Appendix A: Proposed New ESRD CPMs

Anemia Management/Iron Targets					
	Measure Name	Description	Numerator	Denominator	Exclusions
1.1	Assessment of Iron Stores	Percentage of all adult (>= 18 years old) dialysis patients for whom serum ferritin and TSAT are measured simultaneously at least once during the three-month study period.	Number of patients in the denominator for whom serum ferritin and TSAT are measured simultaneously at least once during the study period. Simultaneous measurements are those reported with the same collection date	All adult (>=18 years old) hemodialysis or peritoneal dialysis patients in the facility for the entire three-month study period.	None
1.2	Use of Iron Therapy When Indicated	Percentage of all adult (>= 18 years old) dialysis patients with a serum ferritin < 100ng/mL and a TSAT < 50% on at least one simultaneous measurement who received IV iron in the following three months.	Number of patients in the denominator who received IV iron within three months following the first occurrence of serum ferritin <100 ng/mL and TSAT <50% during the study period.	All adult (>=18 years) hemodialysis and peritoneal dialysis patients in the facility for the entire three-month reporting period who had serum ferritin <100 ng/mL and TSAT <50% on at least one simultaneous measurement reported during the three-month study period. Simultaneous measurements are those reported with the same collection date.	1. Patients with mean hemoglobin > 12 who did not receive an ESA during the 3 month study period. The last recorded hemoglobin value of each month of the study period will be used in calculating the mean. 2. Patients with documented history of anaphylaxis to IV iron products
1.3	Avoidance of Iron Therapy in Iron Overload	Percentage of all adult (>= 18 years old) dialysis patients with a serum ferritin >= 1200 ng/mL or a TSAT >= 50% on at least one simultaneous measurement during the three-month study period who did not receive IV iron in the following three months.	Number of patients in the denominator who did not receive IV iron within three months following the first occurrence of serum ferritin >= 1200 ng/mL or TSAT >=50% during the study period.	All adult (>=18 years) hemodialysis and peritoneal dialysis patients in the facility for the entire three-month reporting period who had serum ferritin >=1200 ng/mL or TSAT >=50% on at least one simultaneous measurement reported during the three-month study period. Simultaneous measurements are those reported with the same collection date.	

Mineral and Bone Disorder					
	Measure Name	Description	Numerator	Denominator	Exclusions
2.1	Upper Limit for Total Uncorrected Serum Calcium	Proportion of patients with 3-month rolling average of total uncorrected serum calcium greater than 10.2 mg/dL	Number of patients in the denominator with 3-month rolling average of total uncorrected serum calcium greater than 10.2 mg/dL. If there are multiple serum calcium measurements during the month, the last value will be used for the calculation.	Number of adult (>= 18 years old) hemodialysis or peritoneal dialysis patients treated at the outpatient dialysis facility for at least 30 days who have been on dialysis for greater than 90 days with at least one calcium measurement during the prior 90 days	None
2.2	Lower Limit for Serum Phosphorus	Proportion of patients with 3-month rolling average of serum phosphorus less than 2.5 mg/dL	Number of patients in the denominator with 3-month rolling average of serum phosphorus less than 2.5 mg/dL. If there are multiple phosphorus measurements during the month, the last value will be used for the calculation.	Number of adult (>= 18 years old) hemodialysis or peritoneal dialysis patients treated at the outpatient dialysis facility for at least 30 days who have been on dialysis for greater than 90 days with at least one phosphorus measurement during the prior 90 days	None

Hemodialysis Vascular Access Related Infections					
	Measure Name	Description	Numerator	Denominator	Exclusions
3.1	IV Antibiotic Therapy (rate)	Six-month rolling average rate of initiating IV antibiotic prescription therapy for newly suspected infection among adult chronic HD patients	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection among adult chronic hemodialysis patients during the six-month period ending with the current reporting month	All adult (age 18+) chronic maintenance HD patient days during the six-month period ending with the current reporting month	HD patients < 18 yrs old
3.2	Clinically Confirmed Infection *(rate)*	Six-month rolling average rate of clinically confirmed infection with IV antibiotic therapy among adult chronic HD patients	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month, and for which the infection was clinically confirmed	All adult (18+) chronic maintenance HD patient days during the six-month period ending with the current reporting month	HD patients < 18 yrs old
3.3	Clinically Confirmed Infection *(percentage)*	Six-month rolling average prevalence of clinically confirmed infection among HD patients prescribed IV antibiotics	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month, and for which the infection was clinically	Number of months that adult (18+) HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month	HD patients < 18 yrs old

Hemodialysis Vascular Access Related Infections					
	Measure Name	Description	Numerator	Denominator	Exclusions
			confirmed		
3.4	Bacteremia (*rate*)	Six-month rolling average rate of bacteremia with IV antibiotic therapy, among adult chronic HD patients	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month, and for which blood cultures were consistent with bacteremia.patients during the reporting month	All adult (18+) chronic maintenance HD patient days during the six-month period ending with the current reporting month	HD patients < 18 yrs old
3.5	Bacteremia (*percentage*)	Six-month rolling average prevalence of bacteremia among adult chronic HD patients prescribed IV antibiotics	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month, and for which blood cultures were consistent with bacteremia.	Number of months that adult (18+) chronic maintenance HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month.	HD patients < 18 yrs old
3.6	VA-Related Infection *(rate)*	Six-month rolling average rate of hemodialysis vascular access-related infection with IV antibiotic therapy and a clinically confirmed infection among adult chronic HD patients	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the clinically confirmed infection was related to the hemodialysis access	All adult (18+) chronic maintenance HD patient days during the six-month period ending with the current reporting month	HD patients < 18 yrs old
3.7	VA-Related Infection *(percentage)*	Six-month rolling average prevalence of hemodialysis access-related infection among adult chronic HD patients with a clinically confirmed infection and prescribed IV antibiotics	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the clinically confirmed infection was related to the hemodialysis access	Number of months that adult (18+) chronic maintenance HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was clinically confirmed.	HD patients < 18 yrs old
3.8	VA-Related Bacteremia *(percentage)*	Six-month rolling average prevalence of bacteremia among adult chronic HD patients with a hemodialysis access-related infection and prescribed IV antibiotics	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month, and for which blood cultures were consistent with bacteremia and infection was hemodialysis access-related.	Number of months that adult (18+) chronic maintenance HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the hemodialysis access.	HD patients < 18 yrs old
3.9	Catheter-Related Infection	Six-month rolling average rate for access-related infection with IV antibiotic therapy, among adult	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting	Number of HD *catheter* days during the six-month period ending with the current reporting month in adult (18+) chronic maintenance HD patients.	

Hemodialysis Vascular Access Related Infections					
	Measure Name	Description	Numerator	Denominator	Exclusions
	(rate)	chronic HD patients using a catheter for hemodialysis access	month and for which the infection was related to the *catheter* used as hemodialysis access.		
3.10	Catheter-Related Infection *(percentage)*	Six-month rolling average prevalence of hemodialysis catheter-related infection among adult chronic HD patients with a HD access-related infection and prescribed IV antibiotics	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was clinically confirmed and related to the catheter used as hemodialysis access.	Number of months that adult (18+) chronic maintenance HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the HD access.	
3.11	Catheter-Related Bacteremia (*rate*)	Six-month rolling average rate for access-related bacteremia with IV antibiotic therapy, among adult chronic HD patients using a catheter for hemodialysis access	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the *catheter* used as hemodialysis access, and blood cultures were consistent with bacteremia.	Number of HD *catheter* days during the six-month period ending with the current reporting month in adult (18+) chronic maintenance HD patients.	
3.12	Graft-Related Infection *(rate)*	Six-month rolling average rate for access-related infection with IV antibiotic therapy, among adult chronic HD patients using an arteriovenous graft for hemodialysis access	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the *arteriovenous graft* used as hemodialysis access.	Number of HD *arteriovenous graft* days during the six-month period ending with the current reporting month in adult (18+) chronic maintenance HD patients.	
3.13	Graft-Related Infection *(percentage)*	Six-month rolling average prevalence of hemodialysis arteriovenous graft-related infection among adult chronic HD patients with a HD access-related infection and prescribed IV antibiotics	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was clinically confirmed and related to the arteriovenous graft used as hemodialysis access.	Number of months that adult (18+) chronic maintenance HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the HD access.	
3.14	Graft-Related Bacteremia (*rate*)	Six-month rolling average rate for access-related bacteremia with IV antibiotic therapy, among adult chronic HD patients using an arteriovenous graft for hemodialysis access	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the *arteriovenous graft* used as hemodialysis access, and blood cultures were consistent with bacteremia.	Number of HD *arteriovenous graft* days during the six-month period ending with the current reporting month in adult (18+) chronic maintenance HD patients.	

Hemodialysis Vascular Access Related Infections					
	Measure Name	Description	Numerator	Denominator	Exclusions
3.15	Fistula-Related Infection *(rate)*	Six-month rolling average rate for access-related infection with IV antibiotic therapy, among adult chronic HD patients using an arteriovenous fistula for hemodialysis access	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the *arteriovenous fistula* used as hemodialysis access.	Number of HD *arteriovenous fistula* days during the six-month period ending with the current reporting month in adult (18+) chronic maintenance HD patients.	
3.16	Fistula-Related Infection *(percentage)*	Six-month rolling average prevalence of hemodialysis arteriovenous fistula-related infection among adult chronic HD patients with a HD access-related infection and prescribed IV antibiotics	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was clinically confirmed and related to the arteriovenous fistula used as hemodialysis access.	Number of months that adult (18+) chronic maintenance HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the HD access.	
3.17	Fistula-Related Bacteremia (*rate*)	Six-month rolling average rate for access-related bacteremia with IV antibiotic therapy, among adult chronic HD patients using an arteriovenous fistula for hemodialysis access	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which the infection was related to the *arteriovenous fistula* used as hemodialysis access, and blood cultures were consistent with bacteremia.	Number of HD *arteriovenous fistula* days during the six-month period ending with the current reporting month in adult (18+) chronic maintenance HD patients.	
3.18	Unavailable Clinical Confirmation (*percentage*)	Six-month rolling average prevalence of "unavailable" information regarding clinical confirmation of infection among adult chronic HD patients with new IV antibiotic prescription	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month, and for which an indication of "unavailable" was provided regarding whether the infection was clinically confirmed or related to dialysis access.	Number of months that adult (18+) HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month.	
3.19	Unavailable Blood Culture Results (*percentage*)	Six-month rolling average prevalence of "unavailable" blood culture results for adult chronic HD patients with new IV antibiotic prescription	Number of months that HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month and for which blood culture results were indicated to be "unavailable".	Number of months that adult (18+) HD patients initiated a new IV antibiotic therapy for a newly suspected infection during the six-month period ending with the current reporting month.	

Pediatric Adequacy (HD)					
	Measure Name	Description	Numerator	Denominator	Exclusions
4.1	Frequency of HD Adequacy Measurement for Pediatric Patients	Percentage of all pediatric (<18 years old) patients receiving in-center hemodialysis (irrespective of frequency of dialysis) with documented monthly adequacy measurements (spKt/V) or its components in the calendar month	Number of patients in the denominator with documented monthly (spKt/V) adequacy measurements or its components in the calendar month	Number of pediatric patients (<18 years old) receiving in-center hemodialysis (irrespective of frequency of dialysis) who are in the facility and on hemodialysis for the entire study period	Patients on home dialysis
4.2	Method of HD Adequacy Measurement for Pediatric Patients	Percentage of pediatric (<18 years old) in-center HD patients (irrespective of frequency of dialysis) for whom delivered HD dose was measured by spKt/V as calculated using UKM or Daugirdas II during the reporting period	Number of patients in the denominator for whom delivered HD dose was calculated using UKM or Daugirdas II during the reporting period and for whom the frequency of HD per week is specified	Number of pediatric (<18 years old) in-center HD patients (irrespective of frequency of dialysis) in the sample for analysis	Patients on home dialysis
4.3	Minimum spKt/V for Pediatric Hemodialysis Patients	Percentage of all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for 90 days or more and dialyzing 3 or 4 times weekly whose delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was a spKt/V>= 1.2 during the reporting period	Number of patients in the denominator whose delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was a spKt/V>=1.2	Number of pediatric (<18 years old) in-center HD patients who have been on hemodialysis for 90 days or more and dialyzing 3 or 4 times weekly	Patients on home hemodialysis, patients receiving dialysis 2x/week and patients receiving dialysis 5x or greater/week
4.4	Measurement of nPCR for Pediatric HD Patients	Percentage of pediatric (<18 years) in-center hemodialysis patients (irrespective of frequency of dialysis) with documented monthly nPCR measurements	Number of patients in the denominator with documented monthly nPCR measurements	Number of all pediatric (<18 years old) in-center hemodialysis patients (irrespective of frequency of dialysis) with documented monthly nPCR measurements	Patients on home dialysis

Pediatric Anemia					
	Measure Name	Description	Numerator	Denominator	Exclusions
5.1	Monthly Hemoglobin Measurement for Pediatric Patients	Percentage of all pediatric (<18 years old) hemodialysis patients and peritoneal dialysis patients who have monthly measures for hemoglobin. The hemoglobin value reported for the end of each reporting month (end-of-month hemoglobin) is used for the calculation	Number of pediatric (<18 years old) hemodialysis and peritoneal dialysis patients who have monthly measures for hemoglobin. The hemoglobin value reported for the end of each reporting month (end-of-month hemoglobin) is used for the calculation	All pediatric (<18 years old) hemodialysis and peritoneal dialysis patients	None
5.2	Lower Limit of Hemoglobin for Pediatric Patients	Percentage of pediatric (<18 years old) hemodialysis and peritoneal dialysis patients, with ESRD >=3 months, who have a mean hemoglobin <10 g/dL for a 3 month reporting period, irrespective of ESA use. The hemoglobin value reported at the end of each reporting month (end-of-month hemoglobin) is used for the calculation.	Number of pediatric (<18 years old) hemodialysis and peritoneal dialysis patients, with ESRD >= 3 months, who have a mean hemoglobin <10.0 g/dL for a 3 month reporting period, irrespective of ESA use. The hemoglobin value reported for the end of each reporting month (end-of-month hemoglobin) is used for the calculation.	All pediatric (<18 years old) hemodialysis and peritoneal dialysis patients with ESRD >= 3 months	None
5.3	Measurement of Iron Stores for Pediatric Patients	Percentage of all pediatric (<18 years old) hemodialysis and peritoneal dialysis patients prescribed an ESA at any time during the study period or who have a Hb<11.0 g/dL in at least one month of the study period for whom serum ferritin concentration and percent transferrin saturation (TSAT) are measured at least once in a three-month period	Number of dialysis patients in the denominator for whom serum ferritin concentration and percent transferrin saturation (TSAT) are measured at least once in a three-month study period for all hemodialysis and peritoneal dialysis patients.	All pediatric (<18 years old) hemodialysis and peritoneal dialysis patients prescribed an ESA at any time during the study period or who have a Hb<11.0 g/dL in at least one month of the study period. The hemoglobin value reported for the end of each study period (end-of-month Hb) is used for this calculation.	None
5.4	Iron Therapy for Pediatric Patients	Percentage of all pediatric (<18 years old) hemodialysis and peritoneal dialysis patients with hemoglobin<11.0 g/dL and in whom simultaneous values of serum ferritin concentration was <100 ng/ml and TSAT<20% who received IV iron or were prescribed oral iron within the following three months	Number of patients in the denominator who received IV iron or were prescribed oral iron within three months following the first occurrence of serum ferritin <100 ng/mL and TSAT <20% during the study period.	All pediatric (<18 years old) hemodialysis and peritoneal dialysis patients in the facility for the entire three-month reporting period with hemoglobin <11 g/dL and in whom simultaneous values of serum ferritin was <100 ng/mL and TSAT<20% during the three-month study period. Simultaneous measurements are serum ferritin and TSAT measurements reported with the same collection date.	None

Fluid Weight Management					
	Measure Name	Description	Numerator	Denominator	Exclusions
6.1	Dietary Sodium Reduction Advice	The proportion of patients who received formal advice on dietary sodium restriction by the renal dietician within the past 90 days.	Number of patients in denominator that have received formal advice on dietary sodium restriction by the renal dietician within the past 90 days.	Number of patients in an outpatient dialysis facility undergoing chronic maintenance dialysis (hemodialysis or peritoneal dialysis).	Patients in a facility for less than 90 days
6.2	Sodium Profiling Practice for Hemodialysis	The proportion of hemodialysis patients who were not prescribed sodium profiling in the reporting month.	Number of patients in denominator who were not prescribed sodium profiling in the reporting month.	Number of patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis.	Patients in a facility for less than 30 days
6.3	Restriction of Dialysate Sodium	The proportion of hemodialysis patients who were prescribed a dialysate sodium concentration less than or equal to 138 mEq/L in the reporting month.	Number of patients in denominator who were prescribed a dialysate sodium concentration less than or equal to 138 mEq/L in the reporting month.	Number of patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis.	Patients in a facility for less than 30 days
6.4	Utilization of Dialysis Duration of Four Hours or Longer for Patients New to Dialysis	The proportion of patients new to hemodialysis (within the first 90 days since initiation of hemodialysis) whose delivered dialysis session length was at least 240 minutes.	Number of patients in denominator whose delivered dialysis session length was at least 240 minutes.	Number of patients new to dialysis (within the first 90 days since initiation of dialysis) in an outpatient dialysis facility undergoing chronic maintenance hemodialysis.	Patients in a facility for less than 30 days Patients receiving dialysis treatment greater than three times per week Pediatric patients
6.5	Periodic Assessment of Post-Dialysis Weight by Nephrologists	Proportion of patients who have documentation of receiving a new post-dialysis weight prescription from a nephrologist in the reporting month.	Number of patients in denominator who have documentation of receiving a new post-dialysis weight prescription from a nephrologist in the reporting month	Number of patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis.	Patients in a facility for less than 30 days
6.6	Utilization of High Ultrafiltration Rate for Fluid Removal	The proportion of patients who did not receive an ultrafiltration (UF) rate greater than or equal to 15 mg/kg/hr in the reporting month.	Number of patients in denominator who did not receive an ultrafiltration (UF) rate greater than or equal to 15 ml/kg/hr in the reporting month	Number of patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis.	Patients in a facility for less than 30 days