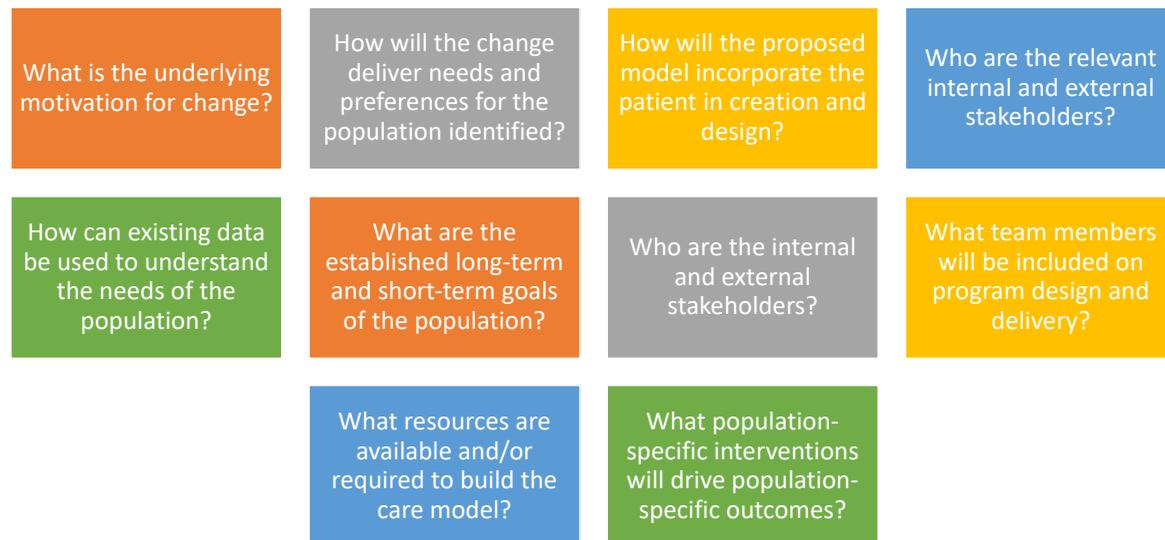


## Driving Change

Continued from page 23

**Figure 3. Fundamental questions for health care delivery design**



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## Nurse Practitioners in Nephrology: Understanding the Educational and Career Pathway to Specialty Practice

By Candice Halinski

Originally trained to provide holistic primary care, nurse practitioners (NPs) practice in a variety of acute and chronic care settings. The pathway to practice requires candidates to pursue multiple educational prerequisites and degrees (Figure 1). These rigorous demands are likely to increase in the coming years. Education and training begins with the completion of baseline prerequisites in addition to the attainment of a Bachelor of Science in Nursing (BSN) and active licensure as a registered nurse (RN) in the state of practice. State licensure requires that candidates successfully pass a board certification examination formally known as the National Council Licensure Examination.

State licensure as an RN typically permits entry into graduate-level degree programs for advanced practice nursing. Such programs build on the knowledge and experience gained as a BSN-prepared RN. Programs characteristically range from 12 to 24 months depending on full-time or part-time enrollment. The curriculum typically includes courses in pathology, pharmacology, leadership, research, and physical assessment, whereas primary objectives focus on clinical practice because NPs will provide direct patient care and medical management (1). The clinical rotation requirements vary in length (500–1000 hours) by educational institution, with an average range of over 500 precepted hours to meet minimum eligibility requirements for certification (2).

The completion of a Master's degree-level program results in attainment of a Master of Science in Nursing and eligibility to become licensed as an NP in the state of practice. Although licensure can be submitted, most states require the successful completion of a national certification examination before practicing. National board certification is an evidence-based means to validate the knowledge areas (Table 1) and experience gained throughout the educational process, as well as to assess the competency level for entry into practice (1). Board certification is renewed every 5 years by means of re-examination or continuing medical education of 100 contact hours of advanced continuing education (CE). There is a mandatory requirement of 25 CE credits of advanced practice pharmacology, as well as an accom-

panying requirement of at least 1000 clinical practice hours (3).

More than 69% of NPs practice in primary care settings. However, because of the increasing population of individuals with chronic kidney disease (CKD) and end stage kidney disease, entry into the nephrology specialty with minimal clinical nephrology experience may be permitted (1). Exposure to nephrology may begin within the NP program, where a designated number of preceptors facilitate practice hours in an area of interest. Graduate NPs may pursue direct entry into nephrology depending on organizational needs. Although no formalized nephrology-specific NP program exists, graduates of accredited programs with 2000-plus clinical practice hours can sit for additional board certification through the Nephrology Nursing Certification Commission. Passing the examination allows an NP to be recognized as a Certified Nephrology Nurse–Nurse Practitioner (4).

Given the increasing population of patients with CKD and kidney failure, coupled with reimbursement changes that permit NP coverage of patients on hemodialysis, NPs can enter practice in the chronic outpatient setting; however, additional opportunities exist in a multitude of settings (5). The role of the NP in nephrology is no longer exclusively dialysis rounding. It has evolved to include chronic and acute care in hospital settings, outpatient dialysis units, transplant centers, CKD clinics, research programs, care management, home care, palliative care, government settings, equipment and drug manufacturers, and leadership positions.

In light of increasing patient complexity, reimbursement changes, care-delivery redesign, and nephrologist shortages, NPs have become an integral part of the nephrology care team. Their expertise, educational preparation, and advocacy in the nephrology setting have contributed to a variety of positive outcomes for patients with CKD and kidney failure. This includes improvements in access to care, continuity of care, patient safety, and quality of care (6). Nephrology has allowed NPs across the nation to practice independently and collaboratively while maximizing their scope of practice that highlights their ability to provide exceptional health

care for millions of Americans. ■

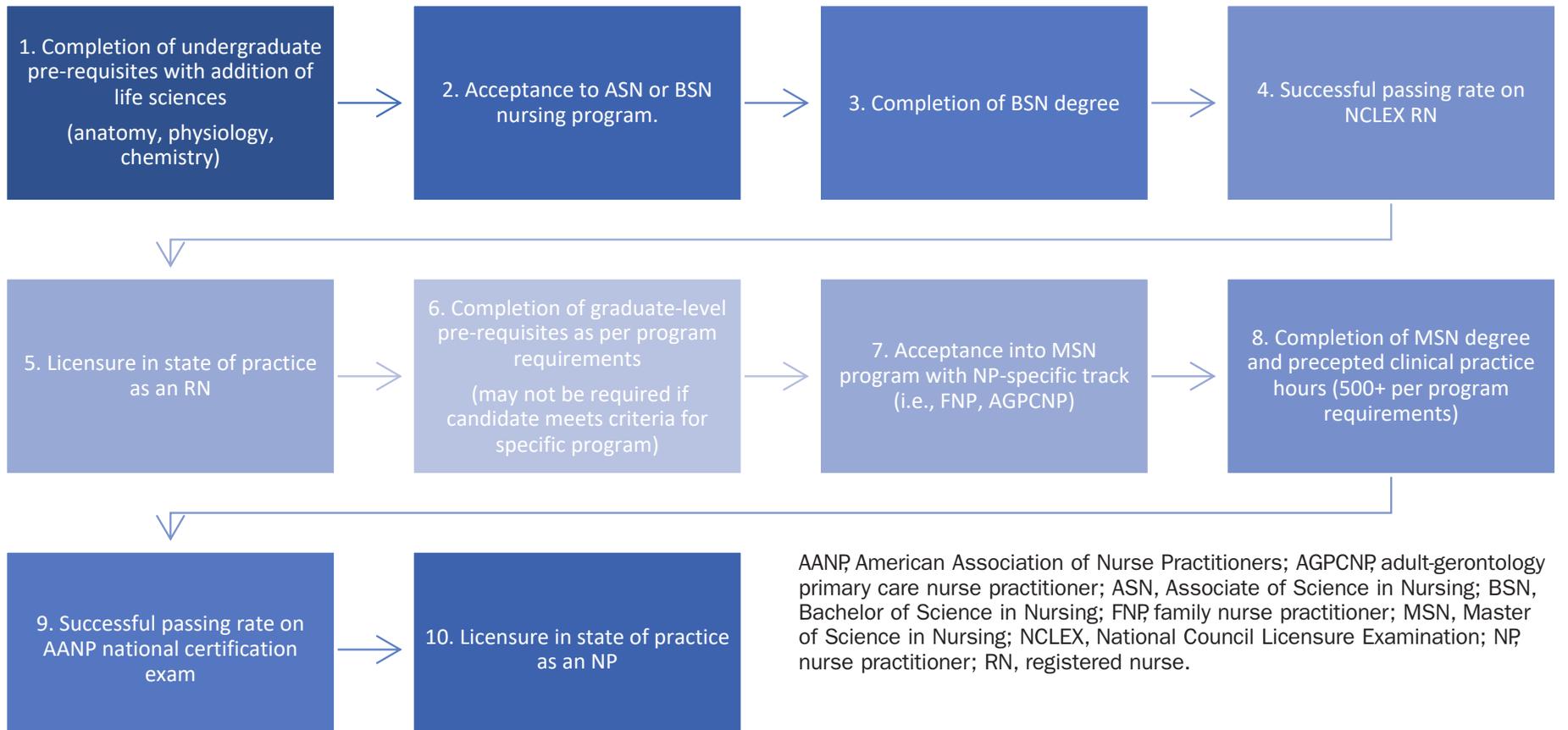
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The author reports no conflicts of interest.

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**Figure 1. Educational pathway to NP practice: A 10-step approach**



**Table 1. FNP and AGPCNP program knowledge domain requirement comparison**

Knowledge domain	Family nurse practitioner	Adult-gerontology primary care nurse practitioner
Anatomy	√	√
Physiology	√	√
Pathophysiology	√	√
Co-morbidities	√	√
Pharmacologic therapies	√	√
Non-pharmacologic, complementary, and alternative therapies	√	√
Integrative therapies	√	
Polypharmacy	√	√
Pain management	√	
Cultural competence/sensitivity	√	
Diagnostic and therapeutic tests	√	√
Functional assessment	√	
Health history	√	√
Mental health assessment	√	
Physical examination across the lifespan	√	
Signs and symptoms	√	√
Therapeutic communication	√	√
Clinical decision-making	√	√
Crisis management	√	√
Differential diagnosis	√	√
Health promotion, disease prevention, and anticipatory guidance		√
Adult physical examination	√	√
Biopsychosocial principles/theories		√
Patient, family, and caregiver education and counseling		√
Community resources		√
Evidence-informed practice		√
Legal and ethical issues		√
Ethno-cultural and spiritual competency		√
Principles of epidemiology		√
Health literacy		√
Principles of risk management		√
Palliative and end-of-life care		√
Pain management		√
Health care economics		√
Interprofessional practice		√
Information management		√
Settings of care		√

AGPCNP, adult-gerontology primary care nurse practitioner; FNP, family nurse practitioner.