

PLAN OF CARE AND ACTION PLAN FOR CHRONIC KIDNEY DISEASE STAGES 1–4

Stage & GFR	Description	Action	Clinical Testing	Treatment Considerations
Normal >90 mL/min/1.73 m²	Risk factors: age >60 years, obesity, autoimmune disorders, DM, HTN, kidney stones, ADPKD, prior ARF, UTIs, toxic drug exposures, and FH of CKD	SCREEN for general and specific conditions SCREEN for CKD w/ GFR INITIATE CKD risk reduction / intervention strategies	BP monitoring: every 12 mo FASTING lipid profile: every 12 mo LYTES , Glucose, BUN, SCr, eGFR every 12 mo UA for hematuria or proteinuria & microscopic exam	SMOKING cessation WEIGHT reduction DAILY aspirin: 81 mg once daily TARGETS BP: <130/80 mmHg LIPIDS: LDL-C <70–100 and TG <150 mg/dL GLUCOSE: FBS <130 mg/dL, HbA1C <7%
1 >90 mL/min/1.73 m²	KIDNEY damage with normal GFR (urinary, imaging or histologic abnormalities)	ESTABLISH etiology of CKD DIAGNOSE and treat CVD risk factors and comorbid conditions	BP monitoring: every 12 mo LYTES , Glucose, BUN, SCr, eGFR : every 12 mo LIPID profile: every 12 mo UA with microscopic evaluation UPC if non-diabetic: every 12 mo UACR if diabetic: every 12 mo	CONSULT Nephrology if eGFR declines by ≥ 4 mL/min/yr TARGETS BP: <130/80 mmHg LIPIDS: LDL-C <70–100, TG <150 mg/dL; non-HDL-C <130 mg/dL PROTEINURIA: UPC <0.2; UACR <30 mg/g; anti-proteinuric therapy with ACEI and/or ARB
2 60 – 89 mL/min/1.73 m²	KIDNEY damage with mild GFR decrease (urinary, imaging or histologic abnormalities) Most lower GFRs in this range are due to age-related GFR decline and do not require evaluation, if no proteinuria is present	ESTIMATE CKD progression rate DIAGNOSE and treat CVD risk factors and comorbid conditions	BP monitoring: every 3–12 mo LYTES , Glucose, BUN, SCr, eGFR : every 6–12 mo CBC , reticulocyte ct, TSAT, ferritin if Hb 10–12 g/dL: every 12 mo CONSIDER Ca / P / PTH / 25(OH)D evaluations UACR or UPC : every 3–12 mo	AVOID nephrotoxins; rule out AKI / ARF, eg, obstruction TARGETS BP: <130/80 mmHg LDL-C: <70–100, TG <150, and non-HDL-C <130 mg/dL Hb: 10–12 g/dL, TSAT >20%, and ferritin >100 ng/mL UACR: <30 mg/g or UPC <0.2 with anti-RAAS drug
3A 45 – 59 mL/min/1.73 m² 3B 30 – 44 mL/min/1.73 m²	MODERATE decline of GFR COMPLICATIONS more frequent at CKD Stage 3B as GFR ↓ to <45 mL/min/1.73 m ² . PROTEINURIA is a serious CV risk factor and has prognostic importance for progression of CKD	ESTIMATE CKD progression rate DIAGNOSE and treat CVD risk factors and comorbid conditions KIDNEY imaging study, eg, US or CT CONSIDER Nephrology CONSULTATION	BP monitoring: every 3–12 mo LYTES , Glucose, BUN, SCr, eGFR : every 3–12 mo CBC: Hb <10 g/dL every 1–3 mo until Hb 10–12 g/dL; then every 3–6 mo TSAT and ferritin if Hb <13 g/dL (males) or 12 g/dL (females) and after therapy BASELINE Ca / P / PTH / Alk Phos / 25(OH)D Ca / P / PTH / Alk Phos, depending on baseline and CKD progression 25(OH)D , depending on baseline and response to treatment EVALUATE for extraskeletal calcification UPC or UACR : every 6–12 mo	AVOID nephrotoxins; rule out ARF (eg, obstruction) NUTRITIONAL assessment at any time during CKD Stages 3–5 TARGETS Hb: 10–12 g/dL, TSAT >20%, ferritin >100 ng/mL with oral and / or iv iron and/or erythropoiesis stimulating agent Ca & P: to normal range with P-binders (no Ca-based P-binders if vascular / valvular calcification) 25(OH)D: ≥ 30 ng/mL with vitamin D2 / D3 iPTH: 130–600 pg/mL with calcitriol or vitamin D analogs if iPTH progressively increases NaHCO₃: 22–26 mEq/L and titrate NaHCO ₃ therapy UPC: <0.2 or UACR <30 mg/g with anti-RAAS drug
4 15 – 29 mL/min/1.73 m²	SEVERE decline of GFR MAJOR increase in CVD risk, ie, CKD Stage 4 should be considered equivalent to a major CVD clinical event	NEPHROLOGY consultation with transition of management and care INITIATE decisions regarding kidney replacement therapy, vascular access, and kidney transplant DIAGNOSE and treat CVD risk factors and comorbid conditions ADJUST drug dosing for CKD stage	BP monitoring: every 3–6 mo LYTES , Glucose, BUN, SCr, eGFR every 3–12 mo CBC , TSAT, ferritin: every 3–6 mo BASELINE Ca / P / PTH / Alk Phos / 25(OH)D; then repeat levels every 6–12 mo EVALUATE for extraskeletal calcification UPC or UACR : every 3–12 mo	CKD-specific education: kidney replacement therapy modality IMMUNIZATIONS: TIV, PPV-23, and HBV (consider Tdap, VZ) REINFORCE dietary prescription RENAL- formulated MVI PROTECT dominant (handwriting) arm VASCULAR access surgery evaluation TARGETS Hb: 10–12 g/dL, TSAT >20%, ferritin >100 ng/mL with oral and/or iv iron and/or ESA (darbepoetin or epoetin) Ca & P: to normal range with P-binders (no Ca-based P-binders if vascular / valvular calcification) 25(OH)D: ≥ 30 ng/mL with vitamin D2 / D3 iPTH: to 130–600 pg/mL with calcitriol or vitamin D analogs, if iPTH progressively increases NaHCO₃: 22–26 mEq/L with NaHCO ₃ therapy UPC: <0.2 or UACR <30 mg/g with anti-RAAS therapy (consider stopping anti-RAAS therapy if GFR <20) HBV Ab titer: ≥ 10 mIU/mL

COMMENTS

- Early recognition, evaluation, and treatment of CKD in a multidisciplinary fashion, decreases morbidity, mortality, and healthcare costs.
- eGFRs <45 mL/min/1.73 m² in older persons (age > 65 yo) may not require Nephrology evaluation in all cases, unless there is heavy proteinuria (UACR >0.5 or UPC 0.5–1.0) or a progressive decline in eGFR (> 4 mL/min/1.73 m²).
- Always consider reversible etiologies of acute kidney injury (AKI) / acute renal failure (ARF) at any stage of CKD, eg, urinary tract outlet obstruction, volume depletion, and adverse drug reactions.
- CKD Stage 5 patients require management by a nephrologist.