

Health Benchmarks® Program

Clinical Quality Indicator Specification 2011

Measure Title	CHRONIC KIDNEY DISEASE (CKD): MONITORING PARATHYROID HORMONE (PTH)		
Disease State	Chronic Kidney Disease	Indicator Classification¹	Disease Management
Strength of Recommendation²	B		
Organizations Providing Recommendation	National Kidney Foundation Kidney Disease Improving Global Outcomes		
Clinical Intent	To ensure that members with chronic kidney disease (CKD) are monitored for PTH levels at least once annually.		
Background	<p>Disease Burden</p> <ul style="list-style-type: none"> • Chronic kidney disease (CKD) affects 26 million people within the United States and 1% of the US population has CKD severe enough to require dialysis.[1-4] • In addition, CKD patients account for 27.6% of general Medicare expenditure.[5, 6] • Some racial groups are at increased risk for CKD. Compared to Caucasians, African Americans are nearly four times as likely to develop kidney failure, Native Americans have nearly three times the risk, Hispanic Americans have nearly twice the risk as non-Hispanic whites, and Asians have nearly one and half times the risk. [7, 8] <p>Reason for indicated intervention and treatment</p> <ul style="list-style-type: none"> • Patients with CKD have a tendency to retain phosphorus due to decreased kidney filtration and additionally have diminished kidney hydroxylation of 25-hydroxyvitamin D to calcitriol (1, 25-dihydroxyvitamin D), resulting in hyperphosphatemia, calcitriol deficiency, and ultimately hypocalcaemia.[9-12] • In response to hypocalcaemia and hyperphosphatemia, the parathyroid gland appropriately increases secretion of parathyroid hormone (PTH) to augment the release of calcium phosphate from bone and decrease the re-absorption of phosphorus within kidney tubules.[9-11] • However, secondary hyperparathyroidism may result if the deficiencies in calcitriol levels and phosphorus excretion are not corrected in patients with kidney failure.[9-11, 13] • Secondary hyperparathyroidism causes increased bone turnover and kidney osteodystrophy.[9-11, 13] • In addition, the abnormal calcium and phosphorus metabolism which results from abnormal kidney filtration and hyperparathyroidism, leads to elevated calcium phosphorus product, which is associated with increased mortality in dialysis patients.[14] 		

- Elevated calcium phosphorus product increases the likelihood that calcium phosphate will precipitate in arteries, joints, soft tissues, and viscera.[15, 16]

Evidence supporting Intervention or Treatment

- Depending on the severity of hyperparathyroidism, treatment includes can be treated by calcitriol supplementation or parathyroidectomy.[4]
- Because of the severe consequences of abnormal calcium, phosphate, vitamin D, and parathyroid abnormalities in kidney disease and the possibility for prevention of these consequences with appropriate treatment, the National Kidney Foundation recommends that patients with CKD be monitored regularly once their GFR drops below 60mL/min/1.73m² (> stage 3 kidney disease).[4]
- The National Kidney Foundation recommends that patients with CKD initiate measurement of serum levels of calcium, phosphate, and parathyroid hormone once their GFR drops below 60mL/min/1.73m². Frequency of testing should be based on the stage of CKD. See Table below:[4]

Clinical Recommendations

CKD Stage	GFR Range (mL/min/1.73m ²)	Measurement of PTH	Measurement of Calcium/Phosphorous
3	30-59	Every 12 months	Every 12 Months
4	15-29	Every 3 months	Every 3 months
5	<15 or dialysis	Every 3 months	Every month

- The Kidney Disease Improving Global Outcomes (KDIGO) Clinical Practice Guideline for the Diagnosis, Evaluation, Prevention, and Treatment of Chronic Kidney Disease-Mineral and Bone Disorder recommends monitoring serum levels of calcium, phosphorus, PTH, and alkaline phosphatase activity beginning in CKD stage 3 (1C) in adults and CKD stage 2 (2D) in children. In CKD stage 3, the frequency of PTH measurement should be based on baseline level and CKD progression. In CKD stage 4, PTH should be measured every 6-12 months. In CKD stage 5, PTH should be measured every 3-6 months. Of note, KDIGO defines grades for their statements using both a number and a letter. Although a grade of 'C' denotes low quality of evidence, a grade of '1' denotes that most people in this situation would want the recommended course of action and this recommendation can be adopted as a policy in most situations.[17]

Source IMS Health

Algorithm to identify chronic kidney disease: Kern et al. 2005, Winkelmayer et al. 2005.[18, 19]

Endorsed by the National Quality Forum (NQF)

Denominator

Denominator Definition Members with at least 1 inpatient diagnosis of chronic kidney disease during the year prior to the measurement year or members with at least 2 diagnoses of chronic kidney disease in an outpatient setting during the measurement year or year prior (at least 1 of which must be during the year prior to the measurement year), or members on dialysis or who utilized dialysis during the year prior to the measurement year.

Denominator Index Date N/A

Denominator Encounters/Claims Criteria CPT-4 code(s): 36145*, 36147, 36148, 36800, 36810, 36815, 36818-36821, 36825, 36830-36833, 36838, 36870, 49421, 75790*, 75791, 90920, 90921, 90924, 90925, 90935, 90937, 90939*, 90940, 90945, 90947, 90951-90999, 99201-99205, 99211-99215, 99217-99220, 99221-99223, 99231-99233, 99234-99236, 99238-99239, 99241-99245, 99251-99255, 99261*-99263*, 99271*-99275*, 99291-99300, 99301*-99303*, 99304-99310, 99311*-99313*, 99315-99316, 99318-99337, 99341-99350, 99354-99355, 99356-99357, 99366, 99381-99387, 99391-99397, 99401-99429, 99431*-99440*, 99450, 99455-99456, 99460-99465, 99468-99476, 99477-99480

CPT-4 category II code(s): 0505F, 0507F, 3066F, 3082F-3084F, 4051F-4055F

DRG code(s): 316, 317

HCPCS code(s): A4653, A4671-A4918, E1500-E1699, G0257, G0314-G0319, G0322, G0323, G0326, G0327, G8075, G8076, G9013, G9014

ICD-9 diagnosis code(s): 250.4x, 274.1x, 403.01, 403.11, 403.90, 403.91, 404.02, 404.03, 404.10, 404.11, 404.12, 404.13, 404.90, 404.91, 404.92, 404.93, 458.21, 581.xx, 582.xx, 583.xx, 585.3-585.5, 585.6, 586, 587, 588.xx, 753.0, 753.10-753.17, 753.19, 792.5, 996.56, 996.62, 996.68, 996.73, E870.2, E874.2, E879.1, V45.1x, V56. Xx

ICD-9 surgical proc code(s): 38.95, 39.27, 39.42, 39.93, 39.95, 54.98

MS-DRG code(s): 682-684, 685

UB revenue code(s): 010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x-022x, 0304, 051x, 0520-0523, 0526-0529, 057x-059x, 072x, 077x, 080x, 0800-0809, 082x-085x, 0820-0859, 088x, 0880, 0881, 0882, 0889, 0982, 0983, 0987

*Code range was retired but is still appropriate for retrospective analysis.

Denominator Exclusion

Denominator Exclusion Definition Members who are in hospice during the measurement year.

Denominator Exclusion Claims Criteria	<p>CPT-4 code(s): 99376*, 99377, 99378</p> <p>HCPCS code(s): G0065*, G0182, G0337, Q5001-Q5009, S0255, S0271, S9126, T2042-T2046</p> <p>ICD-9 diagnosis code(s): V66.7</p> <p>Place of service code(s): 34</p> <p>UB type of bill code(s): 81x, 82x</p> <p>UB revenue code(s): 0115, 0125, 0135, 0145, 0155, 0235, 0650-0652, 0655-0659</p> <p>*Code range was retired but is still appropriate for retrospective analysis.</p>
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Numerator

Numerator Definition	Members who received a PTH level test during the measurement year.
Numerator Claims Criteria	<p>CPT-4 code(s): 75893, 83970</p> <p>CPT-4 category II code(s): 3278F</p>

Physician Attribution

Physician Attribution Description	All physicians who saw the member during the measurement year.
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References

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¹ **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Diagnosis	Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g., evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain).
Effectiveness of Care	
Prevention	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g., immunizations).
Screening	Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g., pap smears; screening for elevated blood pressure).
Disease Management	Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g., cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).
Medication Monitoring	Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g., thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy).
Medication Adherence	Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g., adherence to lipid lowering medication).
Utilization	Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g., conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).

² Strength of Recommendation

Strength of Recommendation Based on a Body of Evidence

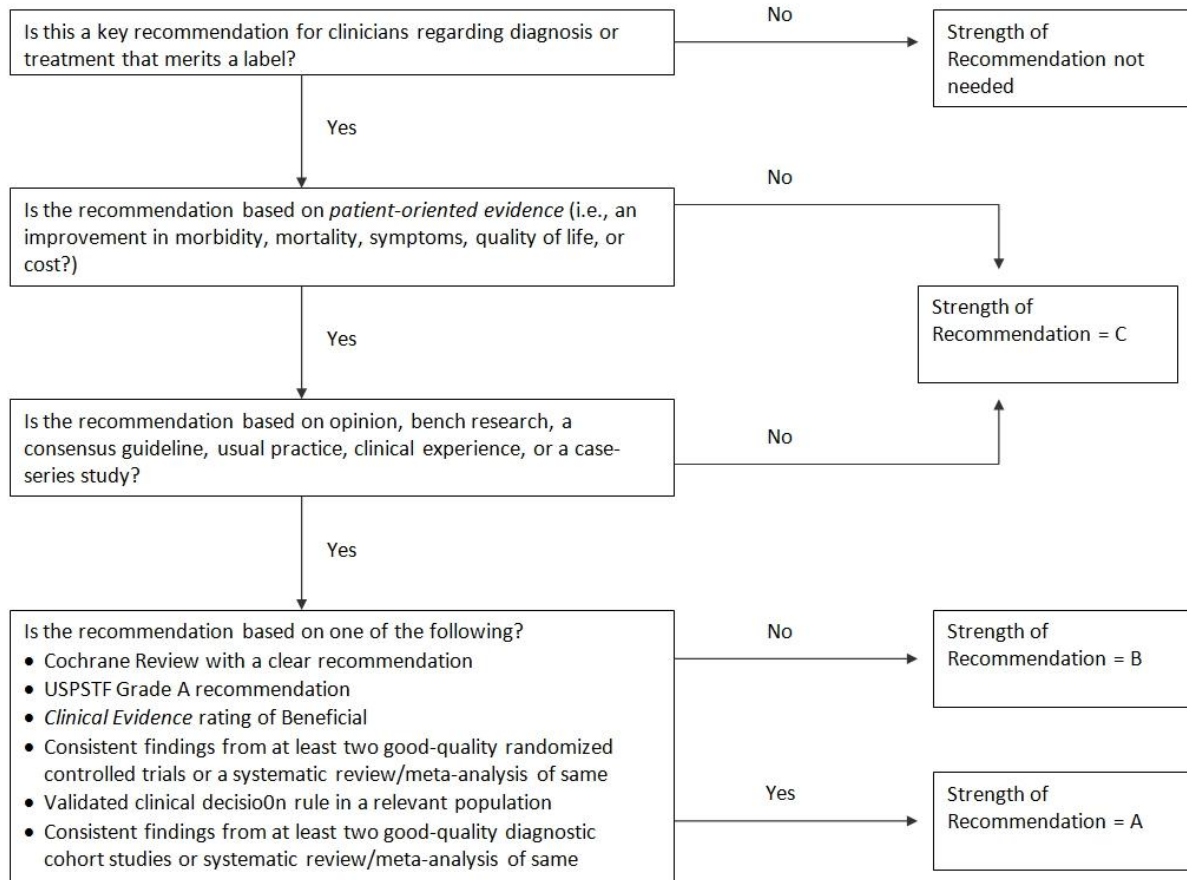


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)