

CKD - Chronic Kidney Disease

CKD-ADV ADVANCE DIRECTIVE

OUTCOME: The patient/family/caregiver will understand the process of developing an advance directive and its role in guiding medical care and decision making to best serve the patient's care preferences.

STANDARDS:

1. Explain that many persons are not able to make their own decisions when ill. The advance directive, or other statement of care preferences, allows patients to express their preferences and guide treatment decisions in that setting.
2. Explain that this statement of preferences is only used to guide decision making if the patient is unable to provide guidance at the time that decisions need to be made.
3. Explain that Advance Directives or other statements of care preferences can help families and caregivers who may need to be decision-makers for the patient to understand the patient's preferences for care.
4. Review the option of Advanced Directives or other statements of care preferences with the patient and the patient's family. Explain treatment options and answer questions in a manner the patient/family will understand.
5. Refer as appropriate to those who can assist the patient in further clarifying healthcare decision-making authority (e.g., Social Services, Clergy, Lawyer,) by defining a healthcare proxy, writing a living will, or further discussing the preferences for care.
6. **Refer to ADV.**

CKD-AP ANATOMY AND PHYSIOLOGY

OUTCOME: The patient/family will have a basic understanding of where the kidneys are located in the body and their function.

STANDARDS:

1. Explain that there are two kidneys in the body located on either side of the spine and extend a little below the ribs.
2. Explain that the kidneys are bean-shaped organs and is about the size of a fist.
3. Explain that the kidneys receive approximately 10% of the blood that is pumped out of our heart every minute.
4. Explain that the kidneys are responsible for performing various roles in maintaining a balance of fluid and chemicals in the body. They have four basic functions:

- a. Regulation of body fluid.
- b. Balance of chemicals in the body (potassium, calcium, sodium, phosphorus).
- c. Removal of waste products from bloodstream/body (urea, creatinine, phosphorus).
- d. Secretion of three hormones: Renin, which regulates blood pressure. Erythropoietin, which stimulates the bone marrow to produce red blood cells. Calcitriol (1,25 dihydroxyvitamin D3), the active form of vitamin D helps stimulate absorption of calcium by the intestine and bone.

CKD-C COMPLICATIONS

OUTCOME: The patient/family will understand the complications/symptoms of untreated or progressive kidney disease. The patient/family will understand the complications associated with dialysis treatment. (Please choose from the following standards as they apply to the patient's specific disease process.)

STANDARDS:

1. Explain that CKD is progressive in nature. Explain how CKD increases the risk for heart/cardiovascular disease.
2. Explain that anemia is a common consequence of chronic kidney failure due to a decrease in erythropoietin production from the kidneys or there may be a lack of iron in the blood.
3. Explain how malnutrition can result from inadequate caloric and protein intake due to loss of appetite or uremia.
4. Explain how bone disease develops from a consequence of phosphorus retention and calcitriol deficiency leading to secondary hyperparathyroidism.
5. Explain that as the kidney function decreases, functional status (e.g., quality of life) may decrease and well-being may be affected. Explain that as toxins build up in the blood, patient may experience symptoms of uremia, e.g., inability to think clearly, nausea, vomiting, itchiness, loss of appetite, altered smell & taste. Explain that as the kidney function declines, a patient may experience weight gain from excess fluids, swollen ankles and feet, puffiness around eyes, including high blood pressure.
6. Explain that as the kidney function declines, a patient with diabetes may have changes in diabetes control and need less diabetes medications, to reduce risk for low blood sugar.

CKD-CM CASE MANAGEMENT

OUTCOME: The patient/family/caregiver will understand the importance of integrated case management in achieving optimal physical and behavioral health.

STANDARDS:

1. Discuss roles and responsibilities of each member of the care team including the patient, family/caregiver, and providers in the case management plan.
2. Explain the coordination and integration of resources and services in developing and implementing the case management plan.
3. Explain the need to obtain the appropriate releases of information necessary to support integrated case management and to maintain patient privacy and confidentiality. **Refer to AF-CON.**

CKD-CUL CULTURAL/SPIRITUAL ASPECTS OF HEALTH

OUTCOME: The patient/family will understand the impact and influences cultural and spiritual traditions, practices, and beliefs have on health and wellness.

STANDARDS:

1. Discuss the potential role of cultural/spiritual traditions, practices and beliefs in achieving and maintaining health and wellness. Refer to clergy services, traditional healers, or other culturally appropriate resources.
2. Explain that traditional medicines/treatments should be reviewed with the healthcare provider to determine if there are positive or detrimental interactions with prescribed treatment. Explain that the medical treatment plan must be followed as prescribed to be effective.

CKD-DIA DIALYSIS

OUTCOME: The patient/family will understand the process, risks, and benefits of hemodialysis and events that may result from refusal of hemodialysis.

STANDARDS:

1. Explain the dialysis procedure to be performed, including the risks and benefits of performing the procedure and the adverse events which might result from refusal of the procedure.
2. Explain hemodialysis:
 - a. Hemodialysis is the use of an artificial filtering of blood by a machine, removing metabolic wastes and excess fluids from the body.
 - b. This procedure is usually initiated three times per week. Each session is usually three to four hours at a hemodialysis center.
 - c. A fistula, a surgical connection of major blood vessels, is usually placed in the arm prior to the start of dialysis. A temporary placement may be established in other sites of the body such as the neck when an emergent condition arises.

3. Discuss the expected patient/family involvement in the care required following dialysis.
4. Explain that infections are common in dialysis patients and that the patient/family should report all elevations in body temperature to the dialysis staff. Infection, particularly at the site may require immediate hospitalization for IV antibiotic therapy.
5. Explain that deviations from prescribed dietary and fluid restrictions may result in acute metabolic problems, which must be addressed by the dialysis unit.
6. Explain that even with proper dialysis, patients may experience fluid imbalances and that all shortness of breath, unusual swelling, dizziness, etc. should prompt immediate medical attention and evaluation.

CKD-DP DISEASE PROCESS

OUTCOME: The patient/family will understand the patient's specific type of chronic kidney disease (CKD). (Choose from the following standards that apply to this patient's specific chronic kidney disease process.)

STANDARDS:

1. Explain that chronic kidney disease is irreversible and progressive. CKD can have many causes including:
 - a. Diabetic nephropathy
 - b. Hypertension
 - c. Glomerulonephritis
 - d. Infections, urinary tract abnormalities
2. Explain the basic pathophysiology of the specific type of CKD and its symptoms.

CKD-EQ EQUIPMENT

OUTCOME: The patient/family will understand hemodialysis and equipment used for home dialysis.

STANDARDS:

1. Explain function of hemodialysis machine and components used in filtering patient's blood.
2. Discuss types and features of medical equipment used for peritoneal dialysis.
3. Discuss proper disposal of used medical supplies.

CKD-L LITERATURE

OUTCOME: The patient/family will receive literature about chronic kidney disease.

STANDARDS:

1. Provide the patient/family with literature on chronic kidney disease.
2. Discuss the content of the literature.

CKD-LA LIFESTYLE ADAPTATIONS

OUTCOME: The patient/ family will strive to make the lifestyle adaptation necessary to deal with and prevent complications of the specific kidney disease and to improve overall health.

STANDARDS

1. Discuss that kidney disease is different for everyone. Advice from the doctor may change if the disease continues to progress. Explain that they can participate in their own care and ask questions.
2. Review the lifestyle aspects/changes that the patient has control over: food and exercise, taking medications safely, follow-up appointments, tobacco, alcohol. Review the community resources available to assist the patient in making lifestyle changes and make referrals as appropriate.
3. Explain that the patient should avoid blood draws (venipuncture), IVs and blood pressures on the arm with the fistula to protect blood vessels for potential dialysis access.
4. When discussing renal replacement therapy options, explain that people on dialysis or who have had a kidney transplant can often still work. Rehabilitation is preferred.
5. Explain that kidney failure affects not only the patient but, family, and friends as a major crisis. It is not uncommon for patients and their families to have feelings of fear, guilt, denial, anger, depression, and frustration but there is help available.
6. Explain that a mental health assessment might be beneficial, to allow patients to grieve through the emotional aspect (loss of kidney function). The patients may need to assess their own traditional beliefs to begin accepting dialysis treatment.

CKD-M MEDICATIONS

OUTCOME: The patient/family will understand the medications prescribed in the management of the patient's kidney disease.

STANDARDS:

1. Discuss proper use, benefits, common side effects and common interactions of prescribed medication including drug/drug and drug/food interactions.
2. Explain to the patient/family that the patient's physician(s) should be contacted before starting, stopping or changing any prescription medications, over-the-counter medications or dietary supplements.

3. Explain that the doctor may tell the patient to avoid certain medications like NSAIDs.
4. Explain that phosphate binding medications are necessary for many people with kidney disease. They serve two purposes: increase calcium in bones & help reduce phosphate levels.
5. Explain that the patient's medications may change after starting dialysis (as appropriate).
6. Emphasize the importance of bringing all medications to medical appointments.

CKD-MNT MEDICAL NUTRITION THERAPY

OUTCOME: The patient/family will understand the specific nutritional intervention(s) needed for treatment or management of chronic kidney disease.

STANDARDS:

1. Explain that Medical Nutrition Therapy (MNT) is a systematic nutrition care process provided by a Registered Dietitian (RD) that consists of the following:
 - a. Assessment of the nutrition related condition.
 - b. Identification of the patient's nutritional problem.
 - c. Identification of a specific nutrition intervention therapy plan.
 - d. Evaluation of the patient's nutritional care outcomes.
 - e. Reassessment as needed.
2. Review the basic nutrition recommendations for the treatment plan.
3. Discuss the benefits of nutrition and exercise to health and well-being.
4. Assist the patient/family in developing an appropriate nutrition care plan.
5. Refer to other providers or community resources as needed.

CKD-N NUTRITION

OUTCOME: The patient/family will understand the role of nutrition and chronic kidney disease.

STANDARDS:

1. Explain that an appropriate dietary regimen is essential in the management and treatment of kidney disease.
2. Discuss that the dietary regimen will change as laboratory values and other indices change in conjunction with disease progression and treatment.
3. All kidney disease patients must meet regularly with a Registered Dietitian for ongoing medical nutrition therapy.

CKD-P PREVENTION

OUTCOME: The patient/family will understand how to prevent or slow progression of chronic kidney disease (CKD). The patient/family will understand how to prevent complication(s) associated with vascular access placement, e.g., AV fistula, graft, or central line catheter.

STANDARDS:

1. Discuss with patient/family the importance of treating/controlling other medical conditions associated with CKD such as adequate blood glucose control in diabetic patients, high blood pressure control, and control of elevated cholesterol.
2. Screening family members who are at high risk for chronic kidney disease.
3. Emphasize the importance of using aseptic technique with peritoneal catheter care and during exchanges.
4. Emphasize the importance of keeping the central line catheter clean, dry, and avoid touching to prevent infection.
5. Emphasize the importance of assessing vascular access, e.g., feeling for thrill, checking for numbness, bleeding, and redness.

CKD-PRO PROCEDURES

OUTCOME: The patient/family will understand the risks, benefits, and alternatives of the proposed procedure(s) to be performed.

STANDARDS:

1. Explain the specific proposed procedure(s), e.g., biopsy, fistula, graft, central catheter, or peritoneal catheter to be performed, including the risks and benefits.
2. Discuss possible alternative(s) to the proposed procedure(s), e.g., fistula, graft, central catheter, or peritoneal catheter, in the event that the proposed procedure is not recommended.
3. Discuss with patient/family the involvement of required post-operative and maintenance care following the proposed procedure(s).

CKD-TE TESTS

OUTCOME: The patient/family will have a basic understanding of the test(s) to be performed, indications, and its influence on further care.

STANDARDS:

1. Explain the specific test(s) ordered and collection method, e.g., blood urea nitrogen, creatinine, phosphorus, calcium, albumin, urinalysis, CBC.
2. Explain the necessity, benefits, and risks of the test(s) to be performed and how it relates to the course of treatment.

3. Explain any necessary preparation and instructions for the testing, e.g., fasting.
4. Explain the meaning of the test results and its impact on further treatment, as appropriate.
5. Describe the patient's current estimated GFR as it relates to the stages of CKD developed by the National Kidney Foundation, as it pertains to the patient's quality of life.

CKD-TX TREATMENT

OUTCOME: The patient/family will have a basic understanding of treatment plan for CKD. The patient/family will have a basic understanding of the various modalities of renal replacement therapy to make an informed decision.

STANDARDS:

1. Discuss the specific treatment plan for CKD including treatment to conserve renal function and eventual need for renal replacement therapy.
2. Emphasize the importance of fully participating to medications, dietary, and lifestyle changes that may impede the rate of progression of chronic kidney disease.
3. Discuss the treatment plan with patient/family; emphasize the importance of full participation with therapeutic regimen, even if the patient is asymptomatic.
4. Explain that even with proper dialysis, patients may experience fluid imbalances; shortness of breath, unusual swelling, dizziness, etc. should prompt medical evaluation. Explain each possible renal replacement therapy:
 - a. Hemodialysis
 - i. Hemodialysis is the use of an artificial filtering of blood by a machine, removing metabolic wastes and excess fluids from the body.
 - ii. This procedure is normally initiated three times per week. Each session is usually three to four hours at a hemodialysis center.
 - iii. A fistula, a surgical connection of major blood vessels, is normally placed in the arm prior to the start of dialysis. A temporary placement may be established in other sites of the body such as the neck when an emergent condition arises.
 - b. Peritoneal dialysis
 - i. Peritoneal dialysis involves an artificial filtering of the blood by a bagged solution.
 - ii. This form of dialysis removes metabolic wastes and excess fluids from the body. This is done through an exchange system via osmosis to remove water and diffusion for glucose exchange/waste removal.
 - iii. This procedure is preformed on a daily basis at home.

- iv. Each session is dependent on the two different types of peritoneal dialysis used.
 - Intermittent Peritoneal Dialysis (IPD). This is normally completed once per day using multiple bags of dialysate, (bags of glucose fluids). A partner is usually needed.
 - Continuous Cycling Peritoneal Dialysis (CCPD). This is normally a nocturnal procedure regulated by an infusion pump administering a set amount of dialysate exchange throughout the night.
 - Continuous Ambulatory Peritoneal Dialysis (CAPD). This procedure is performed four times per day and there is fluid in the abdomen nearly 100% of the time. A partner is not necessary for this procedure.
- c. Kidney transplant
 - i. Kidney transplantation is completed in end stage kidney disease when the glomerular filtration rate drops to 10 mL/min.
 - ii. Persons older than 50 years of age with poor health or history of cancer often can not receive a transplant.
 - iii. Children must receive an evaluation from a pediatric renal transplant team prior to receiving a transplant or being considered as a donor.
 - iv. After a renal transplant, the patient has a functioning donor kidney. Medications and regular medical evaluations will usually be required to prevent rejection.
 - v. It is important for patients to understand that anti-rejection medication must be taken as prescribed through out their life to prevent kidney rejection. Anti-rejection medications may have very unpleasant side effects.
 - vi. Patients with co-morbidities leading to initial kidney failure must be instructed to follow all prescribed regimens to avoid subsequent kidney failure.
 - vii. There is a possibility that a donor kidney may fail or be rejected even under ideal conditions.
- 5. Review with the patient/family the risks and benefits of each renal replacement therapy option and the consequences of refusing treatment.