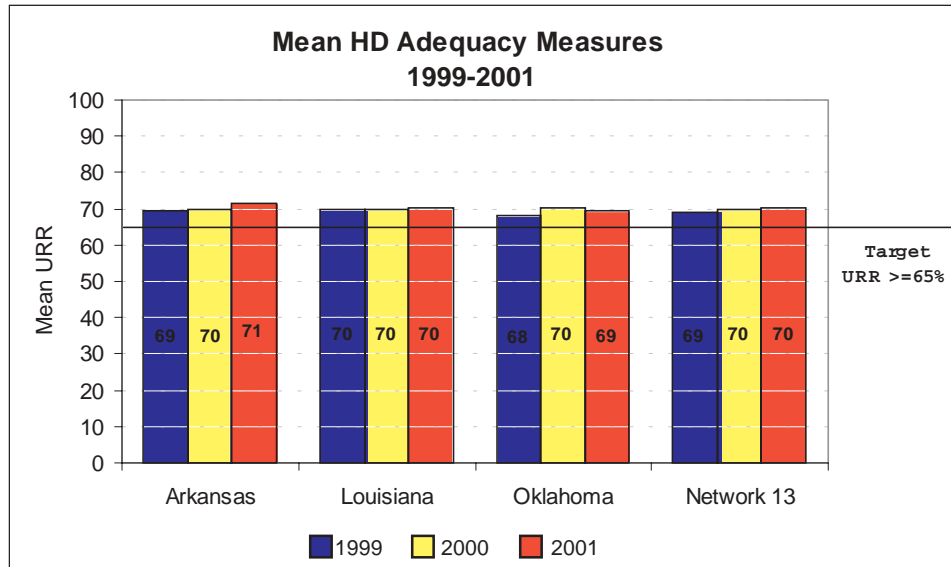
2. Monthly Measurement of Delivered Hemodialysis Dose

- The dialysis care team should routinely measure and monitor the delivered dose of hemodialysis.



Adequacy Management: 2001				
Hemodialysis	Arkansas	Louisiana	Oklahoma	Network 13
Mean URR	71.3	70.1	69.4	70.3
# Facilities reporting	59	123	53	235
Mean Kt/V	1.5	1.5	1.5	1.5
# Facilities reporting	44	67	38	149
% Facilities with 80% or more patients having URR \geq 65%	66.1	67.5	71.7	68.1
Average time on dialysis (min)	218	227	220	223
# Facilities reporting	59	123	53	235
% Facilities report performance of post-BUN collection audits	79.7	69.1	69.8	71.9
% Facilities report performance of residual renal function (RRF) testing	47.5	60.2	58.5	56.6
Opportunity to Improve				
32% (75 facilities) need to focus QI activities towards achieving performance target (80% of HD patients achieving URR \geq 65%)				

Hemodialysis Adequacy (Continued)



How Does Your Facility Compare?

Distribution of Facilities by Percent of Patients with HD URR >= 65%: 2001

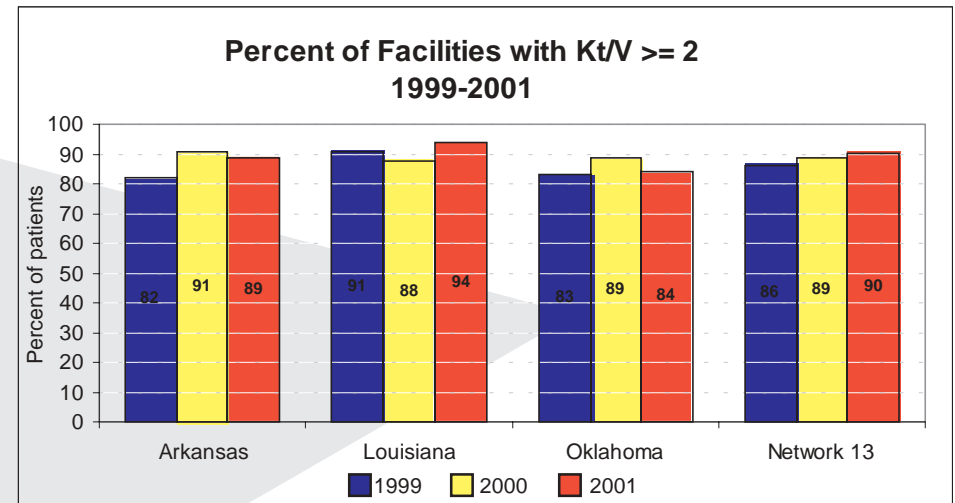
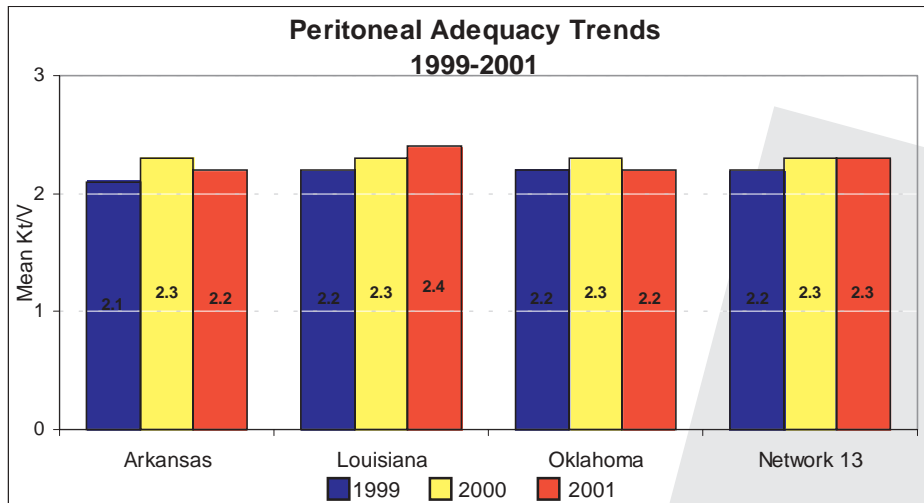
% of Hemodialysis patients with a URR >= 65%	Arkansas		Louisiana		Oklahoma		Network 13	
	# Facilities	% Facilities	# Facilities	% Facilities	# Facilities	% Facilities	# Facilities	% Facilities
0-9.9%	0	0.0	0	0.0	0	0.0	0	0.0
10-19.9%	0	0.0	0	0.0	0	0.0	0	0.0
20-29.9%	0	0.0	0	0.0	1	1.9	1	0.4
30-39.9%	0	0.0	1	0.8	0	0.0	1	0.4
40-49.9%	1	1.7	0	0.0	0	0.0	1	0.4
50-59.9%	3	5.1	3	2.4	1	1.9	7	3.0
60-69.9%	6	10.2	14	11.4	3	5.7	23	9.8
70-79.9%	10	16.9	22	17.9	10	18.9	42	17.9
80-89.9%	18	30.5	44	35.8	21	39.6	83	35.3
90-100%	21	35.6	39	31.7	17	32.1	77	32.8

These facilities have been identified as having an opportunity for improvement.

Peritoneal Dialysis Adequacy

The measures of peritoneal dialysis (PD) adequacy are total weekly creatinine clearance (CrCl) normalized to 1.73 m² body surface area and total weekly Kt/V. The NKF-K/DOQI Clinical Practice Guidelines recommend the following:

1. Weekly Dose of CAPD
 - The delivered PD dose should be a total Kt/Vurea of at least 2.0 per week and a total CrCl of at least 60 L/week/1.73 m².
2. Weekly Dose of CCPD and NIPD
 - CCPD – the delivered PD dose should be a total Kt/Vurea of at least 2.1 and a weekly total CrCl of at least 63 L/1.73 m².
 - NIPD – the delivered PD dose should be a total Kt/Vurea of at least 2.2 and a weekly total CrCl of at least 66 L/1.73 m².
3. Measurement of Total Solute Clearance at Regular Intervals (Peritoneal Dialysis)
 - Both total weekly creatinine clearance normalized to 1.73 m² BSA and total weekly Kt/Vurea should be used to measure delivered peritoneal dialysis doses. Consideration should be given to dialysate and urine collections.



Peritoneal Adequacy Management: 2001				
Peritoneal Dialysis	Arkansas	Louisiana	Oklahoma	Network 13
Mean Kt/V	2.2	2.5	2.2	2.3
# Facilities Reporting	9	33	19	61

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Vascular Access

The NKF-K/DOQI Clinical Practice Guidelines recommend the following:

1. Selection of Permanent Vascular Access

- Maximizing placement of arteriovenous fistulas (AVF). The order of preference for placement of AVF is 1) wrist (radial-cephalic) primary AVF; 2) elbow (brachial-cephalic) primary AVF.
- If it is not possible to establish either of these AVF's, access may be established using: 1) arteriovenous graft (AVG) of synthetic material or 2) transposed brachial-basilic vein fistula.
- Cuffed-tunneled central venous catheters should be discouraged as permanent vascular access.

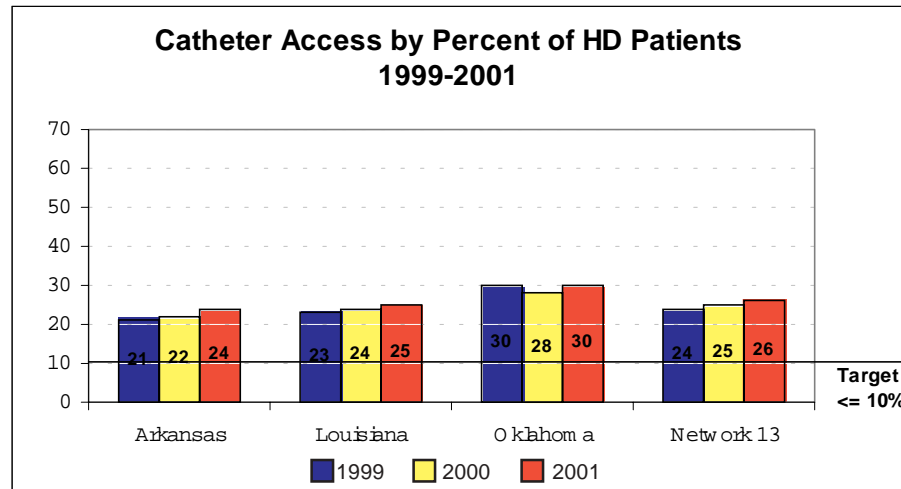
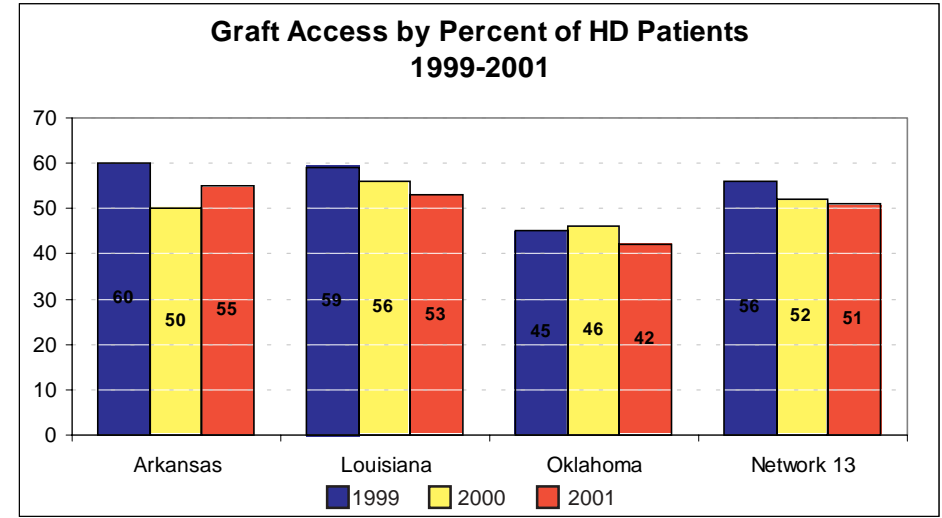
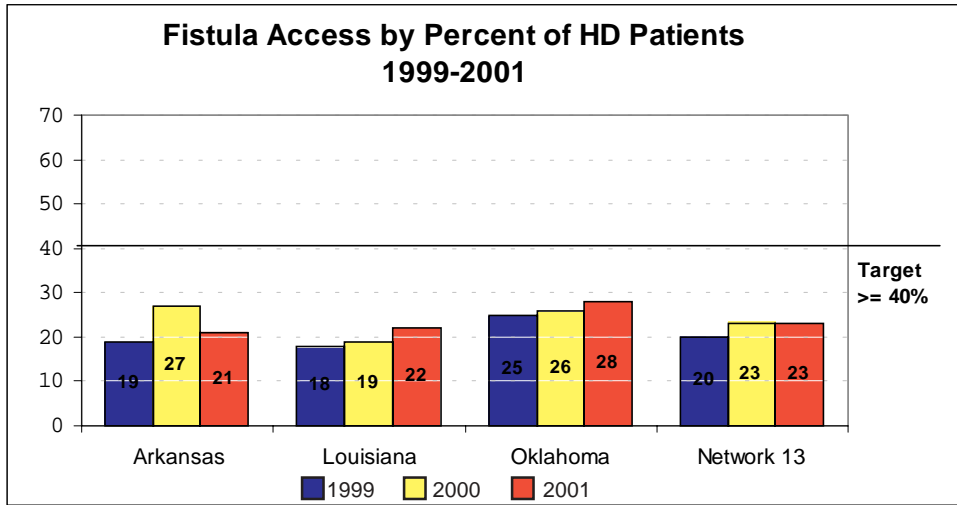
2. Monitoring AVG's for Stenosis

- Physical examination of an access graft should be performed weekly and should include, but not be limited to, inspection and palpation for pulse and thrill at arterial, mid, and venous sections of the graft.
- AVG's should be monitored for hemodynamically significant stenosis. Techniques, not mutually exclusive, that can be used to monitor for stenosis in AVG's includes: 1) intra-access flow; 2) static venous pressures; 3) dynamic venous pressures; 4) measurement of access recirculation using urea concentrations; 5) measurement of recirculation using dilution techniques; 6) unexplained decreases in measured adequacy; 7) physical findings of persistent swelling of the arm, clotting of the graft, prolonged bleeding after needle withdrawal, or altered pulse/thrill characteristics; and 8) elevated negative arterial pre-pump pressures that prevent increasing to acceptable blood flow.

Vascular Access Management: 2001				
Vascular Access	Arkansas	Louisiana	Oklahoma	Network 13
% Facility reporting access monitoring and maintenance policies in place	79.7	82.1	79.2	80.9
Stenosis*	89.4	80.2	54.8	76.8
Thrombosis	78.7	77.2	69.0	75.8
% Facility reporting prevention/management of access complications policies and procedures	79.7	75.6	75.5	76.6
Stenosis*	78.7	75.3	55.0	71.7
Thrombosis	74.5	69.9	67.5	70.6
% Facilities reporting vascular quality of care standard measurements available	59.3	64.2	75.5	65.5

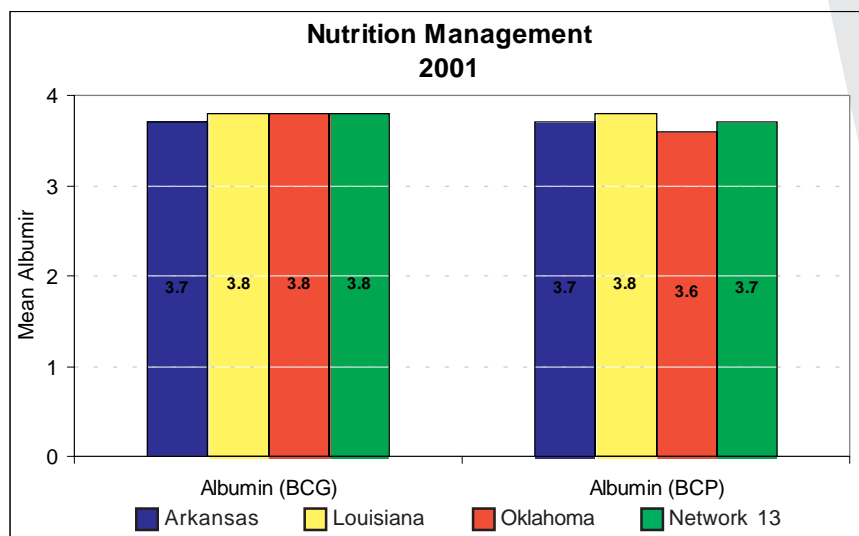
* Target: 100% of AVG's to be monitored for stenosis.

Vascular Access (Continued)



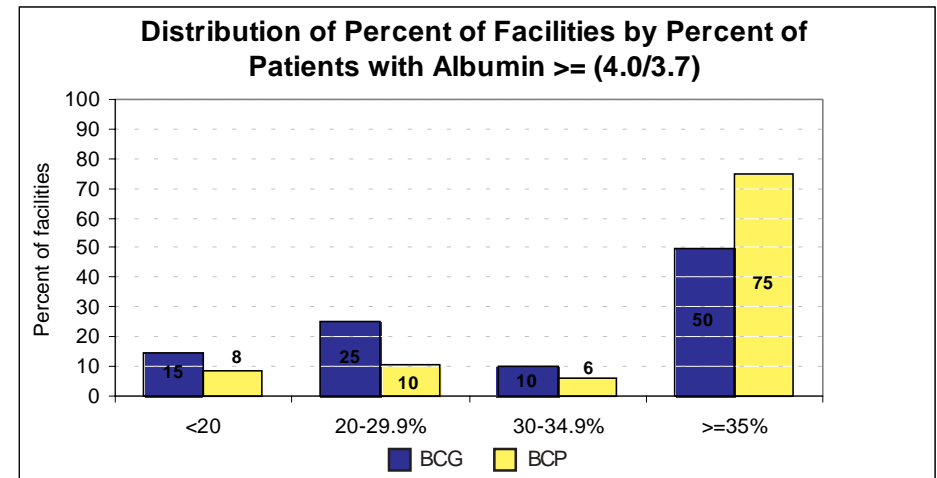
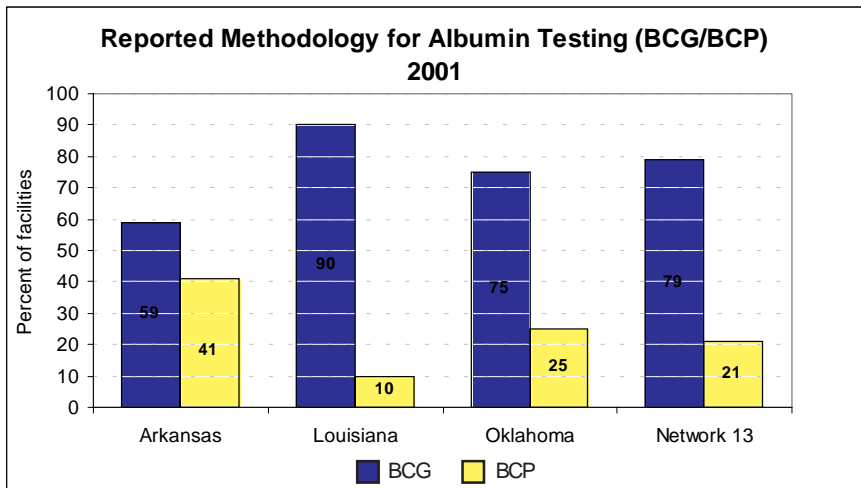
Two laboratory methods exist for determining serum albumin levels; bromcresol green (BCG) and bromcresol purple (BCP). The majority of Network 13 facilities report utilizing BCG to calculate serum albumin levels. The testing methods produce different results with BCP providing systematically lower results. The NKF-K/DOQI Clinical Practice Guidelines for nutrition recommend the following:

1. Serum Albumin is a Valid and Clinically Useful Measure of Protein-Energy Nutritional Status in Maintenance Dialysis Patients.
 - A predialysis or stabilized serum albumin equal to or greater than the lower limit of the normal range is the outcome goal. (BCG = 4.0 g/dL and BCP = 3.7 g/dL)



Nutrition: 2001				
Albumin Management	Arkansas	Louisiana	Oklahoma	Network 13
% Patients with mean albumin \geq 4 (BCG)	30.4	40.5	32.1	36.8
% Patients with mean albumin \geq 3.7 (BCP)	50.1	68.8	47.0	53.5
% Facilities with 35% of patients with mean Albumin \geq 4.0 (BCG)	27.4	60.7	33.2	50.0
# Facilities reported	35	111	40	186
% Facilities with 35% of patients with mean Albumin \geq 3.7 (BCP)	70.8	100.0	55.7	75.0
# Facilities reporting	24	11	13	48

Nutrition (Continued)



Distribution of Facilities by Percent of Patients with Albumin (BCG) \geq 4: 2001

% of ESRD Patients with a Albumin \geq 4.0 (BCG)	Arkansas		Louisiana		Oklahoma		Network 13	
	# Facilities	% Facilities	# Facilities	% Facilities	# Facilities	% Facilities	# Facilities	% Facilities
0-9.9%	2	3	3	2	2	5	7	4
10-19.9%	7	12	7	6	6	15	20	11
20-29.9%	12	20	22	18	13	33	47	25
30-34.9%	10	17	23	18	5	13	38	20
35-39.9%	14	24	1	1	3	8	18	10
40-49.9%	6	10	28	23	8	20	42	23
50-59.9%	1	2	14	11	1	3	16	9
60-69.9%	2	3	4	3	0	0	6	3
70-79.9%	0	0	4	3	1	3	5	3
80-89.9%	0	0	4	3	1	3	5	3
90-100%	0	0	1	1	0	0	1	1
Total	35	100	111	100	40	100	186	100

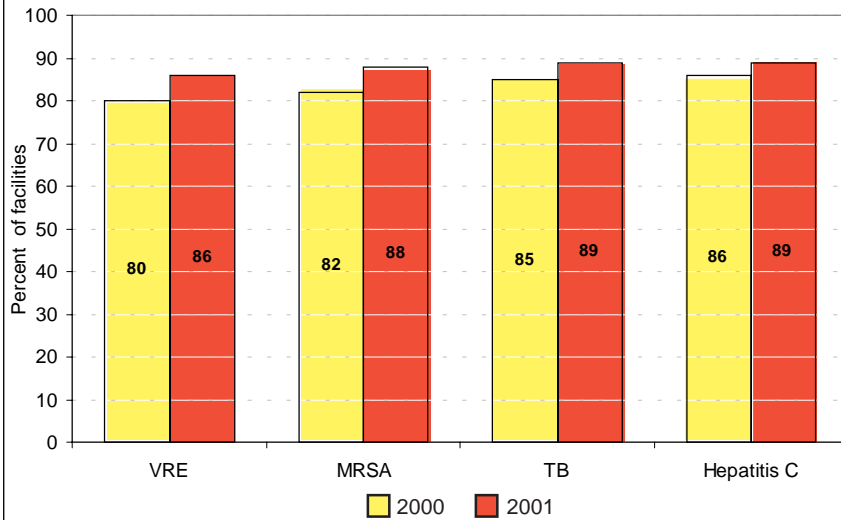
Distribution of Facilities by Percent of Patients with Albumin (BCP) \geq 3.7: 2001

% of ESRD Patients with a Albumin \geq 3.7 (BCP)	Arkansas		Louisiana		Oklahoma		Network 13	
	# Facilities	% Facilities	# Facilities	% Facilities	# Facilities	% Facilities	# Facilities	% Facilities
0-9.9%	1	4	0	0	0	0	1	2
10-19.9%	1	4	0	0	2	15	3	6
20-29.9%	4	17	0	0	1	8	5	10
30-34.9%	1	4	0	0	2	15	3	6
35-39.9%	0	0	0	0	1	8	1	2
40-49.9%	3	13	1	9	1	8	5	10
50-59.9%	2	8	1	9	1	8	4	8
60-69.9%	7	29	4	36	3	23	14	29
70-79.9%	4	17	3	27	1	8	8	17
80-89.9%	1	4	2	18	1	8	4	8
90-100%	0	0	0	0	0	0	0	0
Total	24	100	11	100	13	100	48	100

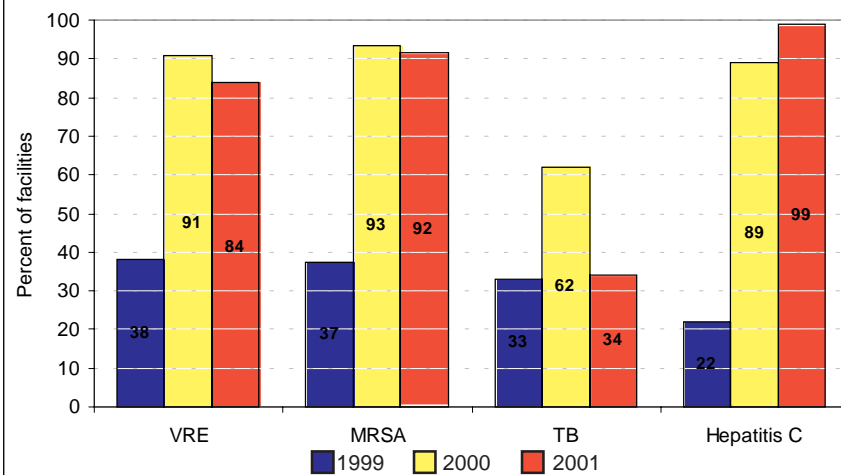
These facilities have been identified as having an opportunity for improvement.

Infection Control

**Written Policies Regarding Infectious Diseases
2000-2001**



**Percent of Facilities Accepting Patients with Identified
Infectious Diseases
1999-2001**



Infection Control: 2001

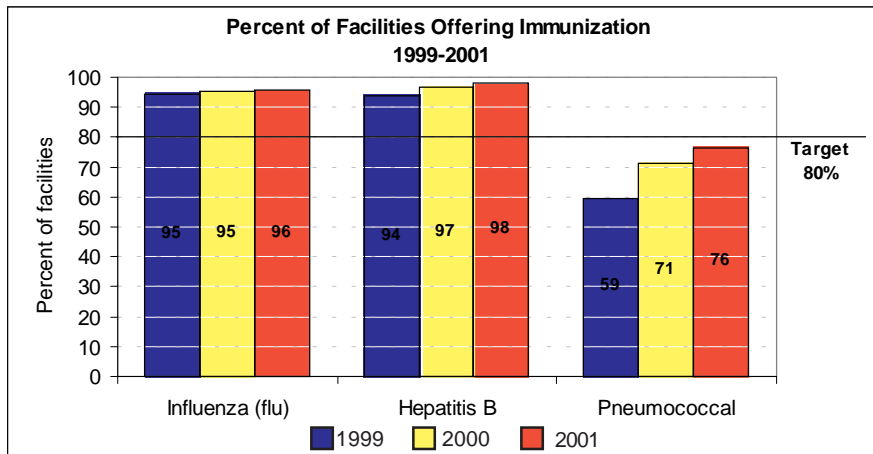
Infection Control	Arkansas	Louisiana	Oklahoma	Network 13
Vancomycin Resistant Enterococcus (VRE)				
% Facilities have written policies	86.4	84.6	90.6	86.4
% Facilities accept patients	79.7	87.0	83.0	84.3
# Facilities reporting	59	123	53	235
Of those facilities who accept patients with VRE				
% Facilities have dedicated machine	80.9	58.9	43.2	60.6
% Facilities have single room	34.0	9.3	9.1	15.2
# Facilities reporting	47	107	44	198
Methicillin-Resistant Staphylococcus Aureus (MRSA)				
% Facilities have written policies	88.1	87.0	88.7	87.7
% Facilities accept patients	88.1	93.5	90.6	91.5
# Facilities reporting	59	123	53	235
Of those facilities who accept patients with MRSA				
% Facilities have dedicated machine	73.1	53.9	37.5	54.9
% Facilities have single room	26.9	7.8	10.4	13.0
# Facilities reporting	52	115	48	215
Tuberculosis (TB)				
% Facilities have written policies	81.4	91.9	92.5	89.4
% Facilities accept patients	50.8	30.1	22.6	33.6
# Facilities reporting	59	123	53	235
Of those facilities who accept patients with TB				
% Facilities have dedicated machine	43.3	54.1	16.7	44.3
% Facilities have single room	23.3	27.0	33.3	26.6
# Facilities reporting	30	37	12	79
Hepatitis C				
% Facilities have written policies	91.5	87.8	88.7	88.9
% Facilities accept patients	100.0	100.0	94.3	98.7
# Facilities reporting	59	123	53	235
Of those facilities who accept patients with Hepatitis C				
% Facilities have dedicated machine	42.4	20.3	20.0	25.9
% Facilities have single room	0.0	0.8	4.0	1.3
# Facilities reporting	59	123	50	232
Fever				
% Facilities have standard protocol for treating fevers (temp > 100F) that develop during dialysis	89.8	92.7	88.7	91.1

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Prevention

Healthy People 2010 (HCFA/CMS) goals include the ESRD patient population specific to areas of immunization. The American Diabetes Association recommends at least one complete foot examination a year. Newly-released guidelines encourage foot care exams every six months for patients with diabetes and peripheral neuropathy with loss of protective sensation (LOPS) due to diabetes. (American Diabetes Association publication, 10/30/2001) Financial coverage of prevention items listed exists within the Medicare system and is available for Medicare ESRD beneficiaries.

1. Maximize Prevention of Diseases Where Possible Through Immunizing at least 80% of Patient Population Specific to:
 - Influenza
 - Pneumococcal pneumonia
 - Hepatitis
2. Prevent and/or Reduce the Rate of Foot Ulcers, Lower Extremity Amputations, and Hospitalization for Foot Complications Secondary to Diabetes or Neuropathy.



Prevention: 2001				
Prevention	Arkansas	Louisiana	Oklahoma	Network 13
Foot Exams				
% Facilities perform routine foot exams	44.1	34.1	17.0	32.8
# Facilities reporting	59	123	53	235
% facilities utilizing risk classifications for patient education and follow-up	19.2	25.6	22.2	23.1
Foot exams performed on				
% All patients	15.4	26.2	33.3	23.4
% Diabetic patients only	84.6	73.8	66.7	76.6
Kind of exams				
% Comprehensive	0.0	7.1	0.0	3.9
% Limited	15.4	21.4	33.3	20.8
% Visual	84.6	71.4	66.7	75.3
Immunization				
% Facilities offer Influenza (flu) vaccine	94.9	95.9	96.2	95.7
% Facilities offer Hepatitis B immunization	94.9	98.4	100.0	97.9
% Facilities offer Pneumococcal immunization	78.0	69.9	88.7	76.2

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Developed under CMS Contract #500-00-NW13