Introduction

Although CKD is common, many Americans at high risk for developing the disease do not know they are at risk. More than 35% of people aged 20 years or older with diabetes have CKD, and more than 20% of people aged 20 years or older with hypertension have CKD. In addition, CKD is generally more common among women than men.

Overview of CKD

Chronic kidney disease is characterized by kidney damage for 3 or more months, as defined by structural or functional abnormalities of the kidney, with or without decreased glomerular filtration rate (GFR), manifest by either pathological abnormalities, or markers of kidney damage, including abnormalities in the composition of the blood or urine, or abnormalities in imaging tests. In addition, all individuals with GFR less than 60 mL/min/1.73 m² for 3 or more months, with or without kidney damage, are classified as having CKD.

Potential outcomes of CKD include progressive loss of kidney function and complications associated with decreased GFR, such as hypertension, anemia, malnutrition, neuropathy, and decreased quality of life. Kidney failure can also result from CKD, and patients may also develop cardiovascular disease.

Adverse outcomes of CKD can often be prevented or delayed through early detection and treatment. Earlier stages of CKD can be detected through routine laboratory measurements. The presence of CKD should be established based on the presence of kidney damage and GFR, irrespective of diagnosis. Among patients with CKD, the stage of disease is assigned based on the level of kidney function, irrespective of diagnosis, according to the National Kidney Foundation Kidney Disease Outcomes Quality Initiative (NKF KDOQI) CKD classification shown in Table 1.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>GFR (mL/min/1.73 m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kidney damage with normal or ↑ GFR</td>
<td>≥90</td>
</tr>
<tr>
<td>2</td>
<td>Kidney damage with mild ↓ 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 (or dialysis)</td>
</tr>
</tbody>
</table>

There are numerous risk factors for developing CKD. Clinical risk factors include: diabetes, hypertension, autoimmune diseases, systemic infections, urinary tract infections, urinary stones, lower urinary tract obstruction, neoplasia, family history of CKD, recovery from acute kidney failure, reduction in kidney mass, exposure to certain drugs, and low birth weight. Sociodemographic risk factors include: older age, U.S. ethnic minority status (i.e., African American, American Indian, Hispanic, Asian, or Pacific Islander), exposure to certain chemical and environmental conditions, and low income/education.

Risk factors for worsening kidney damage or faster decline in GFR include higher levels of proteinuria, higher blood pressure, poor glycemic control in diabetes, and smoking. Risk factors for increased morbidity and mortality in kidney failure include lower dialysis dose (Kt/V), temporary vascular access, anemia, lower serum albumin level, and late referral to nephrologist.
Many patients with CKD have a number of comorbid conditions. Common CKD comorbidities include diabetes, hypertension, cardiovascular disease, and anemia. Data indicate that the prevalence of these comorbidities increases with CKD progression. Early detection and treatment of CKD can improve outcomes.

**Barriers to Preventing Improved Patient Outcomes in CKD**

Chronic kidney disease is a serious public health problem associated with increasing prevalence rates, rising healthcare costs, and high rates of mortality from comorbid conditions. Barriers preventing improved patient outcomes in CKD include:

- Lack of public and patient awareness and concern regarding risks associated with CKD
- Lack of coordination between primary care physicians and nephrologists
- Inadequate recognition that end-stage renal disease (ESRD) is not the only patient outcome of CKD
- Inadequate understanding of optimal context for CKD screening, prevention, and treatment
- Unwillingness among payers to cover and reimburse early CKD care
- Absence of a coordinated system of care

**Approaches to Improve Systems to Detect and Manage CKD**

Although it is now understood that early detection and management of CKD can delay disease progression and decrease complications and comorbidities, CKD remains under-diagnosed. In order to improve systems to detect and manage CKD, hospitals must increase awareness of primary prevention and early detection by promoting awareness of CKD risk factors and the importance of testing for kidney disease. Hospitals should also aim to increase the proportion of patients with CKD who know they have impaired kidney function and increase the number of at-risk patients who get tested for kidney disease. Risk factor prevention and early detection should be emphasized while supporting and promoting quality self-management education programs.

Clinical practice guidelines should also be applied in order to develop processes for annual measurement of microalbuminuria and GFR for all patients with diabetes, hypertension, cardiovascular disease, and/or a family history of kidney disease, followed by timely intervention and disease management. It is also critical to increase the proportion of patients with diabetes and CKD who receive recommended medical treatment and to improve cardiovascular care in patients with CKD. Clinical practice guidelines should also be used to:

- Increase the proportion of CKD patients receiving care from a nephrologist at least 12 months before the start of renal replacement therapy (RRT)
- Increase the proportion of adult hemodialysis patients who use arteriovenous fistulas as the primary mode of vascular access
- Increase the use of pre-emptive transplantation as an RRT option
- Promote and improve professional education
- Reduce the rate of new cases of ESRD

Enhancing data and surveillance systems may also improve detection and management of CKD by facilitating the identification of statistically significant subgroups at risk for CKD and yielding population-based data to identify the number of patients with CKD at each stage. It can also help identify costs associated with CKD, its precursors and comorbidities, including projected future costs. Hypotheses and conclusions may also be developed to help direct public health efforts.

**Monitoring Physician Performance and Improving Quality of Care**

Insurance companies often base coverage decisions on guidelines set forth by the following groups: NKF KDOQI; Kidney Disease: Improving Global Outcomes (KDIGO); Renal Physicians Association (RPA); and Fistula First Breakthrough Initiative (FFBI). Thorough physician documentation is critical for reimbursement of screening at-risk populations (e.g., GFR), determining extent of kidney damage (e.g., urine protein that persists ≥3 months, ultrasound or biopsy), and CKD staging. In addition to affecting reimbursement, incomplete documentation can also affect patient outcomes and may increase risk of liability and malpractice claims.
Factors to review when assessing patient outcomes include:

- Cardiovascular disease and complications of decreased GFR
- Disease progression related to an inappropriate medical action
- Medical injury
- Manifest toxicity from a medication error
- Iatrogenic illness
- Nosocomial infections
- Death related to medical treatment or accident

Privileging is a process that recognizes that a physician is both qualified and competent. It defines a physician’s scope of practice and the clinical services he or she may provide, and it is based on demonstrated competence and is a data-driven process. Physician privileging involves gathering information with which to decide the types of care, treatment, and services or procedures that a practitioner will be authorized to perform in a specific setting (e.g., hospital), taking into consideration setting-specific characteristics, such as adequacy of the facilities, equipment, and number and type of qualified support personnel and resources. Other criteria that determine the practitioner’s qualifications include the physician’s education, training (residency and/or fellowship), and clinical experience (number of procedures performed with satisfactory outcomes).

The RPA has developed a statement on privileging and credentialing for nephrology. The most recently revised statement covers the following topics: training, credentialing, maintenance of certification, and privileging of nephrologists; those procedures and clinical situations in which optimal patient care for kidney patients would warrant the services of a nephrologist; and training and credentialing in the field of interventional nephrology.

Privileging requires qualified and objective physician-controlled peer review, utilizing criteria that have been established through common legal, professional, and administrative practices, endorsed by a formal consensus process, and that are publicly available. These criteria must be directly related to quality of patient care, and documented physician performance should be measured against these criteria. Peer review decisions must be fair and without conflicts of interest and have dated detailed documentation, and should be confidential and protected.

Hospitals with a history or pattern of retaining or contracting with incompetent and low-quality providers may be subject to potential legal liability for any injuries to patients, exclusion from federal and state health benefit program participation, loss of commercial contracts, and loss of accreditation by healthcare standards organizations.

**How External Peer Review Helps Hospitals Ensure Quality of Patient Care & Safety**

Ongoing evaluation of hospital practitioners ensures excellence in physician performance and the highest standard of care for patients. External peer review allows hospitals to perform not only in-depth evaluation of sentinel events, but also (re)credentialing, (re)privileging, proctoring, and ongoing measurement and monitoring of physician performance.

Peer review committees composed primarily of in-house hospital personnel often lack the resources to help the hospital achieve its performance improvement goals, and social and professional relationships lead to conflicts of interest. External peer review avoids conflicts of interest that can arise from economic, professional, or social ties among physicians within a single institution. It may also be an effective solution for hospitals that lack adequate physician resources to conduct timely performance analyses.

When properly executed, external peer review can reduce medical errors through objective evaluations performed in a nonpunitive, educational context that supports a healthy culture of continuous improvement. This results from physicians knowing that their work will be objectively evaluated at regular intervals by board-certified specialists with the same credentials and from similar practice settings, thereby leading to improved quality of care and patient safety. Ongoing evaluation of physicians can also uncover problematic practice patterns, as well as physician- and hospital-level issues that need to be addressed.
External peer review can also play a key role in reducing or eliminating risks associated with increased malpractice claims. Unlike internal peer review, which only looks at sentinel events, external peer review can help hospitals to discover, highlight, and deal with physician performance issues quickly and efficiently before they turn into claims.

Conclusions

Chronic kidney disease often develops so slowly that many individuals remain undiagnosed until the disease is advanced. Late-stage diagnosis is associated with poor control of most risk factors for disease progression and potentially life-threatening complications, significantly lowering survival. While the greatest emphasis has been on patients needing dialysis or transplantation, improving hospital systems to detect and manage CKD at earlier stages and monitoring physician performance may improve patient outcomes, as well as decrease mortality and morbidity rates.

Bibliography


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