providing and receiving support in a group of people going through similar circumstances.
- Refer for mental health counseling as indicated or desired. Counseling can help the client develop effective coping and adaptation strategies.

Using NANDA, NIC, and NOC
Chart 27–4 shows links between NANDA nursing diagnoses, NIC (McCloskey & Bulechek, 2000), and NOC (Johnson et al., 2000) when caring for the client with end-stage renal disease.

Home Care
Chronic renal failure and ESRD are long-term processes that require client management. No matter what treatment option is chosen (hemodialysis, peritoneal dialysis, or renal transplantation), day-to-day management falls to the client and family. Teaching for home care includes the following topics.
- Nature of the kidney disease and renal failure, including expected progression and effects
- Monitoring weight, vital signs, and temperature
- Prescribed dietary and fluid restrictions (Involve the client, a dietitian, and the family member usually responsible for cooking. Include strategies to manage nausea and relieve thirst within allowed fluid limits.)
- How to assess and protect a fistula or shunt for hemodialysis (or the extremity to be used if one is anticipated)
- Peritoneal catheter care and the procedure for peritoneal dialysis as indicated (Include a family member or significant other, in case the client is unable to perform the procedure independently at some time.)
- Following kidney transplant, prescribed medications, adverse effects and their management, infection prevention, graft protection, and manifestations of organ rejection Refer to a dietitian for diet planning and counseling. If home hemodialysis is planned, refer the designated dialysis helper for formal training. Both the National Kidney Foundation and the American Association of Kidney Patients may be able to provide support and educational materials for the client with ESRD (see Box 27–8). Local and state chapters of these organizations can provide additional support.

Nursing Care Plan
A Client with End-Stage Renal Disease
Walter Cohen, 45 years old, is the print shop manager at a local community college. He has been a type 1 diabetic since the age of 20, and was diagnosed with diabetic nephropathy 10 years ago. Despite blood pressure control with antihypertensive medications and frequent blood glucose monitoring with insulin coverage, he developed overt proteinuria 5 years ago and has now progressed to end-stage renal disease. He enters the nephrology unit for temporary hemodialysis to relieve uremic symptoms. While there, a CAPD catheter will be inserted. Mr. Cohen’s desire to continue working is the primary factor in his choice of CAPD over hemodialysis.

ASSESSMENT
Richard Gonzalez, Mr. Cohen’s care manager, obtains a nursing assessment. Mr. Cohen states that his diabetes has always been difficult to control. He has had numerous hypoglycemic episodes and
has been hospitalized “four or five times” for ketoacidosis. Recently he has developed symptoms of peripheral neuropathy and increasing retinopathy. He attributed his lack of appetite, nausea, vomiting, and fatigue over the past month to “a touch of the flu.” His weight remained stable, so he did not worry about not eating much.

Physical assessment findings include T 97.8° F (36.5° C) PO, P 96, R 20, and BP 178/100. Skin cool and dry, with minor excoriations on forearms and lower legs. Breath odor fetid. Scattered fine rales noted in bilateral lung bases. Soft S3 gallop noted at cardiac apex. Bilateral pitting edema of lower extremities to just below the knees; fingers and hands also edematous. Abdominal assessment essentially normal, with hypoactive bowel sounds. Urinalysis shows a specific gravity of 1.011, gross proteinuria, and multiple cell casts. CBC results: RBC 2.9 mill/mm³; hemoglobin 9.4 g/dL; hematocrit 28%. Blood chemistry abnormalities include BUN 198 mg/dL; creatinine 18.5 mg/dL; sodium 125 mEq/L; potassium 5.7 mEq/L; calcium 7.1 mg/dL; phosphate 6.8 mg/dL. A temporary jugular venous catheter will be placed for hemodialysis the next day, followed by peritoneal catheter insertion later in the week.

**DIAGNOSIS**

Mr. Gonzalez identifies the following nursing diagnoses for Mr. Cohen.

- **Excess fluid volume** related to failure of kidneys to eliminate excess body fluid
- **Imbalanced nutrition: Less than body requirements** related to effects of uremia
- **Impaired skin integrity of lower extremities** related to dry skin and itching
- **Risk for infection** related to invasive catheters and impaired immune function

**EXPECTED OUTCOMES**

The expected outcomes of the plan of care are that Mr. Cohen will:

- Adhere to the prescribed fluid restriction of 750 mL per day.
- Demonstrate reduced extracellular fluid volume by weight loss, decreased peripheral edema, clear lung sounds, and normal heart sounds.
- Consume and retain 100% of prescribed diet, including snacks.
- Demonstrate healing of lower extremity skin lesions.
- Remain free of infection.
- Demonstrate appropriate peritoneal catheter care and CAPD.

**PLANNING AND IMPLEMENTATION**

The following nursing interventions are planned and implemented.

- Space fluids, allowing 400 mL from 0700 to 1500, 200 mL from 1500 to 2300, and 100 mL from 2300 to 0700.
  - Provide mouth care at least every 4 hours and before every meal.
  - Keep sugarless hard candy and ice chips at the bedside; include ice consumed as fluid intake.
  - Weigh daily before breakfast; monitor vital signs, and heart and lung sounds every 4 hours.
  - Document intake and output every 4 hours.
  - Arrange dietary consultation for menu planning.
  - Administer prescribed antiemetic 1 hour before meals.
  - Monitor food intake, noting percentage and types of food consumed.
  - Clean lesions on lower extremities every 8 hours and assess healing.
  - Teach CAPD procedure and peritoneal catheter care.
  - Assist to identify strengths and needs in health regimen management.

**EVALUATION**

Mr. Cohen was hospitalized for 2 weeks, undergoing four hemodialysis sessions to reduce uremic symptoms. An arteriovenous fistula has been created in his left arm in case he should need hemodialysis in the future. He begins peritoneal dialysis the second week, and by discharge he is able to manage the catheter care and dialysis runs with the help of his wife. His heart and lung sounds are normal, and he has minimal peripheral edema on discharge. The excoriations on his legs have healed. His temperature is normal, and no evidence of infection is noted. Mr. Cohen remains anorectic and slightly nauseated, but is eating most of his prescribed diet and snacks. He has lost 10 pounds with excess fluid removal by dialysis, but his weight remains stable during the second week. Mr. Cohen and his wife have been introduced to another client who has been on CAPD for several years and promises to help them with problem solving.

**Critical Thinking in the Nursing Process**

1. How does diabetes mellitus damage the kidneys and lead to ESRD? Why is this more significant for a client with type 1 diabetes than for someone with type 2 diabetes (see Chapter 18)?
2. Why do high levels of urea in the blood often cause changes in cognition and mental status? What manifestations of encephalopathy would you expect to see?
3. How might Mr. Cohen’s insulin dosage and diet need to be changed with the institution of peritoneal dialysis? Why?
4. Develop a care plan for the nursing diagnosis, Disturbed body image.

See Evaluating Your Response in Appendix C.