## HOW to stage and code CKD

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>GFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kidney damage with normal or mild GFR</td>
<td>≥ 90</td>
</tr>
<tr>
<td>2</td>
<td>Kidney damage with moderate GFR</td>
<td>60–89</td>
</tr>
<tr>
<td>3</td>
<td>Moderate GFR</td>
<td>30–59</td>
</tr>
<tr>
<td>4</td>
<td>Severe GFR</td>
<td>15–29</td>
</tr>
<tr>
<td>5</td>
<td>Kidney failure</td>
<td>&lt; 15</td>
</tr>
</tbody>
</table>

### Clinical Presentations

**Stage 1**
- Kidney damage with normal or mild GFR
  - Markers of damage (nephrotic syndrome, nephritic syndrome, tubular syndromes, urinary tract symptoms, asymptomatic urinalysis abnormalities, asymptomatic radiologic abnormalities, hypertension due to kidney disease)

**Stage 2**
- Kidney damage with moderate GFR
  - Markers of kidney damage
  - Mild to severe complications:
    - Anemia
    - Bone and mineral disorder
    - Cardiovascular disease
    - Hypertension
    - Elevated parathyroid hormone
    - Lipid abnormalities
    - Low serum albumin

**Stage 3**
- Moderate GFR
  - Diabetics
  - Those > 60 years old

**Stage 4**
- Severe GFR
  - Diabetics
  - Those > 60 years old

**Stage 5**
- Kidney failure
  - < 15 GFR
  - Includes all of the above
  - Uremia
  - Cardiovascular disease

### Other codes are relevant?

#### ICD-9-CM

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>585.1</td>
<td>Chronic kidney disease (CKD), unspecified</td>
</tr>
<tr>
<td>585.2</td>
<td>Chronic renal failure NOS</td>
</tr>
<tr>
<td>585.3</td>
<td>Chronic renal insufficiency</td>
</tr>
<tr>
<td>585.4</td>
<td>Chronic renal failure MFS</td>
</tr>
<tr>
<td>585.5</td>
<td>Anemia of chronic kidney disease</td>
</tr>
<tr>
<td>585.6</td>
<td>Chronic renal failure MFS</td>
</tr>
</tbody>
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### Markers of kidney disease

**Stage 1**
- Kidney damage with normal or mild GFR
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    - Anemia
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- Moderate GFR
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- Kidney failure
  - < 15 GFR
  - Includes all of the above
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### WHO.int: How can you do?

1. Recognize risk factors for CKD
   - Diabetes
   - Hypertension
   - Family history of CKD, diabetes or hypertension
   - U.S. ethnicity minority status
   - Older than 60 years of age
   - Nephrotoxic medications (e.g. NSAIDs)

2. Do two simple tests
   - “Spot” urine for albumin-to-creatinine ratio (ACR) to detect albuminuria
   - Serum creatinine to estimate glomerular filtration rate (GFR)

### IMPLeMENt a clinical action plan for CKD

1. Consider co-management with a nephrologist if the clinical action plan cannot be carried out
2. Refer to a nephrologist when GFR < 30 mL/min/1.73 m²

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### Abbreviations:

- ESRD, end stage renal disease
- CKD, chronic kidney disease
- NOS, not otherwise specified.