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Section I

Chronic Kidney Disease and End Stage Renal Disease

Kidneys clean the blood and balance bodily fluids by removing excess fluid and waste products from the body. The kidneys also play important roles in sustaining the skeletal system and producing red blood cells. Impaired kidney function causes a host of health problems in virtually every organ system and imposes significant costs on individuals and society.

- The top two causes of chronic kidney disease (CKD) in adults are diabetes and high blood pressure (hypertension). Both conditions can be medically managed and mitigated; such intervention is crucial to reducing individuals’ risk of developing CKD. The causes in children vary by age; those from birth to early teens usually have cystic, hereditary, or congenital disease. From 15-19 years, the cause of CKD is most often glomerulonephritis.

- More than 25 million Americans have diabetes, and approximately 73 million Americans have hypertension. All are at risk of developing CKD.

- Minorities, including African Americans, Hispanics, Asians, and Pacific Islanders, are disproportionately affected by CKD. Reports have shown that minorities are two to four times more likely than non-minorities to experience kidney failure.

- CKD can lead to numerous health problems, such as anemia, cardiac complications, bone loss, and death.

- Ways to mitigate the complications of CKD include addressing the underlying causes by ensuring that individuals with diabetes and/or hypertension receive treatment and properly manage the disease(s).

- Left untreated, CKD can develop into end stage renal disease (ESRD), which requires constant treatment known as dialysis therapy. This therapy involves artificially cleaning wastes from the blood with special medical equipment. Another treatment option for individuals with ESRD is kidney transplantation.

- Most patients with ESRD (69.8%) receive dialysis either at a dialysis center or at home. Transplantation is limited by the number of available kidneys, suitable donors, and the medical condition of the potential recipients. Approximately 21% of adults with ESRD are wait-listed for or receive a kidney transplant within the first year of dialysis; 40-60% of children receive transplants within the first two years of an ESRD diagnosis.

- Nephrology nurses play a key role in providing dialysis and related care and treatment to individuals with CKD and ESRD.

- Since 1972, Medicare has reimbursed for care and treatment to all persons with a diagnosis of permanent kidney failure (ESRD) who were fully or currently insured or eligible for benefits under Social Security, and for the spouses or children of such persons.

- In 2010, Medicare spending for ESRD totaled nearly $28.4 billion. At the end of that year, more than 594,374 patients were being treated for ESRD, and nearly 116,946 new patients started ESRD treatment that year.

Source

For additional health policy resources from ANNA, including position statements, health policy agendas, resources and tools, and Kidney Disease Awareness and Education activities, go to www.annanurse.org (click on Advocacy tab).
Patients with diabetes have significant vascular or blood vessel disease, contributing to the development of heart disease and stroke, as well as blindness and lower extremity amputations. Diabetes was the seventh leading cause of death listed in 2007 for the U.S. population. Detection and treatment of early diabetic kidney disease has been shown to reduce the decline in kidney function by 30% to 70%, making screening and intervention earlier in the disease progression very important to the prognosis, outcomes, and costs.

The two most common types of diabetes are type 1 diabetes and type 2 diabetes.

**Type 1 Diabetes**
- The pancreas cannot produce insulin.
- Usually diagnosed during childhood.
- May account for 5% to 10% of all diagnosed cases of diabetes.

**Type 2 Diabetes**
- The pancreas produces insulin but the body’s cells cannot properly use it.
- Far more common than Type 1 and is often related to obesity.
- Increasing incidence of Type 2 in children and adolescents is occurring.
- May account for 90% to 95% of all diagnosed cases of diabetes.

It is thought that kidney failure strikes patients with type 1 and type 2 diabetes almost equally and the risk of kidney disease developing in patients with diabetes increases with time. Because there is no cure for kidney disease, controlling underlying causes and slowing the course of diseases, such as diabetes, becomes crucial. Controlling hypertension (high blood pressure) is extremely important, as is managing blood sugar, cholesterol levels, and weight.

Research into the causes and treatment of diabetes is also critical. In 2007, the estimated cost of the diabetes disease burden in the United States totaled $174 billion, with direct medical costs at $116 billion and indirect medical costs at $58 billion. Public policy initiatives targeted at early identification, controlling risk factors, and early intervention in people with diabetes can reduce the serious and devastating long-term effects of the disease on the population, and the significant economic burden on individuals, families, and society.

**Source**
Hypertension and Kidney Disease

• Hypertension is one of the most common problems that can severely harm the kidneys. Uncontrolled high blood pressure is not only the second leading cause of CKD in the United States, but also a symptom of the disease. Sixty-six percent of all patients with CKD are hypertensive.

• Severe hypertension causes kidney malfunction over a relatively short period, but even mild forms of hypertension can damage kidneys over several years, sometimes with no symptoms evident until there is serious damage.

• About 73 million Americans (3 in 10) have hypertension. Unfortunately, despite increasing prevalence of hypertension, one-third to half of patients are not aware they have it, and as few as 11% of patients may be receiving treatment for it.

• The American Society of Hypertension states “…hypertension can no longer be considered as a single disease entity. While hypertension is the most prevalent cause of stroke and kidney failure, hypertension must be recognized as part of a bigger disease conglomerate almost always accompanied by obesity, diabetes, kidney disease or many other co-existing problems involving lifestyle or genetics.”

• Certain individuals have a greater risk of developing the disease, such as older persons, people with a family history, people who are overweight, and some races. Among African Americans, hypertension is the leading cause of CKD. African Americans develop hypertension more often than Caucasians; they tend to develop it earlier and have more severe forms of the disease.

• Hypertension can affect anyone at any age. Even children have it, although it is less common in younger age groups. Uncontrolled hypertension increases the risk of heart attacks and stroke. When the disease is controlled, the threat of these complications is greatly reduced.

• Many effective medications are available for treating hypertension. Lifestyle changes, such as quitting smoking, dietary changes, weight loss, and regular exercise are key factors in regulating blood pressure.

• Public policy initiatives targeted at early identification, controlling risk factors, and early intervention in those with hypertension can reduce the serious long-term effects of this disease on the population, and the significant economic burden on individuals and society. Research into the causes and treatment of diabetes is also critical.

Sources


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Section IV

Anemia and Chronic Kidney Disease

Why Are Patients with Kidney Failure Anemic?

What is anemia? (We should explain what Anemia is) Anemia happens when your red blood cells are in short supply. Red blood cells carry oxygen from your lungs to all parts of your body, giving you the energy you need for your daily activities. Anemia can cause you to:

- Look pale
- Feel tired
- Have little energy for your daily activities
- Have a poor appetite
- Have trouble sleeping
- Have trouble thinking clearly
- Feel dizzy or have headaches
- Have a rapid heartbeat
- Feel short of breath
- Feel depressed or “down in the dumps”

Why do people with kidney disease get anemia?

Your kidneys make an important hormone called erythropoietin (EPO). Hormones are secretions that your body makes to help your body work and keep you healthy. EPO tells your body to make red blood cells. When you have kidney disease, your kidneys cannot make enough EPO. This causes your red blood cell count to drop and anemia to develop.

Are all people with kidney disease at risk for anemia?

Most people with kidney disease will develop anemia. Anemia can happen early in the course of kidney disease and grow worse as kidneys lose their ability to work well and make EPO. Anemia is especially common if you:

- Have diabetes
- Are African American
- Have moderate or severe loss of kidney function (stage 3 or 4)
- Have kidney failure (stage 5)
- Are female

How is anemia treated?

Your treatment will depend on the exact cause of your anemia. If your anemia is due to kidney disease, you will be treated with:

- Drugs called erythropoiesis stimulating agents (ESAs) ESAs help your body make red blood cells. ESAs will usually be given to you as an injection under the skin (called a subcutaneous injection) in your doctor’s office.
- Extra iron Your body also needs iron to make red blood cells—especially when you are receiving ESAs. Without enough iron, your ESA treatment will not work as well. Iron can be given to you as a pill, or administered directly into a vein in your doctor’s office or clinic.

Not having enough EPO (a hormone made by your kidneys) is the most common cause of anemia in patients with kidney disease. EPO tells your body to make red blood cells. When your kidneys no longer make enough EPO, treatment with an ESA can help.

How much ESA will I need?

Your doctor will prescribe enough ESA to increase your hemoglobin gradually to the recommended level. How much ESA you need and how often you receive, it depends on:

- Your current hemoglobin level
- How well you respond to treatment with ESA
- The type of ESA you receive There are different types of ESAs available—short-acting ESAs or long-lasting ESAs. You and your doctor will decide which type is best for you. Speak to your doctor if you are ever discharged from a hospital. Your doctor may want to modify your anemia treatment plan to maintain your target hemoglobin.

Source
National Kidney Foundation

For additional health policy resources from ANNA, including position statements, health policy agendas, resources and tools, and Kidney Disease Awareness and Education activities, go to www.annanurse.org (click on Advocacy tab).
Why Do Patients with Kidney Failure Develop Bone Disease?

Healthy kidneys produce an active form of vitamin D, which helps maintain stable blood and bone levels of calcium (CA) and phosphorous (PO4), and provide support for the autocrine system. Proper vitamin D levels along with the balance of CA and PO4 are necessary to maintain normal nerve and heart function, and a healthy skeleton.

When kidney function declines, this balance is disturbed. One serious result is the triggering of the parathyroid glands located in the front of the neck to produce parathyroid hormone (PTH). PTH leeches CA and PO4 from the bones, thus raising their levels in the blood. This leads to renal bone disease, or osteodystrophy, a calcification of other organs and tissues, which can lead to death. This overworking of the parathyroid gland leads to secondary hyperparathyroidism (SHPT), a form of hyperparathyroidism, with a chronically overactive gland secreting large amounts of hormone.

How SHPT is Treated – Vitamin D Analogues and Calcimimetics

Approximately 70% of patients with chronic kidney disease have high PTH levels. Critical to turning off this process and reducing the risks associated with vitamin D deficiency is treatment with an injectable form of vitamin D. A new class of drugs that reduces PTH levels rapidly and effectively, called vitamin D analogues, became available in the late 1990s. Another class of drug indicated for treatment of SHPT, Calcimimetics, became available in 2004. Calcimimetics are not included in the bundled composite rate. Sometimes though rarely, unsuccessful treatment results in the surgical removal of the parathyroid, a procedure known as a parathyroidectomy.

Vitamin D analogue therapy has been shown to reduce morbidity and mortality in patients undergoing dialysis. Payment for vitamin D analogues is now included in the bundled composite rate for dialysis therapy.

Because patients absorb phosphorus from food and cannot eliminate it, often phosphate binders are needed with each meal. They bind or absorb some of the phosphate in the food and eliminate it through the bowel.
Section VI

Current Modalities for Treating Chronic Kidney Disease

During the course of treatment for CKD, a patient may switch a number of times among different modalities of renal replacement therapy. At the end of 2008, the distribution of patients on treatment for CKD was in-center hemodialysis 64%; home hemodialysis less than 1%; peritoneal dialysis 5%; and transplant 30%. These modalities are described below.

**Hemodialysis** removes toxins and excess fluids by circulating the patient’s blood outside the body through an artificial kidney, or dialyzer. Treatments are most often scheduled three times weekly and last 3 to 4 hours. New variants that increase total hours of treatment are receiving more use, such as short daily or long nocturnal dialysis sessions. Access to the bloodstream is required. The treatment is performed predominantly in free-standing outpatient dialysis facilities. Hemodialysis may also be performed at home after the patient and an assistant, typically a spouse, undergo several weeks of training.

**Short daily home hemodialysis** is done 5 or 6 days of the week for 1.5 to 3.5 hours each day. Patients generally feel better overall than those on standard hemodialysis. They need fewer medications to control blood pressure, anemia, and bone disease, and are able to eat a less restricted diet. A trained helper or family member is required to be available to assist when necessary. This training generally takes several weeks.

**Peritoneal dialysis** (PD) uses a patient’s peritoneal membrane as an alternative source for dialysis, as opposed to the membrane in the artificial kidney. It requires placement of a catheter into the abdominal cavity, and repeated instillation of sterile dialysate, a dwell time, and drainage of dialysate, commonly known as an “exchange.” Several PD options are available. The most common is continuous ambulatory PD (CAPD), during which the patient performs 4 to 5 exchanges daily. Continuous cycling PD (CCPD) utilizes several exchanges administered by a programmed machine (cycler), typically every night, with one long dwell during the day. CAPD and CCPD can also be used in combination when needed. PD is the dialysis modality used most often on children.

**Nocturnal hemodialysis** is usually done for 6 -10 hours in-center, 3 to 6 nights per week while patients sleep. Or from 5 to 12 hours at home 5 to 7 nights a week. In some locations, dialysis professionals monitor the home treatment by telephone modem or the Internet. With nocturnal hemodialysis, patients seem to exhibit fewer adverse symptoms during treatment and experience better appetites, energy levels, and quality of life. There are also fewer dietary and fluid restrictions.

**Kidney transplantation** is a treatment rather than a cure for kidney failure. This is an elective procedure rather than an emergency or life-saving procedure. For medical reasons, not all patients are eligible for kidney transplants. Some conditions put patients at risk for severe complications. Unless medically contraindicated, a working kidney transplant is the treatment goal for all pediatric patients.
Kidney Transplant Antirejection Medications
Transplant patients must take antirejection medications every day during the life of the new kidney. These medications have side effects that may affect one’s quality of life but are needed to maintain the transplanted kidney. Antirejection medications are very expensive. Medicare pays part of the cost for 3 years following the transplant.

The Organ Procurement and Transplantation Network (OPTN) states there were 144,000 kidney transplant recipients taking these drugs at the end of 2007. According to the United States Renal Data System medicare payment for these drugs only lasts for 36 months after transplant. Cost for the drugs (USRDS) at the end of 2010, there were 174,361 patients with functioning transplants. Private insurance will cover these medications but often require a co-payment by the patient. Medicaid is available if the patient is eligible. Medicare costs for a transplanted patient approximately 19,000 per year compared to 77,500 per year for a pt on dialysis.

Transplant patients are followed closely by the transplant team and their local physician. They must have frequent lab work in the first year after the transplant, then monthly during the life of the transplanted kidney.

Sources


Health Resources and Services/Organ Procurement and Transplant Network. 2012

Vascular access is essential for hemodialysis. In order for all the blood to be properly cleaned during a treatment, blood needs to be rapidly transferred to and from the hemodialysis machine continuously. There are three types of vascular access.

**Arteriovenous Fistula** *(see Figure 1)*
Considered the “gold standard” of accesses, a fistula is created by using the patient’s own blood vessels; an artery is connected directly to a vein. The increased high-pressure blood flow makes the vein grow larger and stronger. This is the access of choice for all patients because it has fewest complications, such as infection and clotting; therefore, it lasts longer and there are fewer hospitalizations and deaths associated with it. However, not all patients have healthy enough blood vessels to successfully create a fistula.

**Tunneled Cuffed Catheter** *(see Figure 2)*
Catheters are flexible, hollow tubes that allow blood to flow in and out of the body. They are most commonly used as a temporary access to start dialysis or if the permanent access fails. Catheters should be avoided as much as possible because they are the leading cause of blood stream infection and have the highest rate of hospitalization and deaths in patients receiving dialysis.

**Arteriovenous Graft** *(see Figure 3)*
A graft connects an artery to a vein by using a synthetic or biologic tube. It does not need to develop as a fistula does, so it can be used sooner after placement. A graft is more likely to cause clotting or infection problems than a fistula but less than a catheter. Though it works well when new, it does not last as long as a fistula and needs more frequent repair to keep it working. In July of 2003, the National Vascular Access Improvement Initiative (NVAII) was established. The goal was to improve the number of fistulas in the hemodialysis patient population to 50% incident patients and 40% prevalent patients. This goal was achieved in August 2005, 10 months ahead of schedule.

In March 2005, CMS announced the launch of the Fistula First Initiative. Working with stakeholders across the ESRD industry, the goal was to obtain ‘Breakthrough’ improvements in safer vascular accesses, and the goal for prevalence was increased to 66%. While not yet meeting the goal, substantial progress has been made with this initiative, and in February of 2011, CMS announced a Fistula First rate of 57.8%.

**Source**
Peritoneal Dialysis Access
Peritoneal dialysis (PD) catheter insertion can be accomplished by any 1 of 3 techniques. These include dissective or surgical, the blind or modified Seldinger, and laparoscopic techniques. The dissective technique solely utilized by surgeons, places the catheter by mini-laparotomy under general anesthesia. In the blind or modified Seldinger technique a needle is inserted into the abdomen, a guide-wire placed, a tract dilated and the catheter is inserted through a split-sheath, all without visualization of the peritoneal cavity. Of the various laparoscopes, peritoneoscopic insertion uses a small optical peritoneoscope for direct inspection of the peritoneal cavity and identification of a suitable site for the intraperitoneal portion of the catheter. Hence, of the 3 techniques, only the latter allows for the direct visualization of the intraperitoneal structures. This technique can be easily used by nephrologists as well as surgeons. Peritoneoscopic placement varies from traditional laparoscopic techniques by using: a much smaller scope (2.2 mm diameter) and puncture size, only one peritoneal puncture site, a device to advance the cuff into the musculature, air in the peritoneum rather than CO2, and local anesthesia rather than general anesthesia. Prospective randomized and nonrandomized studies have shown that PD catheters peritoneoscopically placed by nephrologists have less incidence of complications (infection, exit site leak) and longer catheter survival rates than those inserted surgically. The current review focuses on the peritoneoscopic insertion of PD catheter and presents some of the complicating issues (bowel perforation, catheter migration, and prior abdominal surgery) related to this procedure.

Source
### A Typical Day in the Life of a Nephrology Nurse

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 a.m.</td>
<td>Open dialysis services, verify any patient or staff call-ins. Certify the processed water quality and pressures.</td>
</tr>
<tr>
<td>6:15 a.m.</td>
<td>Make staff assignments. Verify hospitalizations.</td>
</tr>
<tr>
<td>6:30 a.m.</td>
<td>Arrive patient in EMR. Start checking patients in for treatment: BP, weight, pulse, respirations, mental status, and access function. Assess patient for signs and symptoms of illness and consult with nephrologist.</td>
</tr>
<tr>
<td>6:45 a.m.</td>
<td>Start hemodialysis treatment for patient via an AV fistula. Administer anticoagulant via patient's access needles prior to treatment initiation.</td>
</tr>
<tr>
<td>7:00 a.m.</td>
<td>Start hemodialysis treatment for patient via buttonhole device. Initiate hemodialysis treatment for patients with catheters.</td>
</tr>
<tr>
<td>7:30 a.m.</td>
<td>Complete all patient assessments under the care of patient care technicians. Supervise the treatment plan for technicians and own patients. Participate in report for all patients. Alternate relief for staff breaks. Monitor vital signs on patients every 30 minutes. Verify all safety parameters with each monitor. Respond to patient needs and supervise meeting those needs throughout the treatment. Responsible for catheter site care and access management.</td>
</tr>
<tr>
<td>8:30 a.m.</td>
<td>Administer all medications for assigned sections. This may include blood transfusions and emergency medications or antibiotics. Contact physicians regarding problems. Cultures or lab work may need to be done on the basis of assessments and physician orders.</td>
</tr>
<tr>
<td>10:30 a.m.</td>
<td>Orient new patient care technician to take-off procedures. Take closing vital signs on first assigned patient. Initiate termination of treatment.</td>
</tr>
<tr>
<td>11:00 a.m.</td>
<td>Take off second patient after scheduling an appointment with the vascular surgeon for the previous patient. Respond to requests for assistance from patient technicians. Assess patient with complaints and consult with the nephrologist.</td>
</tr>
<tr>
<td>11:30 a.m.</td>
<td>Lunch break. Relieve other staff members for breaks.</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Assist starting second-shift patients. Complete patient assessments and troubleshooting prior to attending a patient care conference.</td>
</tr>
<tr>
<td>2:00 p.m.</td>
<td>Administer standard medications. Make physician phone calls. Obtain update on all hospitalized patients. Give report to appropriate staff members.</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>Make patient and staff schedule for the next day. Report all concerns through administrative chain. Complete all drug and inventory counts necessary. Complete all required medical and service records.</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td>Called Report to Nursing Home. Report directly to the relieving nurse for the remainder of the evening. Most adult outpatient dialysis units treat 3 shifts of patients/day and may be open from 5 a.m. to 11 p.m. six days a week.</td>
</tr>
</tbody>
</table>

### Schedule Options
- 8 Hour Day / 5 Days
- 10 Hour Day / 4 Days
- 12 Hour Day / 3 Days
- 13 Hour Day / 3 Days
- Full Time
- Part Time
- Per Diem
- Weekends Only
- Seasonal
- Acute Dialysis
- Chronic Dialysis
- Nocturnal Dialysis
- Peritoneal Dialysis
- Home Hemodialysis
- Apheresis
- Transplantation
Advanced practice registered nurses (APRNs) in nephrology include clinical nurse specialists (CNSs) and nurse practitioners (NPs). The APRN provides care for patients along the continuum of kidney disease and in all treatment modalities. CNSs and NPs perform their roles in both inpatient and outpatient settings, their role may include working as a clinician, consultant, educator, and researcher in all treatment modalities of CKD clinics, hemodialysis, peritoneal dialysis, and transplantation.

The CNP may function in the CKD office and as providers for insurance plans doing in home assessments, and participate in the patients medical home.

Each state defines the APRN scope of practice, the level of MD involvement in APRN practice and prescription authority, so there may be variations in the role and responsibilities across the country. Many, but not all, states require that an APRN have a written/legal collaborative agreement outlining aspects of their practice.

NPs and CNSs were initially authorized as Medicare providers in the balanced Budget Act of 1997 and became eligible for Medicare reimbursement at 85% of the physician fee schedule. Effective January 1, 2004, the Medicare capitation payments (MCP) for nephrologists were replaced with several G Codes based on the age of the patient, number of visits, and whether the patient receives dialysis care in center or at home. This rule states that NPs, CNSs, and physician’s assistants (PAs) can deliver some of the dialysis patient visits, and they will be counted as part of the 1 to 4 monthly physician visits to the patients.

The goals of the patient visit are to review patient’s lab work; assess the vascular access, anemia status, and adequacy of dialysis; review medications with patients; and evaluate patient’s nutritional and psychosocial status. The secondary goal is to coordinate the patients’ care with other providers, significant others, and ancillary personnel, such as laboratories and X-ray facilities, nursing homes, emergency rooms, home health and transportation providers, pharmacies, and durable medical equipment providers. During patient visits, the APRN evaluates the effectiveness of the current plan of care for the underlying renal disease, its sequelae, and other comorbidities. He or she also orders diagnostic tests and prescribes medications as permitted in their individual state. The plan is revised as necessary in a manner that avoids costly hospitalization and improves the patient’s medical status and overall quality of life. Additionally, it is not uncommon for these professionals to serve as the patient’s primary care provider, taking care of other health problems. In transplant and chronic kidney disease clinics, APRNs typically follow patients with all stages of CKD and kidney transplant by managing all medications, reviewing/evaluating all lab work, performing physical exams, and providing education/counseling for the patient and family. In dialysis facilities, APRNs can also manage dialysis prescriptions.

**NP Definition from Code of Federal Regulations**, Title 42, Vol. 2, pps. 273-274, revised October 1, 2002. To meet the qualifications for a nurse practitioner, an individual must: (1) be a registered professional nurse who is authorized by the State in which the services are furnished to practice as an NP in accordance with State law; (2) have a master’s degree in nursing; and (3) be certified as an NP by a recognized national certifying body that has established standards for nurse practitioners.

**CNS Definition from Code of Federal Regulations**, Title 42, Vol. 2, pps. 274-275, revised October 1, 2002. To meet the qualifications for a clinical nurse specialist, a CNS must: (1) be a registered professional nurse who is licensed in the State where he or she practices and be authorized to perform the services of a CNS in accordance with State law; (2) have a master’s degree in a defined clinical area of nursing; and (3) be certified as a clinical nurse specialist by the American Nurses Credentialing Center.

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Overview: Brief History of Medicare End-Stage Renal Disease (ESRD) Reimbursement

When Medicare was first established in 1965, it did not provide coverage for individuals with ESRD. At that time, kidney failure was a fatal disease, as treatment was not available outside of a limited number of clinical study centers. Once it was clear that dialysis could be performed as a chronic therapy, lack of insurance coverage became a barrier to treatment. This led to the passage of the Medicare ESRD program. The following provides a brief history of some of the major changes in reimbursement for the Medicare ESRD program since its enactment in 1972.

Social Security Amendments of 1972 (P.L. 92-603)

In October 1972, Congress passed the Social Security Amendments of 1972. Under this Act, Congress changed the Medicare law to extend coverage to individuals who were under 65 years of age, had ESRD, and had (or were the spouse or dependent of someone who) worked long enough to qualify for Social Security. Such coverage became effective July 1, 1973.

Medicare’s payment policy for outpatient dialysis from 1973 to 1983 limited reimbursement by a payment ceiling of $138 per treatment. Like other Medicare Part B benefits, Medicare pays 80 percent of the allowable rate.

ESRD Program Amendments of 1978 (P.L. 95-292)

The ESRD Program Amendments of 1978 included several new provisions for the ESRD Program to encourage home dialysis and eliminate some of the existing financial disincentives to transplantation. These changes provided for immediate Medicare entitlement (without a 3-month waiting period) for people who choose self-dialysis or transplantation as their initial ESRD treatment modality. The law also provided for the implementation of a prospective reimbursement method for dialysis payment and extended Medicare transplant benefits from 12 to 36 months post-transplant.

Omnibus Budget Reconciliation Act of 1981 (P.L. 97-35)

The ESRD provisions of the Omnibus Budget Reconciliation Act of 1981 again called for the establishment of a prospective payment system for outpatient dialysis to include a single rate to cover all supplies and services associated with a routine dialysis treatment. Other provisions modified rules to make Medicare the secondary payer to employer group health insurance for the first 12 months of Medicare entitlement.

Pursuant to this law, the prospective "composite rate" payment system was implemented. It established a per-treatment payment rate, adjusted for geographic wage differences. This averaged $123 per treatment, down from the prior $138 rate, with a slightly different rate for hospital-based programs. For the first time, home and in-center dialysis treatments were paid at a single base composite rate, which was intended to be an incentive to promote home dialysis.
Medicare Modernization Act (MMA) of 2003 (P.L. 108-173)

The MMA contained the most far-reaching changes to the ESRD program since its creation. There were no changes to reimbursement in 2004, but in 2005, the composite rate was increased by 1.5%. The MMA changed the way the Medicare program reimbursed facilities for the cost of separately billable dialysis-related drugs and biologics, basing payment on the Average Sales Price (ASP) plus 6%. To prevent a major reduction in reimbursement related to this change in drug payment, in 2005 Medicare began augmenting the composite rate payments with a drug spread “add-on”—the historical difference between Medicare payment and provider acquisition cost, which was to be adjusted annually beginning in 2006. MMA case-mix adjusted the composite rate for beneficiary age, body surface area, and low body mass index.

The MMA also called for a report by the Secretary of Health and Human Services on a fully bundled dialysis prospective payment system (PPS) to incorporate all the formerly separately billable items and services into the dialysis payment.

Medicare Improvements for Patients and Providers Act (MIPPA) 2008 (P.L. 110-275)

MIPPA required Medicare to establish a full PPS for ESRD services to include the composite rate components, plus injectable drugs and biologics and their oral equivalents, laboratory tests previously paid for separately, and renal-related oral medications. MIPPA also eliminated the differential payment between independent and hospital-based dialysis programs. The law called for an annual update to the PPS payment rate; this update was 1% for both 2009 and 2010. Beginning in 2012, the PPS base rate is to be increased annually by an ESRD market basket percentage increase factor, minus 1%.

The PPS “bundle” was implemented in 2011, reducing payment by 2% at the outset, in anticipation of efficiency gains by providers under the PPS system. The base rate was $229.63 before wage adjustment. Some adjusters were included at the patient level and the facility level as well as a home training add-on payment.

MIPPA also required ESRD providers to meet certain quality metrics, to be defined annually. This Quality Incentive Program (QIP) went into effect in 2012 and was the first pay-for-performance program in the history of Medicare. The purpose of the QIP was to incentivize providers to continue to provide high quality care and protect patients from potential cuts to quality of care, which might occur with the changes in the reimbursement system. Facilities which fail to meet the minimum scores on the defined metrics may lose as much as 2% of their total Medicare reimbursement for a payment year. The initial QIP included three clinical measures related to dialysis adequacy and anemia management. Clinical and reporting measures are published annually through notice and comment rulemaking for the following year.

The American Taxpayer Relief Act of 2012 (ATRA) (P.L. 112-240)

Under ATRA, Medicare is required to recalculate the dialysis bundled payment rate for 2014 to account for changes in use of drugs and biologicals as a result of the PPS. This law delayed inclusion of oral drugs into the ESRD PPS and required providers to report monitoring of bone and mineral metabolism to CMS.
## Section XII

### Chronic Kidney Disease Resources

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<td>• National Kidney/Urologic Disease Information Clearinghouse</td>
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<td>• National Association of Nephrology Technicians and Technologists</td>
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About ANNA

Mission Statement of the American Nephrology Nurses’ Association

The American Nephrology Nurse’s Association (ANNA) promotes excellence in and appreciation of Nephrology nursing so we can make a positive difference for people with kidney disease.

History
Established as a nonprofit organization in 1969, the American Nephrology Nurses’ Association (ANNA) has a membership of over 10,000 nephrology nurses. ANNA operates under a constitution and bylaws and serves its members nationally with over 100 local chapters. Registered nurses and other health care professionals with varying experience and expertise in such areas as hemodialysis, peritoneal dialysis, conservative management, continuous renal replacement therapies, chronic kidney disease, and renal transplantation comprise its membership.

Membership
- Number of Members: 9,540

Breakdown
- 86.78% RNs
- 1.08% LP/VNs
- 12.15% Other

Positions
- Head Nurse/Supervisor – 15.8%
- Staff/Clinical Nurse – 47.58%
- Administration – 8.15%
- Coordinator – 4.18%
- Education – 7.47%
- Other – 16.82%

Years in Nephrology
- Twenty Plus – 37.29%
- 10 - 19 Years – 32.8%
- 5 - 9 Years – 16.22%
- Less Than 5 Years – 13.69%

Chapters
Members may join one of ANNA’s 97 local chapters. Chapters circulate important news and views of their members to neighboring regions and the national office. Chapters also provide ANNA essential information to effectively plan the programming and influence the decision making of the association, and serve to enhance ANNA’s reputation by communicating and collaborating with other nephrology organizations through workshops and special programs. ANNA provides volunteers with leadership development at its Volunteer Leaders Workshop.

Clinical and Functional Special Interest Groups
Specialty Practice Networks (SPNs) are networks of members with expertise in nephrology nursing. SPNs are a vehicle for networking with other professionals for information, advice and support within the subspecialty. ANNA members can participate in one of five Clinical SPNs (Chronic Kidney Disease, Hemodialysis, Home Therapies, Pediatrics, and Transplantation) and one of two Functional SIGs (Administration and Advanced Practice).

Membership Services
- Educational programs – National, and local Programs
- Position papers
- Fact sheets
- Networking with nephrology nurses
- Nephrology Nursing Journal, bimonthly official refereed publication
- ANNA Update, bimonthly newsletter
- ANNA E-News, monthly association electronic news bulletin
- ANNA RenalWEB E-News, biweekly electronic news bulletin

www.annanurse.org