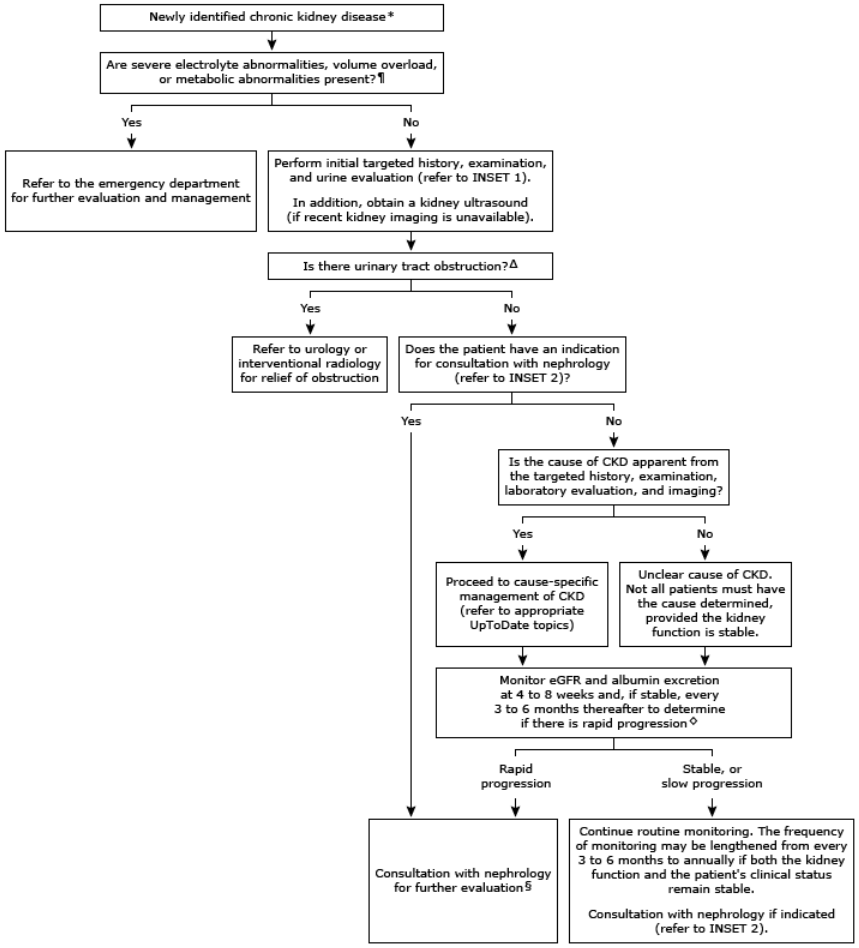
Newly identified chronic kidney disease (CKD)



INSET 1: Targeted history, examination, and laboratory evaluation

Targeted cause-specific history

Does the patient have a history of any of the following?

- Type 2 diabetes or long-standing type 1 diabetes
- Long-standing hypertension
- Severe peripheral vascular disease, cardiovascular or cerebrovascular disease
- Prior recurrent or severe acute kidney injury, especially if dialysis-requiring
- Obesity
- Heart failure or liver failure
- Known autoimmune disorder that often involves the kidney (eg, SLE, Sjögren syndrome)
- Known multiple myeloma or monoclonal gammopathy
- Recurrent and complicated urinary tract infections or kidney stones
- Known renal anatomical abnormalities (eg, renal agenesis, prior nephrectomy)
- Family history of a genetically transmitted kidney disease such as autosomal dominant polycystic kidney, sickle cell disease, Alport syndrome, or autosomomal dominant insterstitial kidney disease
- Cancer treated with cytotoxic chemotherapy, molecular targeted therapy, immunotherapy, or radiotherapy
- Prior urologic, pelvic, or retroperitoneal surgery, known or suspected pelvic or retroperitoneal malignancy
- Risk factors for, or known infection with, HIV, HCV, or HBV infection
- Exposure to nephrotoxins or toxic environmental exposures such as aristolochic acid containing herbs, analgesics, lithium, or lead
- Agricultural work in hot climate, or other geographical environmental exposures (eg, living in an area with endemic schistosomiasis)

Targeted physical examination

Does the patient have any of the following:

- Signs of volume depletion
- Signs of volume overload
- Presence of arteriovenous nicking or retinopathy on retinal examination
- Abdominal bruit
- Flank pain or enlarged kidneys
- Peripheral neuropathy
- Rash
- Palpable purpura
- Skin thickening and skin hardness

Targeted laboratory evaluation

- Basic metabolic panel
- Complete blood count
- Urine dipstick
- Urine microscopy (lab or manual)
- Urine albumin and protein quantification (typically a urine albumin-to-creatinine ratio and protein-to-creatinine ratio on a random urine sample)
- Serum protein electrophoresis with immunofixation and serum free light chains (if the patient is ≥40 years of age and has hypercalcemia, severe anemia, bony lesions, or no other obvious cause of CKD)

INSET 2: Indications for consultation with nephrology

- eGFR <30 mL/min/1.73 m^2
- Persistent urine albumin/creatinine ratio ≥300 mg/g (34 mg/mmol)
- Persistent urine protein/creatinine ratio ≥500 mg/g (56.5 mg/mmol)
- Abnormal urine microscopy (cellular casts, nonurologic hematuria, sterile pyuria)
- Personal history of systemic autoimmune disease
- Large cystic kidneys by kidney imaging or examination
- Known history of multiple myeloma or monoclonal gammopathy
- Evidence for rapidly progressive loss of kidney function (reduction in eGFR >5 mL/min/1.73 m^2 per year or a decline by >25%)
- Difficult to manage laboratory abnormalities (eg, hyperkalemia, metabolic acidosis, anemia)
- Patient with a single kidney and an eGFR <60 mL/min/1.73 m^2
- Confirmed or presumed hereditary kidney disease (such as polycystic kidney disease, Alport syndrome, or autosomal dominant insterstitial kidney disease)
- Recurrent extensive nephrolithiasis
- Resistant hypertension
- Pregnancy
- Young patients with an unclear cause of CKD (who many need a kidney biopsy)

CKD: chronic kidney disease; eGFR: estimated glomerular filtration rate; SLE: systemic lupus erythematosus; HCV: hepatitis C virus; HBV: hepatitis B virus.

* CKD is defined by the presence of kidney damage or decreased kidney function for 3 or more months, irrespective of the cause. Kidney damage refers to pathologic abnormalities, whether established with a kidney biopsy or imaging studies, or inferred from markers such as urinary sediment abnormalities or increased rates of urinary albumin excretion. Decreased kidney function refers to a decreased eGFR (eGFR <60 mL/min/1.73 m^2).

¶ Dialysis may be needed urgently if a patient with markedly impaired eGFR (ie, eGFR <15 mL/min/1.73 m^2) has severe and refractory hyperkalemia, acidosis, or hypervolemia; in addition, severe uremic symptoms (encephalopathy, pericarditis, etc) often warrant initiation of dialysis. Most patients presenting with CKD will not require dialysis at presentation. Refer to UpToDate topic on indications for initiation of dialysis in patients with CKD.

Δ Urinary tract obstruction typically causes decreased eGFR if the obstruction is bilateral; unilateral obstruction may lead to decreased eGFR if the obstructed kidney was the primary functioning kidney, or if both kidneys are damaged due to another disorder such that neither kidney has functional reserve. Kidney ultrasound may also corroborate the presence of CKD (revealing small echogenic kidneys) or may suggest an alternate etiology of CKD, such as cystic kidney disease. Refer to UpToDate topic on radiographic assessment of kidney disease.

◇ Rapid progression is defined as a decrease in eGFR >5 mL/min/1.73 m^2 over a year (or a corresponding rate of decline over a shorter period of time), or a 25% decline in eGFR from baseline. Rapid progression over 4 to 8 weeks should be viewed as subacute kidney injury and may warrant urgent consultation with nephrology. Refer to UpToDate topic on subacute kidney injury.

§ Consultation with nephrology may result in directed medical management, kidney biopsy, and dialysis planning when indicated.