

Nephrology Curricular Milestones

Implementation Draft

**American Society of Nephrology Training Program Directors
May 2014**

This document presents curricular milestones for nephrology fellowships within the framework of the ACGME subspecialty reporting milestones [acgme.org/acgmeweb/Portals/0/PDFs/Milestones/InternalMedicineSubspecialtyMilestones.pdf] and should be used together with them. These curricular milestones do not replace the RRC program requirements. Neither do they address all benchmarks, such as the Home Dialysis Benchmarks or specialized curricula [such as transplant or geriatrics] for nephrology fellowship education which have been or might be developed. Some nephrology curricular milestones are quite specific, and some more general. Suggested settings are even included in the document especially for the two competencies Systems-based Practice and Practice-based Learning and Improvement. Where no specific nephrology milestones have been identified, we believe the language of the ACGME subspecialty reporting milestones suffices. Even where specific nephrology curricular milestones exist, they do not represent an exhaustive catalog of nephrology milestones. We have developed milestone assessment tools for most of the 23 milestones, available to TPDs on the ASN website.

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Glossary

ABGs	Arterial blood gasses
ABIM	American Board of Internal Medicine
ACGME	Accreditation Council for Graduate Medical Education
AKI	Acute kidney injury, previously referred to as acute renal failure
ASN	American Society of Nephrology
CKD	Chronic kidney disease
CRRT	Continuous renal replacement therapy. Refers to modalities such as continuous venous hemofiltration or hemodiafiltration.
ESRD	End-stage renal disease. Severe CKD requiring dialysis or transplant. Referring to patients on dialysis or undergoing transplant
GFR	Glomerular filtration rate
ICU	Intensive care unit
KDIGO	Kidney Dialysis: Improving Global Outcomes
KDOQI	Kidney Disease Outcomes Quality Initiative. Developed under the auspices of the National Kidney Foundation
QA	Quality assessment
QI	Quality improvement
RRC	Residency Review Committee of ACGME
TPD	Training Program Directors. Heads of the ACGME-accredited fellowship programs

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Acknowledgements

We would like to thank the many Training Program Directors, the Executive Committee members, Workgroup Leaders and other committed advisors who have participated in the development and refinement of these Nephrology Curricular Milestones to date. We are aware of the limitations of these curricular milestones and are calling them “an implementation draft”¹, but are under the requirements of ACGME to begin assessing our fellows starting in July 2014 and then reporting on them, using ACGME Subspecialty Milestones in November-December 2014.

For comments or questions, please contact either Ryan Russell, ASN, rrussell@asn-online.org, or Nancy Day Adams, MD, University of Connecticut Health Center, adams@uchc.edu

¹ Susan Swing, PhD, ACGME, used this terminology with respect to the ACGME reporting milestones at the 1st Subspecialty Milestones Summit, February 2013, Alexandria, Virginia.

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Patient Care Milestones				
1. Gathers and synthesizes essential and accurate information to define each patient’s clinical problem(s). (PC1)				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Incorrectly assesses volume status	Demonstrates basic assessment of volume status	Correctly assesses volume status for many patients	Consistently and accurately assesses and responds to changes in volume status	

2. Develops and achieves comprehensive management plan for patients with kidney disease (PC2)				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Does not develop appropriate or accurate care plans	Inconsistently develops an appropriate care plan	Consistently develops appropriate care plan	Appropriately modifies care plans based on patient’s clinical course, additional data, and patient preferences	Role models and teaches complex and patient-centered care
Does not seek additional guidance when needed	Inconsistently seeks additional guidance when needed	Seeks additional guidance and/or consultation as appropriate	Recognizes disease presentations that deviate from common patterns and require complex decision- making Manages complex acute and chronic kidney diseases	Develops customized, prioritized care plans for the most complex patients, incorporating diagnostic uncertainty and cost effectiveness principles

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3. Manages patients with progressive responsibility and independence. (PC3)				
Patient Care Milestone: AKI in the ICU				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
<p>Fails to recognize AKI</p> <p>Fails to recognize the need for or delays the start of urgent RRT</p>	<p>Orders basic diagnostic tests appropriately</p> <p>Only aware of routine dialysis scheduling for complex patients with AKI</p>	<p>Is able to assemble a complex differential diagnosis and prescribe dialysis appropriately</p> <p>Recognizes incipient recovery of renal function</p>	<p>Consistently provides appropriate medical and dialysis support</p> <p>Identifies unusual causes of AKI and recognizes opportunities to prevent AKI</p> <p>Modifies dialysis prescription appropriately based on changes in patient status</p> <p>Manages complications of RRT</p> <p>Recognizes appropriate timing of discontinuation of dialysis</p>	<p>Includes emerging treatment options.</p> <p>Anticipates and avoids complications.</p>

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Patient Care Milestone: Hospital nephrology				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Does not react to situations that require urgent or emergent care	<p>Responds appropriately to urgent patient problems identified by others</p> <p>Understands the relevant pathophysiology and basic science for nephrologic conditions</p>	<p>Recognizes situations requiring urgent or emergent care</p> <p>Demonstrates sufficient knowledge of socio-behavioral sciences including but not limited to health care economics and medical ethics as well as the basic science related to nephrologic conditions</p>	<p>Anticipates patient situations which may deteriorate, and works to prevent crisis situations</p> <p>Demonstrates sufficient knowledge to diagnose and treat nephrologic conditions and prioritize the care of multiple patients</p> <p>Demonstrates the ability to develop, evaluate and recognize complications of treatment plan.</p>	

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Patient Care Milestone: Kidney Transplantation				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Does not recognize allograft dysfunction (acute or chronic)	Inconsistently recognizes episodes of allograft dysfunction (acute and chronic) and identifies appropriate management	Usually demonstrates appropriate evaluation and management of common and straightforward episodes of allograft dysfunction (acute and chronic)	Knows the science underlying allograft dysfunction (acute and chronic) and independently generates a differential diagnosis and appropriate treatment plan for common and straightforward episodes of allograft dysfunction	Explains and educates others on the science underlying allograft dysfunction (acute and chronic) Independently manages complex episodes of allograft dysfunction
Does not recognize potential complications or drug interactions of immunosuppressive drugs	Inconsistently recognizes common complications and frequent drug interactions of immunosuppressive medications and demonstrates appropriate management	Usually demonstrates an understanding of common complications and frequent drug interactions of immunosuppressive medications and appropriate evaluation and management	Anticipates and manages complex complications and subtle drug interactions of immunosuppressive medications	Explains and educates others on the science underlying complications and drug interactions of immunosuppressive medications

Patient Care Milestone: Chronic Dialysis Rotation				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Fails to recognize abnormalities deriving from ESRD and consider therapeutic interventions	Able to identify some lab data necessary to manage anemia, disorders of mineral metabolism and bone disease and other ESRD	Generally able to manage basic problems of anemia, mineral bone disease and other ESRD issues	Able to manage even complex issues in anemia, mineral bone disease and other ESRD issues	Able to teach others about anemia and mineral bone disease management in patients with ESRD

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4a. Demonstrates skill in performing and interpreting invasive procedures. (PC4a)

Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
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PROCEDURE 1: Kidney Biopsy

Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Is unable to articulate the indications and contraindications for percutaneous renal biopsy	Is able to apply knowledge about the indications and contraindications for percutaneous renal biopsy to an individual patient	Consistently applies knowledge about the indications and contraindications for percutaneous renal biopsy to an individual patient	Models knowledge about the indications and contraindications for percutaneous renal biopsy to an individual patient	Is able to teach about the indications and contraindications for percutaneous renal biopsy
Is unable to articulate the information that needs to be communicated to obtain consent for percutaneous renal biopsy	Is able to obtain consent for percutaneous renal biopsy with prompting	Is able to obtain consent for percutaneous renal biopsy with supervision	Consistently demonstrates ability to obtain consent for percutaneous renal biopsy independently	Models obtaining consent for renal biopsy
Is unable to articulate the pre-biopsy preparations and precautions that are needed for percutaneous renal biopsy	Demonstrates the ability to order the pre-biopsy preparations and precautions needed for percutaneous renal biopsy with supervision	Demonstrates the ability to order the pre-biopsy preparations and precautions needed for percutaneous renal biopsy with supervision	Consistently demonstrates the ability to order the pre-biopsy preparations and precautions, post-biopsy care, and discharge modifications independently	Is able to explain the rationale for pre-biopsy preparations and precautions, post-biopsy care, and discharge modifications to other learners

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Is not able to image the kidney for the purpose of renal biopsy	Is able to image the kidney and locate the optimal site for the percutaneous renal biopsy with supervision	Is able to image the kidney and locate the optimal site for the percutaneous renal biopsy without prompting	Is able to image the kidney and locate the optimal site for the percutaneous renal biopsy independently	Is able to teach others how to image the kidney and locate the optimal site for the percutaneous renal biopsy independently
Is not able to articulate steps required for percutaneous renal biopsy of native and/or transplanted kidney	Is able to perform steps for percutaneous renal biopsy for native and/or transplanted kidney in simulation	Is able to perform each step for percutaneous renal biopsy for native and/or transplanted kidney without prompting but with supervision	Is able to perform each step for percutaneous renal biopsy for native and/or transplanted kidney in patients independently	Models and is able to teach the approaches to percutaneous renal biopsy for native and/or transplanted kidneys
Is unable to articulate post biopsy orders and discharge modifications that are required in a patient who has undergone percutaneous renal biopsy	Demonstrates the ability to place appropriate post biopsy orders and discharge modifications required in a patient who has undergone percutaneous renal biopsy with prompting	Demonstrates the ability to place post biopsy orders and discharge modifications required in a patient who has undergone percutaneous renal biopsy and address complications with supervision	Demonstrates the ability to place post biopsy orders and discharge modifications and to address complications that may occur in a patient who has undergone percutaneous renal biopsy independently	Models the care of patients post renal biopsy
Has a poor to limited understanding of the need for adequate tissue sampling , preservation, staining and histological testing of renal biopsy tissue	Understands the need and rationale for adequate tissue sampling , preservation, staining and histological testing of renal biopsy tissue	Is able to assess the tissue for adequate sampling with supervision	Is able to assess the tissue for adequate sampling independently	Is able to assess the tissue for adequate sampling and explain to other learners the method and rationale for doing so

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PROCEDURE 2: Temporary Hemodialysis Access Placement				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Is not able to articulate the indications or contraindications and need for consent for temporary hemodialysis access placement	Is able to assess the patient for indications or contraindications and obtain consent for temporary hemodialysis access placement	Demonstrates a knowledge of the complete assessment of the patient's need for, optimal location for, and consent for temporary hemodialysis access	Demonstrates a thorough assessment of the patient's need for, optimal location for, and consent for temporary hemodialysis access	Is able to teach assessment of the patient's need for, optimal location for, and consent for temporary hemodialysis access
Fails to assess the appropriate physical location of the temporary hemodialysis access	Demonstrates assessment of appropriate physical location and ability to place temporary hemodialysis access with assistance	Is able to assess the patient and place temporary hemodialysis access with supervision	Is able to assess the patient and place temporary hemodialysis access independently	Is able to teach others to place a temporary hemodialysis access
Displays a poor or only limited knowledge of the complications that may occur with temporary hemodialysis access placement	Displays a basic understanding of the complications and functional problems that may occur with temporary hemodialysis access	Understands the complications and functional problems that may occur with temporary hemodialysis access and is able to address these with supervision	Is able to manage the complications and functional problems that occur with temporary hemodialysis access independently	Is able to anticipate and effectively manage the complications that occur with temporary hemodialysis access

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4b. Demonstrates skill in performing and interpreting non-invasive procedures and/or testing. (PC4b)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational

PROCEDURE 3: Hemodialysis				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Is not able to articulate - or only erratically or incompletely - the indications and contraindications for hemodialysis	Demonstrates understanding of the indications and contraindications for hemodialysis	Consistently demonstrates understanding of the indications and contraindications for hemodialysis and applies these to assessment of each patient	Consistently demonstrates understanding of the indications and contraindications for hemodialysis and is able to apply these independently to assessment of each patient	Is able to teach the indications and contraindications for acute/chronic hemodialysis
Is not able to complete simple hemodialysis orders for uncomplicated patients with supervision	Is able to complete simple hemodialysis orders for uncomplicated patients with supervision	Is able to complete individualized hemodialysis orders for moderately ill patients with supervision and obtain appropriate consent	Is able to complete individualized hemodialysis orders for complex and critically ill patients independently including consent	Models the ability to provide individualized hemodialysis and modifies the prescription to achieve optimum adequacy of hemodialysis
Does not demonstrate an ability to obtain consent for acute and/or chronic hemodialysis	Has basic knowledge of adequacy of hemodialysis and its impact upon the hemodialysis patient	Is able to assess adequacy of hemodialysis and modify the hemodialysis prescription with supervision	Is able to assess adequacy of hemodialysis and modify the hemodialysis prescription independently	Is able to anticipate complications that may occur with hemodialysis and address issues early for prevention or treatment

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Does not identify complications of hemodialysis or does so only sporadically	Is able to identify complications that may occur with routine hemodialysis	Is able to identify complications that may occur with complex and/or critically ill hemodialysis patients with supervision	Consistently identifies complications that may occur with hemodialysis and demonstrates the ability to address these for the patient	Is able to teach how to identify complications of hemodialysis and place systems into place to minimize these complications
Sporadically and/or incompletely assesses temporary and/or chronic vascular access function	Is able to assess temporary and/or chronic vascular access function with assistance	Is able to assess temporary and/or chronic vascular access function	Has a thorough working understanding of the assessment and interventions required for effective function of vascular access	Is able to teach the assessment and interventions required for effective function of vascular access
Displays limited understanding and ability to assess the dialyzer properties, water systems, and hemodialysis properties and function	Has a basic understanding of dialyzer properties, water systems, and hemodialysis properties and functions	Demonstrates greater understanding and critical assessment of the dialyzer properties, water systems and hemodialysis mechanism	Has a thorough understanding and ability to critically assess dialyzer properties, water systems, and hemodialysis mechanisms	Is able to critically assess dialyzer properties, water systems, and hemodialysis mechanisms and work with the medical director and his team to run a functional dialysis unit
Demonstrates only a limited understanding of the pharmacological, nutritional and other physiologic issues that may occur in hemodialysis patients	Begins to display a basic understanding of the pharmacological, nutritional and other physiologic issues that may occur in hemodialysis patients	Becomes familiarized with the pharmacological, nutritional and other physiologic issues that occur in the hemodialysis patient and work with the multidisciplinary care team	Demonstrates understanding and ability to integrate pharmacological, nutritional and other physiological processes into patient care and work effectively with the multidisciplinary care team	Models an effective working relationship and with a multidisciplinary health care team

PROCEDURE 4: Continuous Renal Replacement Therapy (CRRT)

Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Is not able to articulate the indications and contraindications for CRRT	Demonstrates understanding of the indications and contraindications for CRRT	Consistently demonstrates understanding of the indications and contraindications for CRRT and applies these to assessment of each patient	Consistently demonstrates understanding of the indications and contraindications for CRRT and is able to apply these independently to assessment of each patient	Is able to teach the indications and contraindications for CRRT
Is unable to complete simple orders and consent for CRRT	Is able to complete straightforward individualized orders and obtain consent for CRRT for with supervision	Is able to complete individualized orders and obtain consent for CRRT for more complex or critically ill patients with supervision	Is able to complete individualized orders and obtain consent for moderately and critically ill patients independently	Models the ability to provide individualized CRRT and modifies the prescription to achieve optimum effectiveness of the CRRT modality
Does not demonstrate an understanding of the assessment of effectiveness of CRRT	Displays basic understanding of the effectiveness of CRRT and its impact upon the patient	Is able to assess the effectiveness of CRRT and modify the prescription with supervision	Is able to assess effectiveness of CRRT and modify the prescription independently	Is able to teach the assessment of effectiveness of CRRT and individualized prescriptions
Fails to identify complications of CRRT	Begins to identify complications that may occur with CRRT	Identifies complications that may occur with CRRT and begins to demonstrate ability to address these in the patient	Consistently identifies complications that may occur with CRRT and demonstrates competence to address these in the patient	Is able to anticipate complications that may occur with CRRT and address issues early for prevention and/or treatment

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Fails to assess or only sporadically assesses vascular access function for CRRT	Begins to demonstrate the ability to assess vascular access function for CRRT	Reliably assesses vascular access function for CRRT	Has a thorough working understanding of the assessment and interventions required for effective function of vascular access for CRRT	Is able to teach the assessment and interventions required for effective function of vascular access
Displays limited understanding and ability to assess the dialyzer properties, water systems, and dialysis mechanisms involved in CRRT	Demonstrates a basic ability to assess the dialyzer properties, water systems, and dialysis mechanisms involved in CRRT	Demonstrates understanding and critical assessment of the unique properties of the CRRT dialyzer, water systems and dialysis mechanisms	Has a thorough understanding and ability to critically assess dialyzer properties, water systems, and CRRT mechanisms	Is able to critically assess dialyzer properties, water systems, and hemodialysis mechanisms and work with the medical director
Has limited understanding of the pharmacological, nutritional and other physiologic issues that may occur in CRRT patients	Begins to display a basic understanding of the pharmacological, nutritional and other physiologic issues that may occur in CRRT patients	Becomes familiarized with the pharmacological, nutritional and other physiologic issues that are unique to CRRT	Demonstrates understanding and ability to integrate the unique pharmacological, nutritional and other physiological with the multidisciplinary care team to provide effective CRRT	Models an effective working relationship and with an integrated health care multidisciplinary

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PROCEDURE 5: Peritoneal Dialysis				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Is not able to articulate the indications and contraindications for chronic peritoneal dialysis	Demonstrates understanding of the physical and environmental indications and contraindications for peritoneal dialysis	Consistently demonstrates understanding of the indications and contraindications for peritoneal dialysis and applies these to assessment of the patient	Is able to apply knowledge about the indications and contraindications for peritoneal dialysis in care of the patient in an independent manner	Is able to teach the indications and contraindications for peritoneal dialysis
In unable to assess a patient for chronic peritoneal dialysis and obtain consent	Is able to assess an uncomplicated patient for chronic peritoneal dialysis and obtain consent with supervision	Is consistently able to assess complex patients for chronic peritoneal dialysis and obtain consent with supervision	Is able to assess complex patients for chronic peritoneal dialysis and obtain consent independently	Models the ability to assess appropriateness for chronic peritoneal dialysis and obtain consent
Is unable to complete simple peritoneal dialysis orders for uncomplicated patients with supervision	Is able to complete routine peritoneal dialysis orders for uncomplicated peritoneal dialysis patients with supervision	Is able to complete individualized peritoneal dialysis orders for complex peritoneal dialysis patients with supervision	Is able to complete individualized peritoneal dialysis orders for uncomplicated as well as complex peritoneal dialysis patients independently	Is able to teach how to provide complete individualized peritoneal dialysis orders in even the most complex patients
Fails to demonstrates an understanding of complications that may occur with peritoneal dialysis	Begins to identify complications that may occur with peritoneal dialysis and the approach to dealing with them	Identifies complications that may occur with peritoneal dialysis and demonstrates the ability to address these in the patient	Consistently identifies complications that may occur with peritoneal dialysis and addresses these appropriately in the peritoneal dialysis patient	Is able to anticipate complications that may occur with peritoneal dialysis and address these issues early for prevention and/or treatment

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Displays a poor or limited understanding of peritoneal membrane properties and functions relevant to peritoneal dialysis	Displays basic understanding of peritoneal membrane properties and functions relevant to peritoneal dialysis	Demonstrates a comprehensive understanding of peritoneal membrane properties and functions relevant to peritoneal dialysis, adequacy of peritoneal dialysis and is able to perform testing of these parameters with supervision	Demonstrates a comprehensive understanding of peritoneal membrane properties and functions relevant to peritoneal dialysis, adequacy of peritoneal dialysis and is able to perform testing of these parameters independently	Has a comprehensive understanding of peritoneal membrane properties and functions, the testing strategies of these parameters
Is not able to assess peritoneal catheter and tunnel function	Demonstrates understanding of the physical and environmental indications and contraindications for peritoneal dialysis	Is able reliably to assess peritoneal catheter and tunnel	Is able reliably to assess peritoneal catheter and tunnel and prescribe appropriate modifications or treatments	Is able to teach the assessment of peritoneal catheter and tunnel and the approach to therapies for issues
Displays a poor or only limited understanding of the pharmacological, nutritional and other physiologic issues that may occur in peritoneal dialysis patients	Demonstrates a basic understanding of the pharmacological, nutritional and other physiologic issues that may occur in peritoneal dialysis patients	Demonstrates understanding of the pharmacological, nutritional and other physiologic issues that occur in the peritoneal dialysis patient and works with the multidisciplinary care team to address them	Has critical understanding of the pharmacological, nutritional and other physiologic issues that occur in the peritoneal dialysis patient and works effectively with the multidisciplinary care team to address them	Is able to run a peritoneal dialysis program and models an effective working relationship with a multidisciplinary team

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PROCEDURE 6: Urine analysis				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Is unable to articulate the indications for performing a urine analysis	Demonstrates the ability to obtain urine when appropriate indications for performing a urine analysis occur	Consistently obtains urine when appropriate indications for performing a urine analysis occur	Consistently obtains a properly handled urine specimen when appropriate indications for performing a urine analysis occur	Is able to teach how to obtain a properly handled urine specimen when appropriate indications for performing a urine analysis occur
Is unable to demonstrate the ability to obtain a proper urinary specimen under varying conditions	Is able to obtain a proper urinary specimen when prompted	Consistently obtains a proper urinary specimen under varying conditions	Is able to prepare the urinary specimen for dipstick and sediment analysis independently	Is able to teach others how to prepare the specimen for dipstick and sediment analysis
Is not able to demonstrate how to centrifuge the urine specimen with appropriate parameters	Demonstrates the ability to centrifuge the urine specimen with appropriate parameters	Consistently prepares the specimen for dipstick and sediment analysis appropriately with some supervision	Consistently prepares the specimen for dipstick and sediment analysis appropriately and independently	Models the proper application of urinary dipstick and urine sediment analysis
Is not able to assess the urine with the dipstick analysis tool under supervision	Demonstrates the ability to assess the urine with the dipstick analysis tool	Consistently uses the dipstick analysis tool appropriately with supervision	Consistently uses the dipstick properly for the purpose of urine analysis independently	Is able to teach others the interpretation of the dipstick and the confounding reactions that may occur
Is not able to demonstrate the ability to make a slide of the urinary sediment	Demonstrates the ability to make a slide of the urinary sediment and to identify elements within the urinary sediment with supervision	Begins to interpret the dipstick and urinary sediment that are relevant to diagnostic assessment with supervision	Is able to interpret the dipstick and urinary sediment for diagnosis while taking into account confounding influences independently	Models the interpretation of the urinary sediment for the purposes of renal diagnosis and is able to articulate the reasons for the interpretation to other learners

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5. Requests and provides consultative care. (PC5)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
	Unable to identify kidney issues or to answer the team's question about their patient	Has only basic knowledge of kidney disorders, with little ability to filter or prioritize information	Able to easily identify and manage renal disorders and place them in the larger context of patient care	Able to manage even complex problems, advise the attending physician and help balance patient care priorities	Becomes viewed as master consultant for ability to identify complex issues and prioritize plans

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Medical Knowledge					
6. Possesses Clinical knowledge (MK1)					
Medical Knowledge: Recognition and initial evaluation of recipients and donors for kidney transplantation					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
	Unaware of the existence of criteria for kidney transplant donors and recipients	Recalls the criteria for the evaluation and selection of kidney transplant donors and recipients	Demonstrates knowledge of the indications and contraindications of transplantation, and actively participates in the evaluation and selection of transplant donors and recipients	Independently applies the principles in the evaluation and selection of kidney transplant donors and recipients	Teaches and assists in developing the criteria for evaluation and selection of kidney transplant donors and recipients

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7. Knowledge of diagnostic testing and procedures. (MK2)				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
Fails to evaluate the appropriate laboratory data including microscopic exam of urine sample	Usually recognizes abnormal serum chemistries, kidney tests including imaging studies and renal pathology	Understands indications for and provides a basic interpretation of common nephrologic diagnostic testing, including but not limited to chemistries, ABGs, imaging studies and renal pathology Understands prior probability and test performance characteristics	Understands indications for and demonstrates skill in interpreting more advanced diagnostic tests including but not limited to renal biopsy, renal ultrasound, nuclear medicine studies, GFR measurements, and hemodynamic parameters	Recognizes emerging applications of novel biomarkers, imaging technology, and other relevant testing

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8. Scholarship. (MK3)				
Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice²	Aspirational

² We recognize that a fellow graduating from even a research-intensive fellowship is not ready to become an independent investigator. This wording however, is ACGME milestone wording, and should be interpreted in the context of fellowship accomplishments.

Systems-based Practice					
9. Works effectively within an interprofessional team (e.g., with peers, consultants, nursing, ancillary professionals, and other support personnel). (SBP1)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
ROTATION FOR USE					
GENERAL	Fails to recognize the importance of shared vision, goals and expectation in outcome measures	Attempts to apply a shared vision with the team	Helps develop a shared vision, goals, expectations and outcomes for the team	Establishes the team vision and leads the group	Leads conferences or meetings focusing on teamwork
ACUTE CONSULT OR INPATIENT ROTATION	Cannot or will not acknowledge differences in professional needs of health care team members from various nursing or care units	Learns to value the perspective of others and recognizes differences in professional needs of members of the health care team	Listens to others and acknowledges individual differences between team members. May provide constructive feedback	Openly seeks the opinions and feedback of others and integrates the differences in styles such that the team maintains its highest effectiveness	Mentors junior trainees in the development of team building skills
CONTINUITY AMBULATORY CLINIC or DIALYSIS CLINIC	Fails to recognize the importance of shared vision, goals and expectations in outcome measures in the outpatient setting. Does not or will not monitor team through constructive feedback	Recognizes differences in professional needs of members of the ambulatory health care team and provides teaching to the team	Provides constructive feedback to individuals or the group. Helps address team issues through focused teaching sessions	Remains sensitive to individual needs, acts as a positive role model. Provides constructive feedback through group and individual sessions	Prepares and presents scholarly work related to the development of effective healthcare teams in the outpatient or office setting

9. Works effectively within an inter-professional team (e.g., with peers, consultants, nursing, ancillary professionals, and other support personnel). (SBP1)

Kidney Transplant or Ambulatory Dialysis: Works within and with the team

Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
<p>Does not recognize the contributions of other inter-professional team members</p> <p>Frustrates the team with inefficiency and errors</p> <p>Frequently requires reminders from the team to complete physician responsibilities</p>	<p>Demonstrates a beginning understanding of the structure of the team</p> <p>Demonstrates a beginning understanding of the national or regional governing principles and procedures (e.g., the organ allocation system or the dialysis quality requirements)</p> <p>Demonstrates an understanding of the importance of communication among team members</p>	<p>Understands the roles and responsibilities of all team members and begins to work collaboratively</p> <p>Actively participates in team meetings and collaborative decision-making</p>	<p>Understands the roles and responsibilities of, and effectively partners with, all members of the team</p> <p>Efficiently coordinates activities of other team members to optimize care</p>	<p>Develops, trains, and inspires the team regarding unexpected events or new patient management strategies</p> <p>Viewed by team members as a leader in the delivery of high-quality care</p>

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10. Recognizes system error and advocates for system improvement. (SBP2)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
ROTATION FOR USE					
General (could apply to any rotation, from ABIM)	Ignores risks for errors that may affect patient care	Does not recognize the potential for system error	Recognizes the potential for error and begins corrections	Identifies systemic causes of error and navigates them to provide safe patient care	Advocates for system leadership to formally engage in quality improvement activities
Acute consult or inpatient rotation specific	Ignores unit-specific risks for system errors (acute dialysis, ICUs, radiology) and makes no attempt to remedy	Identifies dialysis nursing processes, ICU routines or complex scheduling problems that adversely affect patient care	Understands system complexities of dialysis units, ICUs, radiology and others and attempts to coordinate these systems for safe patient care	Uses knowledge of the complexities of dialysis units, ICUs and radiology to make sufficient adjustment in plans for safe patient care Provides thoughtful feedback across systems	Leads and coordinates meetings or sessions with target units to identify and minimize system errors
Ambulatory Clinic	Does not recognize the importance of coordinating care through support staff and referring physicians	Acknowledges the multi-faceted systems that combine for the provision of safe outpatient care	Understands the systems necessary to facilitate safe outpatient care and attempts to utilize them appropriately	Navigates the systems, efficiently coordinates nursing, physician and ancillary resources to promote safe patient care	Develops work groups locally or participates regionally to identify system errors that may adversely affect safe patient care

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11. Identifies forces that impact the cost of health care, and advocates for and practices cost-effective care. (SBP3)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
ROTATION FOR USE					
GENERAL	<p>Unable to access resources within the system.</p> <p>Does not recognize the importance of timely documentation and implications for billing</p>	<p>Exhibits a crude understanding of payment systems.</p> <p>Understands how and attempts to access resources</p>	<p>Demonstrates a clear understanding of the payment systems.</p> <p>Accountable on fiscal matters</p>	<p>Applies a clear understanding of private and public payment systems</p>	<p>Seeks to apply the understanding of the various payment systems outside the community at large</p>
ACUTE CONSULT OR INPATIENT ROTATION SPECIFIC	<p>Unable to access resources within the system.</p> <p>Lacks accountability to patients, colleagues or the institution for fiscal matters</p>	<p>Understands how and attempts to access resources.</p> <p>Attempts timely documentation and realizes the implications for billing</p>	<p>Utilizes resources appropriately, documentation nearly always up to date, understands billing</p>	<p>Utilizes resources judiciously and appropriately.</p> <p>Is fully accountable to patients, colleagues and the institution on all fiscal matters</p>	<p>Participates in regulatory policy determinations at the regional or national level</p>
AMBULATORY CLINIC	<p>Lacks knowledge of current payment systems</p> <p>Does not respect regulatory agency or 3rd party payer requirements</p>	<p>Understands and complies with regulatory and 3rd party requirements.</p> <p>Demonstrates accountability on fiscal matters of outpatient practice</p>	<p>Documentation nearly always up to date, understands billing.</p> <p>Cooperates with all regulatory agencies and 3rd party payers</p>	<p>Clear and billable documentation at all times.</p> <p>Anticipates the needs of all regulatory agencies and 3rd party payers prospectively</p>	<p>Pursues an advanced degree in business or accounting, participates in the fiscal management of the training program</p>

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12. Transitions patients effectively within and across health delivery systems. (SBP4)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
ROTATION FOR USE					
GENERAL	Is unwilling to recognize the importance of effective patient transitions in quality patient care	Fails to recognize deficits in transitions and hand-offs unless pointed out	Recognizes deficits in transitions, and often seeks a means to improve	Supports or develops a well-integrated handoff system and seeks feedback for improvement	Leads efforts to improve the handover process, mentors others, engaged in scholarly work related to quality handovers
ACUTE CONSULT OR INPATIENT ROTATION	Fails to improve in inpatient transitions despite multiple attempts at the process	Is slow to harness the EMR on a daily basis. Delivers marginal quality handovers. Does not communicate effectively during handovers.	Uses EMR to facilitate exchanges and patient care Freely communicates with source of handover.	Prepares high quality handovers and seeks feedback. Facilitates open communication with party delivering hand-off	Leads conferences or meetings to improve the handover process, may work in the development of a handover system
CONTINUITY AMBULATORY CLINIC	Makes no effort to check out patients to the cross cover for planned absences	Is slow to contact and communicate with cross-cover.	Freely communicates with cross-cover. Uses EMR to facilitate exchanges	Prepares high quality handovers in advance of absences, anticipates cross-cover absences.	Leads clinic meetings to improve the handover process, develops a new or better handover system

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Practice-based Learning and Improvement					
13. Monitors practice with a goal for improvement. (PBLI1)					
	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
ROTATION FOR USE					
			Identifies areas in fellow's own practice and local system that can be changed to improve the processes and outcomes of care	Identifies learning needs (clinical questions) as they emerge in patient care activities	Takes a leadership role in the education of all members of the health care team
GENERAL	Is unwilling to recognize knowledge or performance deficits even when pointed out.	Does not recognize knowledge or practice deficits unless pointed out	Inconsistently recognizes knowledge or practice deficits with emerging awareness of means to improve	Accurately assesses deficits and is able to implement a plan for improvement	Seeks out peer review to obtain an accurate assessment of abilities and is continuously bettering skills
INPATIENT	Fails to improve AKI differential diagnosis despite multiple exposures to patients with the problem	Realizes AKI is present but cannot see that post-renal cause (for example) was missed repeatedly. No improvement even after pointed out	Recognizes deficiencies in differential diagnosis and demonstrates progressive improvement	Sees a new consult and already assesses the literature to improve knowledge prior to presenting the patient when possible.	Through peer inquiry and self-reflection has an accurate assessment of knowledge and practice gaps and improves these prior to seeing a patient

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CONTINUITY AMBULATORY	Makes no effort to expand a differential beyond the problem listed for patient presentation.	Is unaware of diagnoses that are missed during patient assessment. Makes little effort to improve identified areas of weakness	Very concerned about missing diagnoses but inconsistent effort for improvement in skillset	Reviews patients before clinic and places efforts toward practice improvement before patient presentation	Through peer inquiry and self-reflection has an accurate assessment of knowledge and practice gaps and improves these prior to seeing a patient
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14. Learns and improves via performance audit. (PBLI2)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
ROTATION FOR USE					
GENERAL	Unwilling to recognize that tracking performance can improve patient care	Unaware that tracking performance data can influence practice or be a way to improve care	Realizes that tracking data can be a valuable tool but is unsure how to use/or inconsistent in using this for change	Able to create a query for assessing performance and leads an effort for change	Actively seeks to continue to assess changes that have been made to continue to better practice patterns
ASSESSMENT AFTER QI PROJECT COMPLETION	Does not believe that collected data could reflect self-practice. Opposed to implementing change.	Remains naïve to QI process and when instructed, has little interest in application to own practice	Has working understanding of QI but needs significant guidance to implement change	Leads a QI effort from recognition of a problem to determining a method of change	Actively continues to monitor self-performance to enhance longevity of change
DIALYSIS ROTATION, FELLOW PATIENT MEETING	Does not believe that X (e.g., hypertension control) could reflect their own practice management and blames others for the data	Unable to realize that tracking X (HTN control) could influence practice patterns. When data obtained, little interest in change	Seeks out data that tracks X (HTN control). Guidance needed to implement change in practice	Takes the quarterly QA data and immediately creates a plan to improve change in practice	Continues to maintain assessment of previous changes to continue to improve

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15. Learns and improves via feedback. (PBLI3)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
ROTATION FOR USE					
GENERAL	Is not interested in feedback and is defensive when feedback is given	Appears to realize the importance of giving and receiving feedback	Will seek feedback from supervisors but remains resistant or oblivious to feedback from others	Comfortable with feedback from others at all levels Seeks feedback from others	Always adjusts performance based on feedback
HOSPITAL	Does not accept feedback for specific tasks ³	Listens to the feedback, makes some attempt to modulate behaviors	Sincerely attempts to modify practice habits based on feedback, if not always successful	Appreciates and solicits feedback from professionals at all levels, including dialysis nursing staff, colleagues, and referring physicians	Mentors junior trainees and others on effective inpatient service routines based on feedback from others
CONTINUITY AMBULATORY CLINIC	Resists feedback from attending physician or ambulatory nursing staff	Listens and occasionally applies feedback to the outpatient practice	Uses feedback from physicians to modify style, may still be slow to accept nursing feedback	Accepts feedback from all sources, and utilizes in the application to outpatient practice	Leads an outpatient clinical group on soliciting and giving feedback

³ e.g. acute dialysis, consult, management plans, etc.

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16. Learns and improves at the point of care. (PBLI4)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational
ROTATION FOR USE					
GENERAL	Fails to acknowledge uncertainty or inaccuracies	Develops a limited differential diagnosis and rarely reconsiders an approach to a problem	Provides a thorough differential diagnosis, but asks for help with management	Is open minded in the approach to a problem and routinely seeks new information	Has a systematic approach to track and pursue emerging clinical questions
ACUTE CONSULT OR INPATIENT	Fails to acknowledge limits in knowledge of [acute dialysis, inpatient nephrology problems, vascular access, clinical differential diagnosis] ⁴ Does not read.	Exhibits a limited differential diagnosis of [target area], is reluctant to reconsider approach. Blindly accepts the findings of clinical research studies	Exhibits an improving differential diagnosis. Translates medical information needs into well-formed clinical questions	Open minded in the approach to [target area] and routinely seeks new information. Independently appraises clinical research reports based on accepted criteria	Mentors junior trainees on how to appraise clinical research reports based on accepted criteria
CONTINUITY AMBULATORY CLINIC	Fails to acknowledge limits in knowledge of outpatient nephrology [or given target area], makes no attempt to expand database	Exhibits a limited differential diagnosis of [target area]. Reluctant to reconsider an approach to a problem. Blindly accepts the findings of clinical research studies.	Applies a growing differential diagnosis in the ambulatory setting and consistently tries to apply it to the situation. Familiar with KDOQI and KDIGO	Open minded in the approach to ambulatory nephrology. Understands the applications of KDOQI and KDIGO Appraises clinical research reports based on accepted criteria	Mentors and shares a systematic approach to track and pursue emerging clinical questions

⁴ Rotation-specific goals

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Professionalism					
17. Has professional and respectful interactions with patients, caregivers, and members of the interprofessional team (e.g., peers, consultants, nursing, ancillary professionals, and support personnel). (PROF1)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational

18. Accepts responsibility and follows through on tasks. (PROF2)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational

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19. Responds to each patient's unique characteristics and needs. (PROF3)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational

20. Exhibits integrity and ethical behavior in professional conduct. (PROF4)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational

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Interpersonal and communication Skills					
21. Communicates effectively with patients and caregivers. (ICS1)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational

22. Communicates effectively in interprofessional teams (e.g., with peers, consultants, nursing, ancillary professionals, and other support personnel). (ICS2)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational

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23. Appropriate utilization and completion of health records. (ICS3)					
Not Yet Assessable	Critical Deficiencies	Appropriate for beginning fellow	Appropriate for mid-level fellow	Ready for unsupervised practice	Aspirational