

III. CMS NATIONAL GOALS AND NETWORK ACTIVITIES

A. IMPROVE THE QUALITY AND SAFETY OF DIALYSIS RELATED SERVICES PROVIDED FOR INDIVIDUALS WITH ESRD

Quality Improvement Work Plan

The major functions and responsibilities of all ESRD Networks are focused on quality improvement initiatives. These initiatives help ESRD providers develop, maintain, and modify, as needed, their internal processes to improve patient safety and quality of care and achieve better patient outcomes. Network 1 utilizes a Quality Improvement Work Plan (QIWP) to accomplish these objectives.

This Work Plan addresses targeted clinical or patient experience areas selected by Centers for Medicare & Medicaid Services (CMS) and the Network Medical Review Board (MRB) that indicate opportunities for improvement or are of such critical importance that ongoing surveillance is required. The work plan, at a minimum is updated twice a year after approval from the Network's CMS Project Officer. Revisions to specific sections are made during the year as tasks are accomplished or modifications to the plan become necessary. It is considered by the Network Board and staff an essential dynamic tool that provides a quality improvement road map for Network 1.

This QIWP is collaboratively developed by the Network of New England's Medical Review Board and Network professional staff to provide a structured method for the CMS contract year regarding the QI activities that are conducted to support specific national and New England goals. Four major QI strategies are included in the QIWP:

- Task 1a: Vascular Access: Fistula First National Initiative
- Task 1b: Clinical Performance Measures
- Task 1c: Network-Specific Improvement Projects
- Task 1d: Facility-Level Quality Assessment Activities

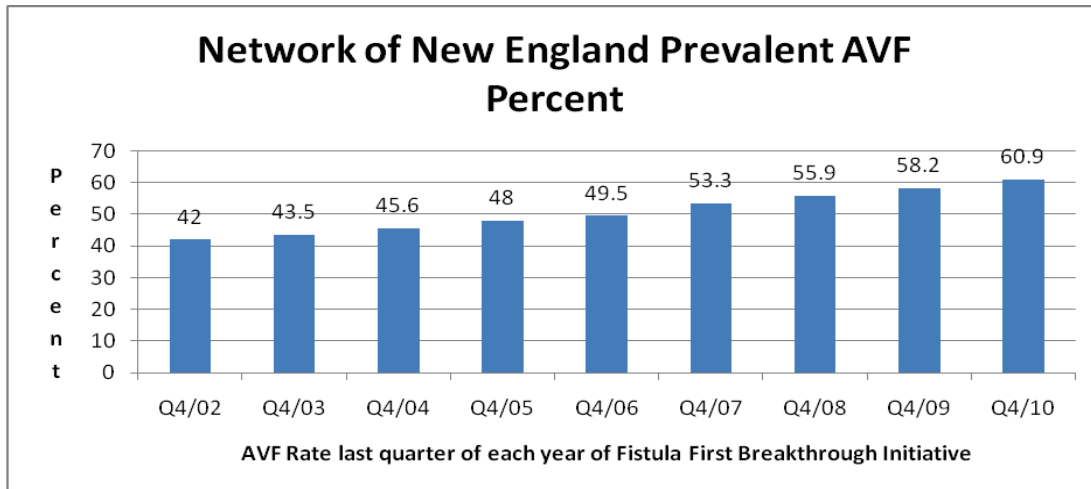
National Fistula First Vascular Access Improvement Initiative (Task 1a)

Background

In July 2003, CMS committed the Networks to a system-wide national improvement project on vascular access. Fistula First became a CMS/Fistula First Breakthrough Initiative (FFBI). A national coalition of renal community stakeholders was established collaboratively to increase awareness of, and improvement in, the prevalent rate of AV fistulas in hemodialysis patients. As of December 2010, due to the efforts put forth by the hemodialysis providers, nephrologists, and vascular surgeons, the national AVF in use rate among prevalent hemodialysis patients has increased to 57.5%, which is a 25.1 percentage improvement from the baseline rate in 2002 of 32.4%. Vascular access data is obtained from all providers on a monthly basis to allow for close assessment of

provider changes in vascular access management. The large dialysis organizations download data directly to CMS, and the independent or hospital dialysis providers send their data to the Network. The Network staff enters the data on a monthly basis. CMS had established a new goal in 2006 for the initiative, that is, to have a 66% AVF rate for prevalent hemodialysis patients. The Network of New England by the end of 2010 had an AVF rate of 60.9%, improving 18.9 percentage points since the onset of the project (Figure 8).

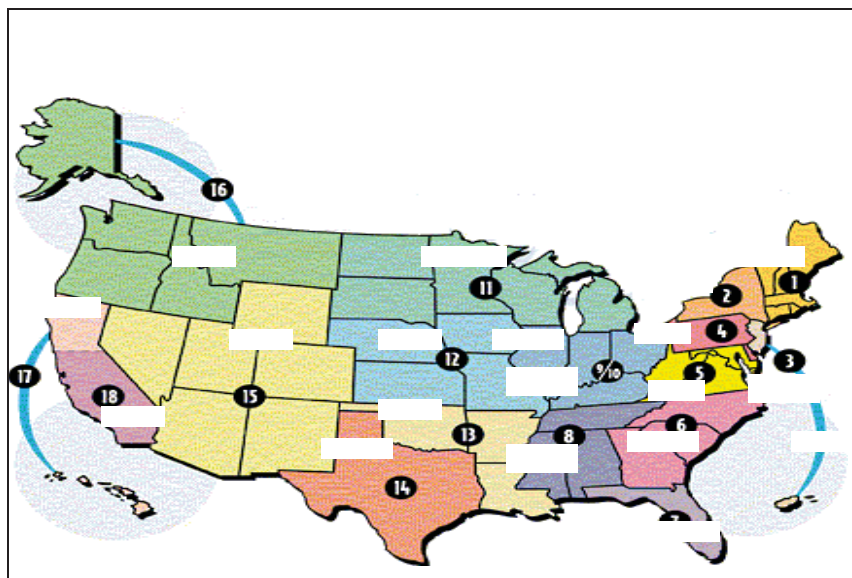
Figure 8



Source: *Fistula First Dashboard*

The Western states have the highest rates in the country, as shown in Figure 9. Best practices have been shared with the New England providers through mailings and referral to the national website: www.fistulafirst.org.

Figure 9



Fistula First Provider Reports-Tracking Vascular Access

Network staff provided feedback reports to all participating providers in each quarter of 2010. Comparable vascular access data by state and nation was also distributed so that the providers could benchmark their AVF rates to those of other dialysis providers. New England's prevalent AV fistula rate improved slightly each month to reach 60.9% by December. The prevalent catheter rate has decreased to 23.6% from 31%. When the Medical Review Board evaluated catheter rates that are in use > 90 days the rate decreased to 10.2%, a decrease of 1.42% in 2010, suggesting that a permanent access had become fully functional in a greater number of patients.

Of 165 New England hemodialysis providers, 142 (86%) had an AVF rate equal or greater than 50% as of December 2010 (Table E). The majority of the 23 providers with less than a 50% AVF rate are improving. The providers with less than a 20% AVF rate are hospitals that initiate chronic hemodialysis and discharge the patient to their home clinic to utilize outpatient services to address permanent vascular access needs.

The MRB has and will continue to focus intervention with those providers with a < 55% AVF rate and have a high prevalent catheter rate. In order to reach the long term AVF Network goal, the MRB determined that in 2010 additional focused intervention was needed for all providers with AV fistula rates less than 66%.

The MRB and CMS acknowledge that quality improvement strategies need to be focused earlier in the CKD diagnosis. The Network will collaborate with the Quality Improvement Organizations (QIOs) in the six New England states to identify areas where practice change may be necessary in the hospital setting or primary care physician's office to foster timely vascular access placement.

Table E: Number of Facilities by AVF Rate

Rate of AVF Use among Prevalent Hemodialysis Patients	Number of Facilities
20% or less	2
21% to 39%	8
40%-49%	13
50%-59%	53
60%-69%	56
70% or higher	33
Total Providers Reporting	165

Source: Provider vascular data reports December 2010

**Table F: Percentage Point Change in AVF Rate by State,
January 2010 to December 2010**

STATE	Rate of AVF Use among Prevalent Hemodialysis Patients January 2010	Rate of AVF Use among Prevalent Hemodialysis Patients December 2010	Percentage Point Change
CT	55.5%	56.7%	+1.2
MA	55.1%	57.7%	+2.6
NH	68.0%	68.5%	+0.5
RI	59.7%	64.6%	+4.9
ME	60.2%	62.1%	+1.9
VT	54.2%	58.2%	+4.0
Network	58.2%	60.9%	+2.7

Source: Monthly provider vascular access reports

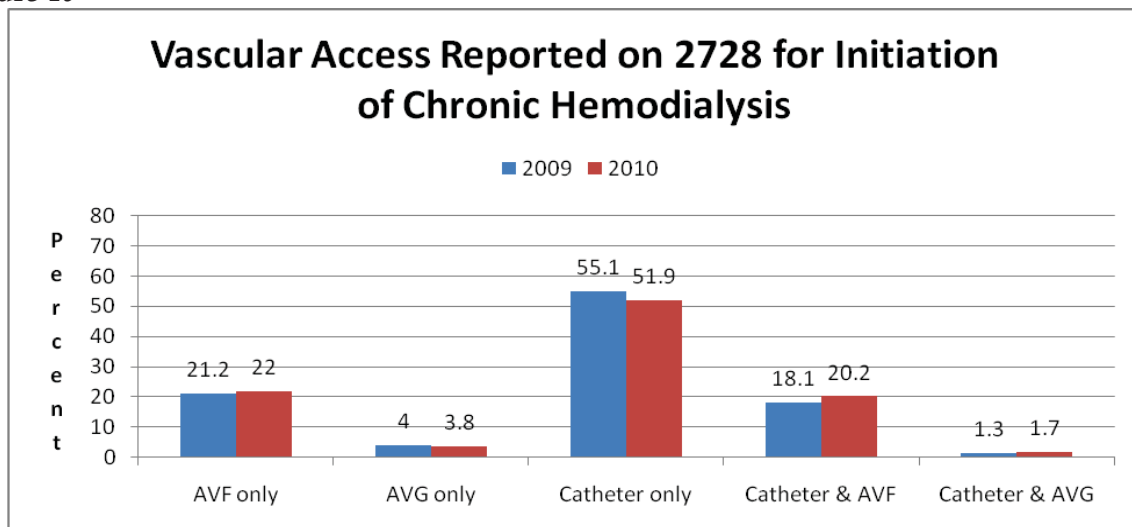
The greatest rate of improvement in AVF in use rates for prevalent dialysis patients was shown by the state of Rhode Island, while New Hampshire has one of the highest rates in the country (Table F). The Clinical Managers, Medical Directors and Area Administrators of dialysis units that continued to have <50% prevalent AV fistula rates as of March 2010 received a letter of concern from the Center of Medicare and Medicaid Services (CMS) requesting a plan of improvement and the possible consideration of alternate sanctions if the rates did not reach at least 50% by March 2011. Newly identified facilities that decreased to less than 50% in March 2010 received a letter of concern from the Medical Review Board requesting a quality improvement plan to increase their prevalent AVF rates to greater than 50% by March 2011. The submitted quality assessment performance improvement (QAPI) plans were evaluated and technical assistance provided by Network QI staff. The Network's Quality Managers arranged site visits to providers in CT and MA as these two states have the highest hemodialysis populations and the lowest rates. Several of these providers have unique ESRD populations, serving patients that can only have an indwelling catheter due to co-morbidities, drug addiction or severe peripheral vascular or cardiac disease. The hospital providers often have a small patient population starting chronic hemodialysis with a catheter prior to transfer to their local hemodialysis clinic and out-patient vascular surgery. All providers with less than a 66% AVF rate received letters from the Network assigning specific goals to each clinic based on a quality reduction formula (66% - x% multiplied by 0.2). The percent point increase requested ranged from a low of 1% to a high of 4%. The New England providers' quality improvement efforts resulted in the Network reaching the March 2011 AVF goal of 60.2% in August 2010.

Physician Profile Reports

The Network staff met with the Medical Review Board (MRB) in Q1/10, Q2/10, and Q4/10 for ongoing development of provider interventions. Fistula First updates were delivered at each meeting, and the MRB responded with various new strategies, which the QI staff implemented. The MRB remains concerned about the high rate of catheter use in incident and prevalent patients. One strategy that was carried out was the development of a nephrology practice report card, utilizing data from the ESRD Medical Evidence Report (Form 2728). The provider profile report showed the

nephrologists by UPIN number and the number of incident patients he/she signed for in 2009, the length of time each patient was followed, and the vascular access placed at the initiation of chronic hemodialysis. In March 2010, the reports were mailed to 165 hemodialysis facility Medical Directors; each received a report specific to the clinic with UPIN numbers of the referring nephrologists. Comparative data by state and Network was also included. The purpose of these reports was to stimulate practice changes toward earlier referral for vascular access creation in incident CKD patients in the hope that the use of catheters would be reduced and use of incident AV fistulas would increase. A second report was mailed in November with data for the first 6 months of 2010 and included the Renal Physicians Association (RPA) position paper on the role of the nephrologists in access placement in CKD stages 4-5. Figure 10 illustrates a slight improvement in AV fistula placement and a 3.2% decrease in catheters from 2009 to 2010.

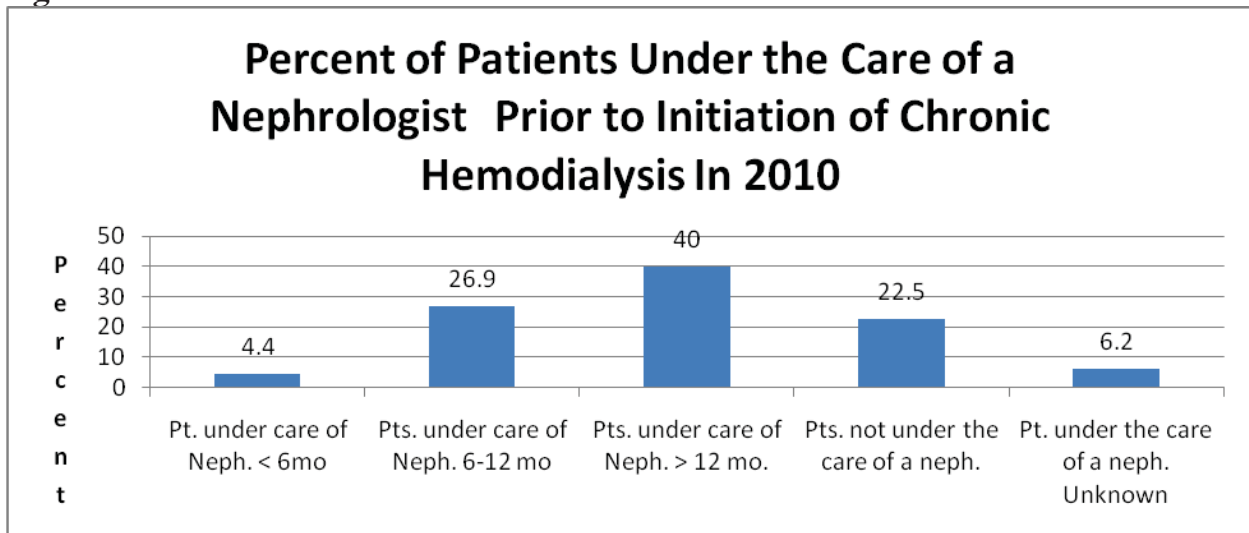
Figure 10



Source: CMS Form 2728

The KDOQI guidelines has a goal of 50% AVF used in incident patients and a 10% catheter rate. There continue to be opportunities for improvement in this area. In 2010, 67% of incident ESRD patients were under the care of a nephrologist for six months or more; however, only 22% started chronic hemodialysis with an AVF (Figure 10). The nephrologists who follow CKD patients prior to the initiation of chronic hemodialysis will need to take a leadership role to drive a system of change for earlier referral for vascular access (Figure 11).

Figure 11



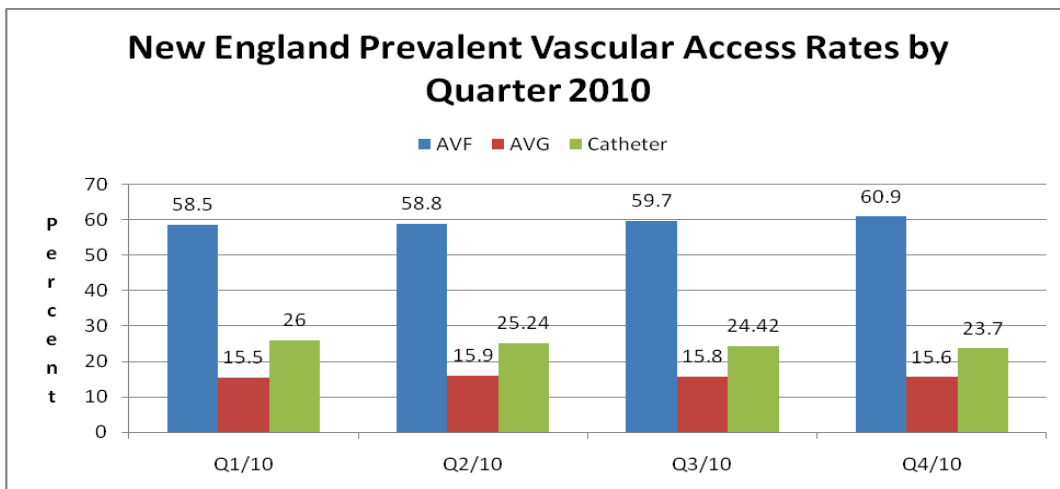
Source: Network of New England 2728 Medical Evidence Reports: 2010

The MRB decided that it was the CKD stage 3-4 population and their caregivers who were not receiving the Fistula First message. The Network communicated with the New England QIOs to request their support in the Fistula First Initiative. The collaboration with the QIOs should help in improving the education of both hospitals and physician office practices on the goal of reducing catheter use and increasing vein mapping for AVF evaluation in the CKD patient.

The Network partnered with Quality Partners of Rhode Island in its CKD special project in 2010 to improve the care of the chronic renal patients in R.I. The Network is an active member of their CKD coalition by providing AVF data and measurement materials.

Prevalent Hemodialysis Population

Figure 12



Source: Monthly provider reports 2010

As shown in Figure 12, the AVF rate in prevalent patients was up to 60.9% by the last quarter of 2010 and the catheter rate decreased to 23.7%. Since the rate for incident patients drives the rate for prevalent patients, a further decrease in the catheter rate in prevalent patients will not be seen until the catheter rate in incident patients can be reduced. The MRB continued awareness and educational endeavors have concentrated on the current chronic population, dialysis facilities, nephrologists, and vascular surgeons. The emphasis has been on education regarding vein preservation and earlier referral to the nephrologists and vascular surgeon for AVF evaluation. The Medical Review Board recognizes that nearly 40% of all patients start dialysis emergently and often catheters cannot be avoided. However, AVF evaluation can be done in the hospital once the patient is stabilized. The other 60% of CKD patients who are being followed by a nephrologist will benefit from early referral for AVF evaluation so that maturation and or revision can take place prior to initiating dialysis.

Fistula First Breakthrough Initiative Activities:

Quarter 1: January, February and March 2010

- Vascular Access Passports and Vessel Preservation cards designed by this Network continue to be very popular as hundreds have been requested and mailed across the country. “The Dialysis Patients Speaks: A Conversation about the Importance of the AV Fistula” an educational DVD with actual New England dialysis patients speaking on their experiences with catheters and fistulas also is a much sought after tool
- A WebEx on how to perform a QAPI with emphasis on improving AVF rates was presented in Jan. 2010 with the target audience of hemodialysis care givers. Feedback and evaluations from the providers indicated that their understanding of the QAPI process was increased
- All hemodialysis clinic managers received provider specific vascular access data feedback reports. Due to the high volume of providers in CT and MA that had less than a 50% AVF, their vascular access management was reviewed on site by the Network QI managers. Providers in ME, VT and RI were contacted by phone for focused interventions (Table G). QAPIs were requested to be submitted to the Network for review. The providers were offered strategies for improvement based on the 13 Fistula First Initiative Change Concepts and given tools to assist in tracking, QAPI templates and catheter planning charts.

Table G: The Variability of Prevalent AVF Rates by State for the First Quarter of 2010

AVF Percent Range	CT	MA	ME	NH	RI	VT	Total
<10%	0	2	0	0	1	0	3
20-29%	0	1	0	0	0	1	2
30-39%	1	1	1	0	0	0	3
40-45%	4	5	0	0	1	1	11
46-50%	7	7	0	0	0	0	14
51-60%	10	28	8	2	5	3	56
61-70%	11	21	4	5	5	3	49
>70%	5	7	5	5	4	0	26

Source: Monthly Provider Reports

- The Network Executive Director participated in the CKD collaborative with Quality Partners of RI held in Providence to increase incident AVF rates, measurement of microalbuminuria in diabetics and to increase the usage of ACE/ARBs in CKD patients. The Network also worked with a RI hospital in collaboration with the QIO to encourage practice changes in the care of both the hospitalized CKD & ESRD patients to increase vein preservation, vessel mapping and early placement of an AV fistula when appropriate
- A tool kit for vascular access education for CKD patients was sent to each nurse practitioner and physician assistant in our data base that was associated with a nephrology practice, dialysis clinic or hospital. Medicare covers CKD education when performed by a physician extender. The tool kit encouraged evaluation and placement of an AVF 3-6 months prior to the initiation of chronic dialysis
- Form 2728 Report cards mailed to 164 dialysis clinic Medical Directors indicating the type of vascular access their patients initiated chronic hemodialysis with and encouraging meeting with their attending nephrologists to improve the AVF rates and decrease the catheter rates

Quarter 2: April, May, and June 2010

- Network of New England QI staff continued with site visits to targeted areas in MA & CT that were underperforming in vascular access management. Quality improvement plans were reviewed and strategies for improvement offered
- ESRD Clinical Performance Measures Lab data reports were mailed to all participating dialysis providers in June 2010. The feedback reports on vascular access by state and Network were included in this mailing.
- The Network's Executive Director and QI manager attended the Quality Partners of RI planning meeting for the CKD coalition. The Network staff volunteered to serve on committees for patient education and policy system change. The Network supplied vascular access data on incident patients in RI.
- Network held two educational days for patient care technicians which included presentations on vascular access assessment and cannulation techniques.
- In June QID staff participated in a WebEx concerning the "HERO" vascular access device.
- QI manager collaborated with DaVita in a educational dinner meeting held for nephrologists and surgeons in the greater Boston area.

Quarter 3: July, August and September 2010

- In July the Network continued with conference calls with Quality Partners of RI for planning for the CKD collaborative and working with the hospital on changes in their CKD care.
- The Network QI manager worked with the FFBI Clinical Practice Group on developing position papers for palliative care dialysis patients as well as avoiding epicardial leads in dialysis patients.
- The QI managers continued to make site visits to all dialysis providers in CT and MA that had less than a 55% AVF rate. Meetings were held with the Medical Director, Clinic Manager and regional administrators. The clinic's vascular management process was reviewed and strategies for improvement were suggested. Each provider had to submit a Quality Assessment Performance Improvement (QAPI) plan and complete a catheter tracking and planning tool.

The Network QI managers maintained monthly phone contact to review progress and offer suggestions to these providers.

- The Network met with Fresenius Medical Care regional leadership to discuss collaborative improvements for the reduction of catheters and increase in the AVF rates.
- Vascular access feedback reports were mailed to 165 dialysis clinic managers with a request to contact the Network if there were any data discrepancies.
- Network emailed and fax blasted “save the date” reminders to all surgeons in the data base regarding the FFBI educational day for vascular surgeons to be held in Chicago. A small subsidy was offered to reduce cost was also offered for “early bird” registration.
- Fourteen (14) providers received letters from CMS signed by the project officer expressing concern over their prevalent AV fistula rates that were less than 50% for over a year. The letter stated that unless improvement to 50% or > by March 2011 was demonstrated sanctions would be considered.
- A Fistula First update was written for Network Notes newsletter for providers. The Network website was also kept current with quarterly data trends by state, network and national rates.

Quarter 4: October, November and December 2010

By December 2010, 59% of 168 eligible hemodialysis providers in New England had a prevalent AVF rate of 60% or greater (Table H). The Network will continue to work closely with the 69 providers with less than a 60% AVF rate in 2010.

Table H: Percent of AVFs by State as of December 2010

Percent of AVFs by State as of December 2010							
AVF Percent range	CT	MA	ME	NH	RI	VT	Total
10% or less	0	1	0	0	1	0	2
11-39%	3	4	0	0	0	1	8
40-49%	6	5	1	0	1	0	13
50-59%	14	20	8	1	1	2	46
60-69%	12	30	4	7	6	4	63
70% or >	7	8	5	5	10	1	36
Total	42	68	18	13	19	8	168

Source: Monthly Provider FF Data

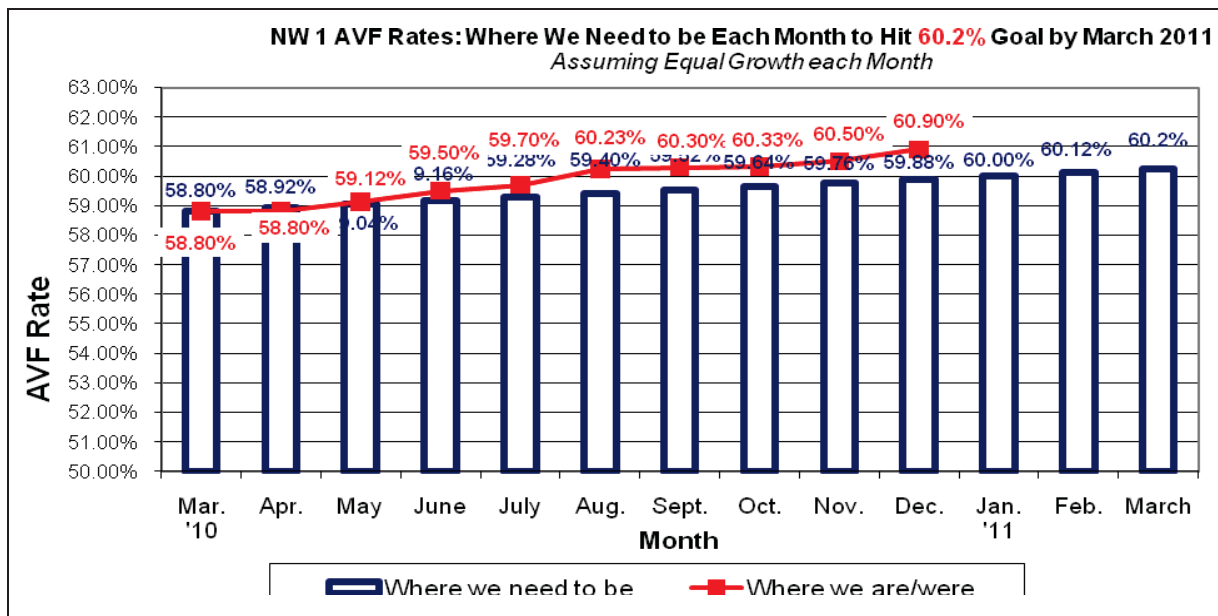
- The Network of New England had a conference call with MassPro QIO to discuss contact information for Boston hospitals to ascertain key stakeholders involved in CKD & ESRD vascular access placement.
- The Network’s 21st Annual Meeting was held in Sturbridge, MA, in Oct., with over 600 attendees. Several presentations on vascular access as well as awards given to those providers with a 66% or greater prevalent AV fistula rate for the entire year (June 2009 to June 2010).
- Site visits continued to be conducted with providers having less than 50% AVF and phone contact was made with all providers <66% AVF to give technical assistance for increasing the

AVF rate and decreasing catheters. QAPI templates and a catheter planning tool were shared with the clinics.

- Feedback reports were mailed to all 168 eligible providers. Medical Directors, clinical managers and regional administrators were made aware that the Network had the authority to report Medicare certified dialysis providers to CMS that were not meeting quality care indicators. The cover letter gave every provider a specific percent increase to be reached by March 2010 as well as a reminder that the Conditions of Coverage specifies that the clinics governing body and CEO were to act upon the recommendations from the ESRD Network.
- All providers were asked to notify the Network if there were any discrepancies in the vascular data reports.
- Eight vascular surgeons from New England attended the FFBI education day in Chicago, IL
- A second 2728 report card on incident patients vascular access at initiation of dialysis was distributed to 168 Medical Directors.

The following figure (Figure 13) indicates that the ESRD Network of New England was able to achieve the March 2011 prevalent AVF goal of 60.2% in August 2010 due to all the hard work of the facilities hemodialysis, nephrologists and vascular surgeons.

Figure 13

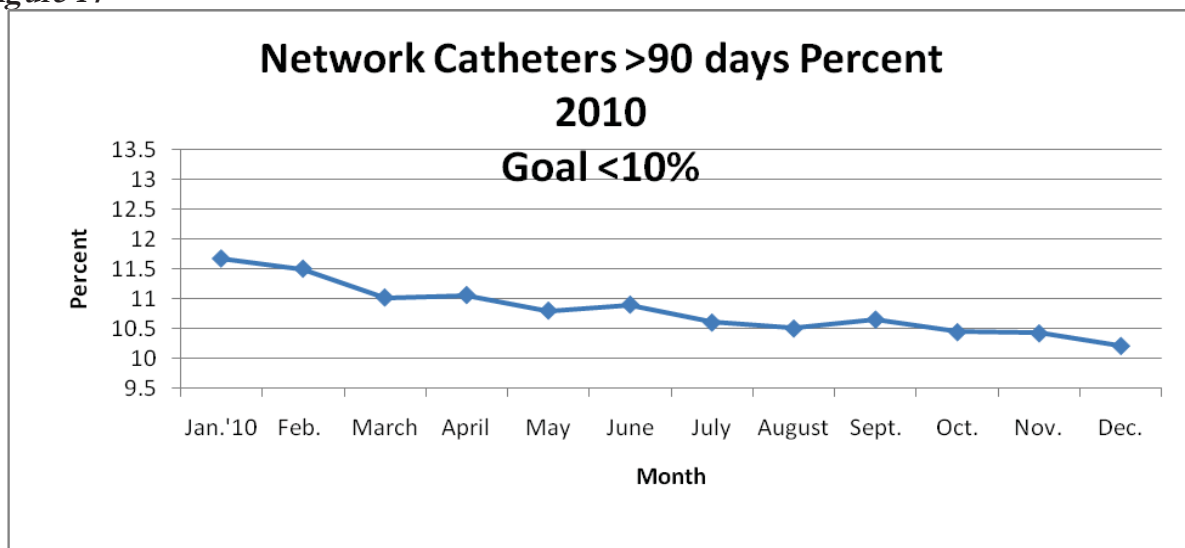


Source: Fistula First Dashboard

▪ ***Catheter Reduction in Hemodialysis Patients***

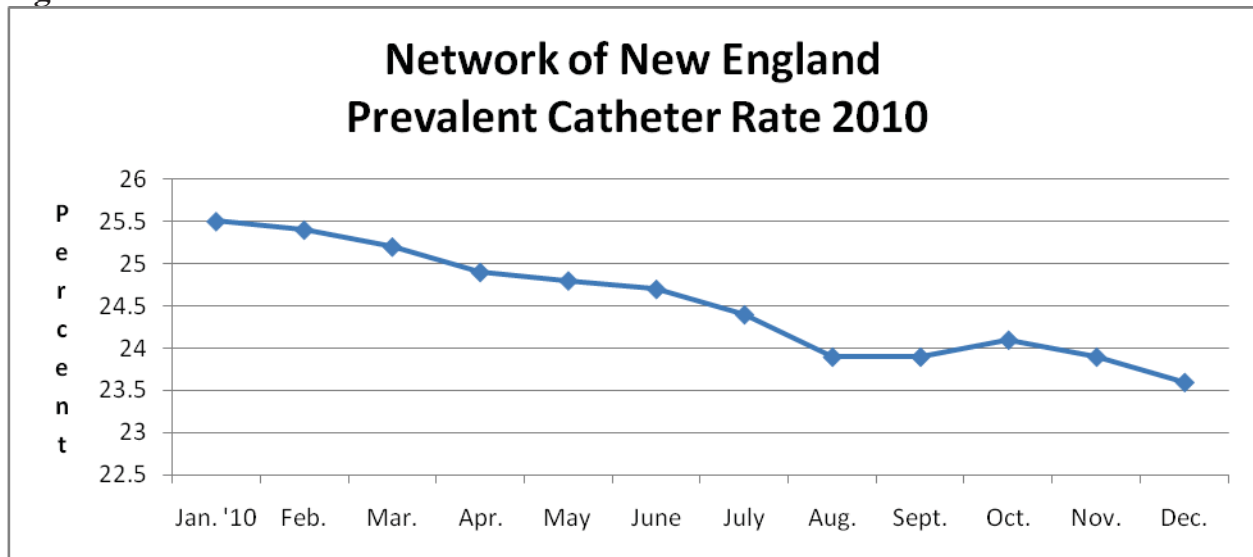
Use of catheters for long term vascular access should be discouraged due to the increased morbidity associated with infections, susceptibility to thrombus and inconsistent circulation of blood through the dialyzer due to possible spasm in bloodline. A catheter placed in a hemodialysis patient greater than 90 days is considered long-term and should be evaluated by the medical team to develop a plan to remove the catheter whenever possible. The increased complications of catheters create an increase in medical or surgical interventions and hospitalization thus reducing the quality of life for those patients and risk increasing higher mortality rates. Long-term catheters should be reserved as the last choice for vascular access except in a specific subset of patients such as pediatric patients soon to be transplanted and those patients with severe co-morbidities such as congested heart failure (CHF), severe peripheral vascular disease (PVD), the very elderly, patients with inadequate vascular anatomy, or patients with limited life expectancy. Catheter placement should be used in conjunction with a plan for a different permanent access. The Medical Review Board of the Network of New England has determined that the prevalent long term catheter rate needs to be reduced to less than 10%.

Figure 14



Source: Provider Reports based on Dashboard Data

The 90 day catheter rate has declined 1.46 % to 10.21% (Figure14) and the prevalent catheter rate decreased 1.9% over the course of this year. The Medical Review Board is encouraged by this downward trend. However, catheter utilization remains unacceptable with 23.6% of prevalent hemodialysis patients with catheters particularly given the morbidity and mortality associated with their use (Figure 15).

Figure 15

Source: *Fistula First Dashboard*

The data reported on the Medical Evidence Form has been used to generate a physician practice performance report. The Medical Evidence Form provides information on how long a patient has been in the care of the nephrologists prior to first chronic dialysis treatment, and the type of access used at initiation. Physician Profile Reports were mailed to each practice group with an evaluation tool. The intent of the report was to stimulate the nephrologists to review practice patterns and to develop strategies to increase the incident AVF rate and reduce the catheter only rate. The catheter trend indicates the nephrologists are working on decreasing catheters, however if more CKD stage 4 patients were referred for vessel mapping and vascular access placed both the incident and prevalent catheter rates would be much lower. Sixty seven (67%) of new ESRD patients in New England have been followed by nephrologists' for 6 months prior to ESRD and of these 40% were followed for longer than a year. It is challenging for physicians to ascertain exactly when a patient will cross the line to End Stage Renal Failure but consideration should be given to vascular access evaluation when the GFR <30 (CKD stage 4) and patient chooses hemodialysis for treatment.

Clinical Performance Measures (Task 1b)

▪ National CMS Clinical Performance Measures Project

The ESRD Clinical Performance Measures (CPM) Project, a national effort conducted by CMS and the 18 ESRD Networks was designed to give dialysis providers, the renal community and public policy agencies a report of clinical measures for determining Network level comparative quality performance data. This CPM project has changed to a 100% national provider sample known as the Annual laboratory Data Collection.

CMS has contracted with Network 11 to coordinate the project by working with independent dialysis facilities and the large dialysis organizations (LDOs) to collect laboratory data on 100% of dialysis patients. The LDOs submit data electronically to Network 11 and the independent dialysis

facilities submit data to their individual Networks. Network 11 merges all the data and returns comparative analysis data files to each Network. The data collected was for the 4th quarter of 2010. Network 1 has been involved in this voluntary project since 1999.

Upon completion of the merged data, Network 11 produces the following reports:

- Facility Characteristics
- HD Quality Indicators (tabular and graphic)
- PD Quality Indicators (tabular and graphic)
- HD Percentile Ranking
- PD Percentile Ranking
- HD Means and Median Report
- PD Means and Median Report

When the data files are received from Network 11, a unique provider specific report is prepared and distributed to all freestanding and hospital based providers in New England to allow each provider to see their performance compared to Network 1.

The Medical Review Board (MRB) annually evaluates this comparative data to benchmark the clinical performance indicators of New England as compared to national and other Network's results (Table I). The Medical Review Board selected one clinical measure (anemia management) for CPM quality improvement activity and a project assessing three clinical measures as a composite review of provider performance. The year to year variation and comparison to national and other Networks informs the MRB on where to focus QI efforts and adjust Network target clinical goals.

**Table I: Comparative Trend Data by Clinical Indicator
Hemodialysis Patients**

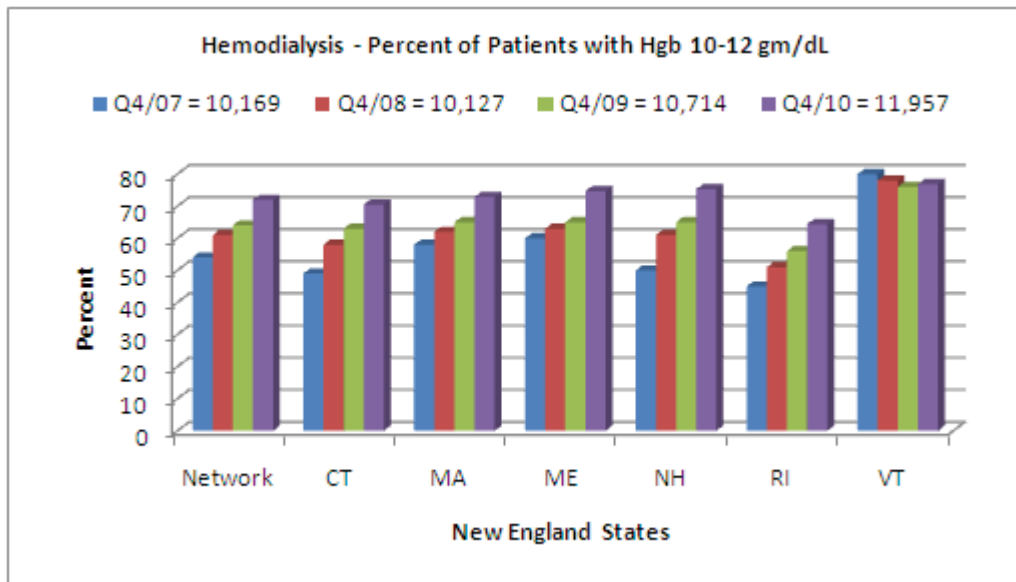
INDICATOR	CMS Target	Network Threshold 2010	Network Lab Data 2006	Network Lab Data 2007	Network Lab Data 2008	Network Lab Data 2009	Network Lab Data 2010	US Lab Data 2010
			9,333 Patients	9,440 Patients	10,127 Patients	10,714 Patients	10,819 Patients	354,305 Patients
Mean URR % \geq 65	80%	92%	91%	91%	91%	93%	93%	91.1%
Mean KT/V \geq 1.2	84%	94%	94%	95%	95%	96%	96%	95.3%
% Pts with mean Hgb < 10 g/dL	N/A	<10%	4%	5%	5%	6%	6.9%	6.6%
% Pts with mean Hgb 10-12 g/dL	N/A	80%	47%	54%	61%	64%	71.9%	68.4%
% Pts with mean Hgb 10-10.9 gm/dL	N/A	N/A	N/A	N/A	N/A	47%	21.2%	19.7%
% Pts with mean Hgb between 11-12 gm/dL	N/A	N/A	-	-	-	64%	50.7%	48.7%
% Pts with mean Hgb between 12.1 – 12.9 gm/dL	N/A	N/A	N/A	N/A	N/A	26%	17.5%	20.2%
% Pts with mean Hgb \geq 13 gm/dL	N/A	10%	15%	10%	6%	5%	3.7%	4.8%
Mean Tsat % \geq 20%	80%	80%	79%	80%	84%	84%	84%	87%
Mean Serum Ferritin % > 200-800 ng	N/A	N/A	-	-	-	63%	59.7%	57.6%
Mean Serum Ferritin > 800	N/A	N/A	-	-	-	25%	29%	34.6%
Prevalent Pts with Serum Albumin \geq 4.0/3.7 gm/dL BCG/BCP	35%	35%	31%	35%	34%	34%	38.2%	39.1%
Prevalent Pts with Serum Albumin \geq 3.5/3.2 gm/dL BCG/BCP	80%	80%	80%	83%	81%	81%	83%	84.6%
Phos 3.5-5.5 mg/dL	N/A	54%	-	55%	54%	54%	54.8%	55.3%
Ca 8.4-10.2 mg/dL	N/A	80%	-	81%	79%	80%	80.8%	82.5%

**Preliminary data as of May 2011*

Anemia

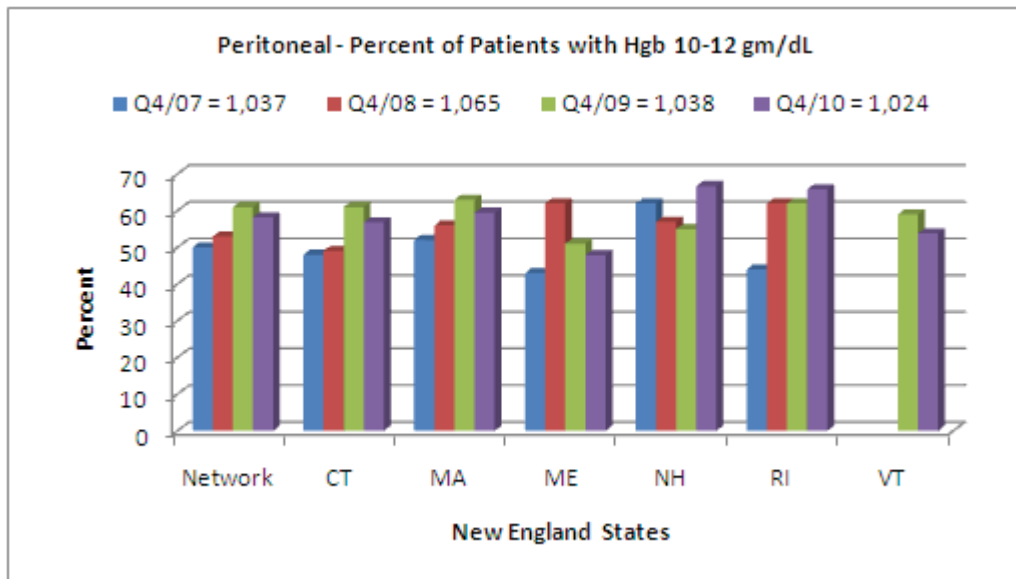
Anemia develops for all patients with chronic kidney disease (CKD) and is a risk factor for clinical complications and quality of life. The Medical Review Board has been evaluating trends focusing on Hgb levels between 10-12 gm/dL. This Network’s hemodialysis Hgb levels increased to 72% between 10-12 gm/dL, an increase of 8% since the prior data collection in 2009 (Figure 16). (NOTE: The recent FDA black box warning on risks associated with Erythropoiesis Stimulating Agents (ESAs) is having an impact on anemia treatment protocols that are resulting in more hemodialysis patients with Hgb levels in the 10-12 gm/dL range.

Figure 16



Source: ELab Data Collection – Data Used from 4th Quarter of Previous Year.

Figure 17



Source: ELab Data Collection

Three Clinical Measures

Provider specific trend data from this voluntary lab data collection were used to generate feedback reports. The main QI intervention focus was on providers that did not meet Network thresholds in two out of three clinical performance measures in the Q4/2009 E-lab data collection:

- 94% of patients had a KT/V of 1.2 or >
- <10% of patients had a hgb of 10gm/dL
- 54% of patients had a serum phosphorous (PO4) of 3.5-5.5

The interventions were based on scripted phone interviews with facility nurse manager, conducted by Network QI staff. There were 12 providers that did not meet the thresholds in two out of the three measures. Quarterly, the individual providers were contacted by phone and asked to send the Network a copy of their quality assessment performance improvement (QAPI) as well as quarterly labs indicating the percent of patients with KT/V=1.2 or >, the percent of patients with a hgb <10 gm/dL and the percent of patients with a serum phosphorous of 3.5-5.5 mg/dL.

Table J: Providers not Meeting Thresholds in 2 out of 3 Measures

		Goal for PO4 => 54% of pts. are 3.5-5.5			Goal for Hgb<10 <10% of pts.		
provider	Census	% of Pts with PO4 3.5-5.5 Q4/09	% of Pts. PO4 3.5-5.5 Q3/10	% of Pts. PO4 3.5-5.5 Q4/10	% of Pts Hgb <10 Q4/09	% of Pts Hgb <10 Q3/10	% of pts Hgb <10 Q4/10
1	68	47.7	59	54	10.4	13	6.6
2	108	49.40	62	61.2	10.8	19 (QAPI)	22.3
3	43	53.50	67	62.2	11.6	5.3	8.1
4	84	51.20	54	55.8	9.76	9.76	6.5
5	83	50.60	61	56.6	10.7	26 (QAPI)	14.5
6	37	41.70	57	54	14.5	13 (QAPI)	34.6
7	59	53.40	63	38.6	21.6	12(QAPI)	17.5
8	69	46.40	61	54.2	17.2	13(QAPI)	9.6
9	82	52.40	58	56.8	10.2	11(QAPI)	8.4
10	19	50.00	50%(QAPI)	40	11	8	9
11	42	52.50	44%(QAPI)	51.4	27.8	8	18.9
12	76	44.00	54	48	12	10(QAPI)	14.7

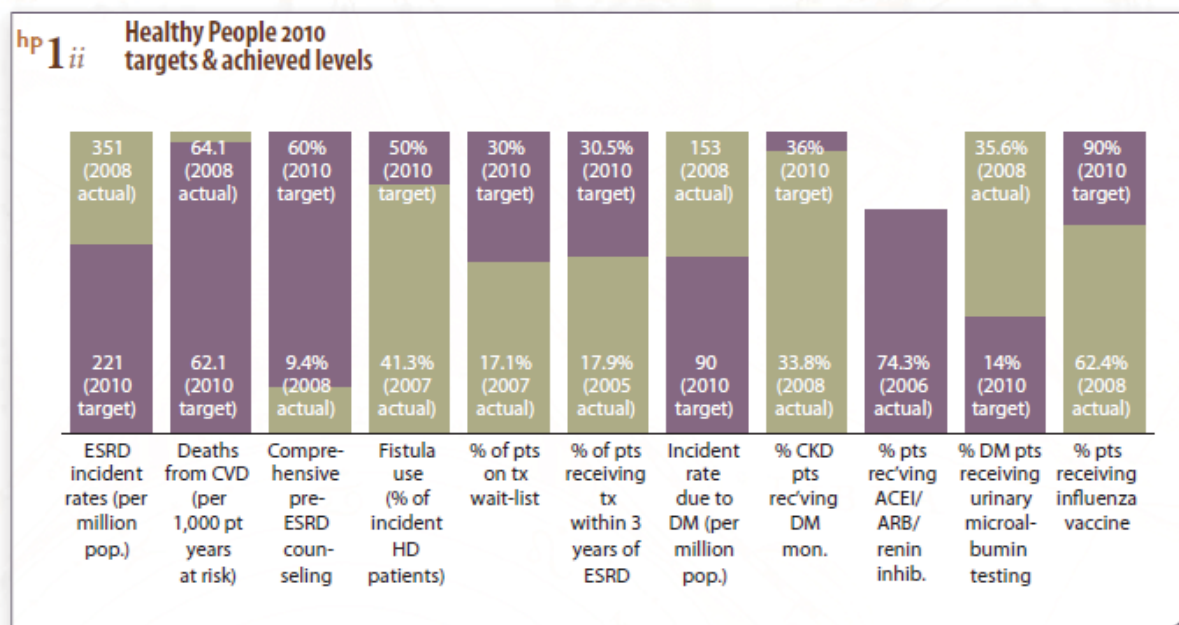
As depicted in Table J, 50% of the 12 providers continue to have difficulty with maintaining or sustaining the percent of patients with an hgb of less than 10g/dL by the last quarter of 2010. The reasons cited are patients returning post hospitalization or surgery who had not received ESA, metastatic disease or chronic GI bleeding creating a decrease in hgb. Anemia protocols have been revised with more emphasis on iron administration to increase Ferritin levels to 800ng or higher which has been suggested to improve the response to the ESA. Four out of 12 providers continue to work on improving the percent of patients with a serum phosphorous of 3.5 to 5.5 mg/dL. Dietary counseling and reinforcement of the importance of limiting PO4 intake as well as the consistent intake of PO4 binders with meals have been the main interventions utilized.

Network Specific Improvement Project

- **Immunization Project**

The most recent Influenza vaccination data available on ESRD patients receiving the vaccine is from the 2009 United States Renal Data System (USRDS) report which contains 2007 vaccination data. The national vaccine rate based on Medicare claims data was 59.4%. The Healthy People 2010 goal for ESRD immunization vaccination is 90% (Figure 18).

Figure 18



Source: 2010 USRDS Annual Report 2008 data

Influenza is responsible for approximately 39,000 deaths per year in the US according to the Centers for Disease Control (CDC). Dialysis patients have compromised immune systems and multiple comorbid conditions that place them at a high risk of medical complication from influenza. Thus, this low vaccine rate of 62.4% for dialysis patients is an opportunity for improvement. A project was started in 2009 to determine the current vaccine rate in Network 1 was designed to obtain the vaccine rate for 2008 and compare it to 2009 by obtaining aggregate provider level data from the

three large dialysis organizations (LDOs) in the region (Fresenius Medical Care, DaVita and Dialysis Clinics Inc.) because it was known that these three organizations collect patient vaccination data across the country. Therefore, no additional reporting burden would be placed on the provider staff to compile this information to submit to the Network. Educational materials, eblast reminders and CDC notifications were sent during the late summer and early fall by the Network to all dialysis providers about the importance of vaccination.

The result of last year's project is that of the 8,352 dialysis patients offered the vaccine; 6,233 patients (adjusted for patients with allergies), 75% received the influenza vaccine in 2009/2010.

Since immunization for seasonal flu is a high CMS priority, the Medical Review Board (MRB) decided to do this QI project again in 2010/2011 by inviting the hospital and independent providers to participate with the LDOs by submitting provider-level immunization vaccination information. The MRB set a Network goal of an 80% vaccination rate. The Network, during the year, provided educational materials, posters and e-blasts to promote the importance of seasonal vaccination for patients and staff.

The result of these efforts is that variation in vaccination rates was noted with one LDO having a high percent of patients with no data reported. The Network and the LDO are investigating underlying causes for this data abstraction problem (Table K).

Table K

Seasonal Flu Vaccination Results (Preliminary Data)

	Year	
	2009/2010	2010/2011
Group 1	79%	86%
Group 2	91%	92%
Group 3	45% only in provider	69%
Group 4	63%	61%

Notes: The 2009-2010 project had only Large Dialysis Organizations. Data Submitted by corporation representative. The 2010-2011 project requested independents/hospitals to volunteer to participate by submitting data to the Network for both years. Large Dialysis Organizations submitted by corporation representative.

Facility Level Quality Assessment (Task 1d)

▪ **5 Diamond Safety Project**

In 2007, Network of New England (NW1) and Mid-Atlantic Renal Coalition (NW5) began the development of the web-based 5 Diamond Patient Safety Program to be used by dialysis providers as a template for in-service training for dialysis staff and patients. This voluntary program was launched in April 2008 (see www.networkofnewengland.org/5Diamond.htm) and has gained momentum ever since. The purpose of this project is to provide dialysis providers with developed staff educational modules on different safety topics. Providers register to participate in the program and can select from a variety of safety modules, which include the tools and training resources necessary for implementation of each patient safety concept. Facilities may complete as many or as few components as they wish, with only one module, 'Patient Safety Principles', being mandatory.

As each module is completed, the provider submits a reporting form to the Network, which acknowledges finished activities. Levels of provider recognition have been established as providers move from 1 diamond status to 5 diamonds. This voluntary program is an excellent complementary tool for identifying internal quality improvement opportunities. The initial launch of the program contained eight modules. They were:

- Patient Safety Principles (mandatory module)
- Hand Hygiene/Infection Control
- Influenza Vaccination
- Slips, Trips and Falls
- Emergency Preparedness
- Sharps Safety
- Decreasing Dialysis Patient Provider Conflict
- Medication Reconciliation

In 2010, three additional modules were developed to enhance the program. They are:

- Health Literacy
- Patient Self-Managed Care
- Stenosis Surveillance

The goal of this safety initiative is to help dialysis facilities spread patient safety principles among both staff and patients.

- To build a patient safety culture in every dialysis unit
- To promote patient safety values
- To create an awareness of patient safety issues
- To help dialysis units learn more about specific areas of patient safety

In November 2010, the Community Development Coordinator co-presented (with NW5) the 5-Diamond Patient Safety Program at the QNET meeting in Baltimore, MD to approximately 50 attendees (in safety session) to solicit interest for launching the program in other Networks and answer questions about implementation. The success of this program, along with good marketing efforts, resulted in 6 other Networks incorporating 5-Diamond as part of their QI activities. CMS Central Office (OCSQ) showed interest in the content and structure of the program through an inquiry in 2010. ANNA and RPA organizations also publically indorsed this initiative.

As of December 2010, there were 56 providers (33.9%) registered in this program of which 41 providers (73.2%) achieved diamond status by completing at least 1 module. Twenty-five providers successfully completed the required modules in the program to earn 5-Diamond status.

All facilities that complete modules receive a letter of recognition and are listed on the Network of New England website. Facilities that complete the program, and achieve 5-Diamond status, receive a letter from the Chairperson and a plaque, as well as being recognized in the *Network Notes*

newsletter. These facilities are also acknowledged at the Network Annual Educational Meeting and receive 2 complimentary passes to attend.

▪ ***Standardized Mortality Ratio (SMR)***

Each year, the University of Michigan Kidney Epidemiology and Cost Center (UM-KECC) under contract from CMS develops and distributes through ESRD Networks a facility quarterly report. This extensive report provides trend (4 years) facility information compared to the local state, Network and national experience on several clinical measures. Several sources of information are used for this analysis such as Medicare claims, hospitalization events, and CMS ESRD specific forms.

Three of the clinical performance measurements for each provider from this report are posted on the Dialysis Facility Compare website (www.cms.gov/DialysisFacilityCompare).

The measures are:

- Percent of patients receiving adequate dialysis as measured by using single pool uremia reduction ratio (URR)
- Percent of patients receiving acceptable anemia management as measured by acceptable hemoglobin ranges and treated with ESA
- Patient survival as measured by a statistical formula to compare to expected survival based of patient characteristics and co-morbid conditions.

Data files on individual provider performance developed by the University of Michigan Kidney Epidemiology and Cost Center (KECC) are provided annually to the Network. The Medical Review Board uses the patient survival 4-year trend data as a quality of care outcome measure. The analysis is expressed as a standardized mortality ratio (SMR). Providers with excessively high SMR's require quality assurance review. The SMR calculates the expected mortality rate compared to the actual mortality rate resulting in a ratio where 1.0 is the standard. Any ratio above 1.0 is a higher mortality rate than expected. Below 1.0 is lower (better) than expected. The patient census is adjusted for specific patient case mix variables associated with survival outcome. The provider listed in the Dialysis Facility Compare website as having an adjusted survival rate of "worse than expected" that is statistically significant is investigated by the Network staff for underlying causes. In July 2008 to June 2009 cycle, 6 providers with "worse than expected" SMR were identified. In the July 2009 to June 2010 cycle, 5 providers were identified as "worse than expected." Three of the six providers from the prior year scored with a high SMR. Two new providers were added to the assessment process. The prior year, three providers with high SMR had lowered the SMR for the past year. However, the calculation is a 4-year average SMR so they still have a high SMR, but improving due to better reporting of co-morbid conditions and infection management. These five providers represent less than .04% of dialysis providers in New England.

Table L: SMR 4 Year Average Scores

SMR 4 Year Average Scores		
KECC Data	2005-2008	2006-2009
Providers “worse than expected”	6	5
Network Assessment	July 2009 – June 2010	July 2010 – June 2011
Method	Telephone Interventions	Telephone and/or Site Visit

Action Taken:

- All providers had structured interviews with focus on internal mortality review process.
- Instructional sessions on assessment of underlying causes were conducted. Two reoccurring patterns continue to be observed:
 1. The Form 2728 was not always completed for reporting co-morbid conditions which is used for adjustment of risk factors contributing to survival calculation.
 2. As patients continue on dialysis for several years, they develop more co-morbid conditions which are not reported into any national database. Increased co-morbid conditions contribute to higher risk of dying. More research by KECC needs to be done to understand the degree to which these factors impact the SMR methodology.

OTHER QUALITY IMPROVEMENT ACTIVITIES IN 2010**Infection Control Issues**

Clinical inquiries from dialysis providers often focused on infection control issues in 2010. The most common issues addressed by the Network QI staff were:

- Calculation of infection rates
- Caring for patients with C-difficile, MRSA, VRE or TB
- CDC guidelines on Hepatitis B, C and A
- OSHA regulations concerning staff protection
- Changing patients surgical dressings in the dialysis unit
- Influenza and pneumococcal vaccinations
- Regulations concerning the patient isolation room

FFBI Committee Work

The Medical Quality Manager was an active participant on two FFBI national work groups: 1. The Clinical Practice Workgroup met monthly to work on a white paper concerning epicardial lead use in patients with advanced stages of chronic kidney disease. 2. The Website Revision Work group task was to update and revise the FFBI national website: www.fistulafirst.org.

Clinical Technical Assistance

Network 1 is fortunate to have very knowledgeable multidisciplinary members of the Network Board of Directors and Medical Review Board. Those members have volunteered to assist the Network staff with clinical questions and other issues that might be beyond the scope of the resources in the Network office.

While Network 1 can provide educational resources, staff always advise patients to check with their own physicians for comprehensive and specific answers to their questions. Many website resources are from professional and well-recognized reliable sources. Utilizing the team approach, Network 1 has a Patient Services Manager and two Medical Quality Managers (RNs) along with the Network staff, handled a number of clinical inquiries during 2010. These included:

- Acute dialysis issues that impact chronic dialysis patients
- Adequacy of dialysis
- Advance Practice Nurses/Physicians' Assistants in nephrology settings
- Articles on a variety of subjects (vascular access, infection control, cost containment, quality improvement, miscellaneous clinical issues, etc.)
- Behavior problems (management of patients/educational guidelines for staff)
- CQI resources (articles, educational programs, tool sheets)
- Dialysis of patients in rehabilitation centers or skilled nursing facilities
- Educational websites for staff and patients
- JACHO survey procedures
- LPN practice
- OSHA regulations
- Pediatric management issues
- Safety/security issues in dialysis facilities
- Water treatment management

Collaboration on Disparity Project

Network 1 and six (6) other Networks have started to collaborate on analysis of patient and provider characteristics that may be associated with access to care and the future payment reductions under the CMS Quality Incentive Program. Preliminary multivariate analysis indicates that small dialysis units may have a higher risk of payment reductions. More work in 2011 will be done to provide a basis for technical assistance to providers

ELab

The Network Quality Manager served on a committee hosted by Network 11 to redesign the comparative ELab reports that will be used in 2011 as feedback report to dialysis providers.

Acute Dialysis Programs

While acute dialysis facilities are not in the scope of work for Network 1, the Network receives requests for assistance from acute care staff seeking clinical information. Network 1 provides as much information as possible, since the staff caring for acute dialysis patients has a large impact on ESRD care. Network 1 also sends meeting brochures to acute dialysis staff for the Network 1 educational programs. In addition, Network staff communicates with the specific health departments when there are any dialysis water treatment issues that would affect acute dialysis facilities.

Assisting Facilities with Continuous Quality Improvement Activities

There has been an increase in requests for technical assistance with quality improvement management techniques, particularly for new dialysis Nurse Managers. The Network staff assisted providers with in depth QI information, which includes sample run charts, tracking/trending sheets, and tools from other QI sources. Network 1 continues to incorporate the concept of Quality Improvement in each Annual Network Meeting.

This year, the Network Quality Manager developed, with the assistance of a nurse educator, a WebEx on quality assessment and performance assessment principles. This WebEx was given in January of 2010 to New England provider leadership. It is posted on the Network website as a QI resource.

Achieving Network 1 Goals in Quality of Care and Safety

The outcome and process measurements reported in the national clinical indicator projects and the ELab Data project demonstrates an increased number of patients in New England achieving acceptable K-DOQI benchmarks. In the past year, this Network has exceeded the CMS target of patients having a URR > 65% $KT/V \geq 1.2$ and serum albumin > 4.0/3.7 gm/dL. Collective educational efforts by physicians, administrators, and dialysis patient care teams, and the collaborative role of Network 1 have contributed to improvement in these CMS indicator targets. This Network has made improvements in anemia management and ≥ 90 day catheter reduction. Network 1 successfully completed, and CMS approved the Annual QI Work Plan. As of December 2010, the Network has achieved the AVF goal of 60.9% which exceeds the CMS goal of 60.2% for March 2011. The Network is excited about the positive response from providers about the 5 Diamond Patient Safety Project.

The Medical Review Board has been increasingly aware of the benefits of collaboration within the renal community. The Fistula First Initiative offers new challenges to expand relationships with vascular surgeons, interventional radiologists, acute care settings, and QIOs. The CKD project relationship with RI Quality Partners has been positive and helpful in identifying new partners to have a positive impact on CKD management.