

Workforce In Training

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In the “Frequently Asked Questions” section of Harvard Health, the question was posed, *“In the hospital recently, a ‘resident’ cared for me. Should I ask for a more experienced doctor?”*

The answer goes a long way to explaining why we must count those in-training (physicians, dentists, pharmacists, and others) as a key part of our healthcare workforce:

“Residents are doctors-in-training. They have graduated from medical school, been awarded an M.D. degree, and now are training to be a particular type of doctor – such as a pediatrician or pediatric specialist, or a type of surgeon. In their first year of such training, residents are sometimes called interns. All residents are supervised by a legally responsible senior physician. For over 40 years, I have been such a supervising physician. The residents typically have more time to spend with a patient than the supervising physician does. At major teaching hospitals, like those here at Harvard, the competition to be selected for a residency is fierce. Those chosen are extraordinarily intelligent and knowledgeable. I’ve seen many residents save many lives. In fact, a recent study found that the quality of care was better in teaching hospitals. In short, you generally are in very good hands with a resident. But if you are concerned about the way a resident is handling your care, you always have the right to speak to the supervising physician.”¹

Residents account for a large proportion of the active healthcare workforce in major teaching institutions like ChristianaCare, Nemours, and Bayhealth. These physicians, while still training in their chosen specialty, care for patients, order labs and tests, examine results, and create treatment plans for patients on a daily basis.

Physician Training

In order to become board-certified in a medical specialty, all physicians (M.D.s and D.O.s) must complete additional education after graduating from medical school. The first year of post graduate work (Post-Graduate Year 1, or PGY-1) is traditionally called internship (or first year of residency) and begins on July 1 every year. The recently graduated physician trains in a hospital setting with oversight by board certified attending physicians. Before beginning their second year of residency, physicians must have passed four national exams. Upon passing the final exam, they are eligible to apply for an independent medical license. In their second year (PGY-2) after medical school graduation, the resident physician is still supervised by an attending physician (someone who has completed residency training), and they take on

progressively more responsibilities in patient care. Depending on the specialty, residency programs can last from three to seven years. At the end of these residencies, all physicians will have taken three parts of the US Medical Licensing Examination (USMLE, parts 1-3), in order to obtain licensure to practice. In addition, many physicians take another set of examinations set by their particular specialty; upon passing, they are considered board-certified in that specialty area. Once their residency is complete, a physician may continue working in a hospital (inpatient) or clinic (outpatient) setting as an attending physician. Many types of employment models are available, such as being employed by a health system, or in a private practice.

Some physicians may choose to undergo further training known as a fellowship. Physicians in fellowship programs seek training in an area for which they wish additional specialization (and usually, certification). They are supervised by other licensed physicians in that specialty, participate in patient care, and assist in the training of residents. Delaware enjoys many residency and fellowship programs in the teaching hospitals throughout the state, with more opening every year (see Tables 1 and 2). United States residency and fellowship programs can be seen in Table 3. Delaware programs are highlighted in blue and underlined.

Table 1. Accredited Residency Programs Hosted by Delaware Healthcare Institutions

Bayhealth	https://bayhealthgme.org/graduate-medical-education/
Beebehealthcare.org	https://www.beebehealthcare.org/medical-education/graduate/family-medicine-residency
ChristianaCare	https://residency.christianacare.org/
Nemours	https://www.nemours.org/education/gme.html
St. Francis	https://www.trinityhealthma.org/healthcare-professionals/gme/
Delaware Psychiatric Center	https://dhss.delaware.gov/dhss/dsamh/residency/

Table 2. Delaware Institutions Who Have OR Host Residents In Their Facilities

090007	ABC Pediatrics
238081	Armed Forces Medical Examiner System
098081	Armed Forces Medical Examiner System
090002	Bayhealth Hospital – Sussex Campus
090248	Bayhealth Medical Center
090009	Beebe Healthcare
098082	Beebe Medical Center
090019	Brandywine Counseling and Community Services Inc
098020	Christiana Care Center for Urogynecology and Pelvic Surgery
090247	Christiana Care Health Services Inc
098085	Christiana Hospital
090004	CNMRI - Milford Office
098004	Community Mental Health Clinic - Dover
098005	Community Mental Health Clinic - Wilmington
090297	Delaware Division of Substance Abuse and Mental Health
090005	Delaware Eye Care Center
090022	Delaware Hospice
090021	DSAMH Bridge Clinic New Castle
098017	Fresenius Brandywine Home Therapies

098014	Fresenius Medical Care (Wilmington)
090008	Infusion Solutions of Delaware LLD - Dover Office
098086	Kent Sussex Counseling Services
090006	Kids and Teens Pediatrics
098009	Mid Atlantic Pain Institute PA
098010	Milton & Hattie Kutz Home Inc
098022	Morgan Kalman Clinic
090340	Nemours Children's Health Wilmington
098013	Nephrology Associates PA
090018	Norman Broudy MD & Associates
098007	Office of the Chief Medical Examiner (OCME)
098083	Planned Parenthood of Delaware Inc
090011	Psychiatry & Neurology
090015	Psychiatry Delaware LLC
090010	RI International - Restart Newark
098012	Rockford Center
098021	Roxana Cannon Arshat Surgicenter
090024	Seasons Hospice and Palliative Care Facility
090014	Serene Minds LLC
098006	Silver Lake Treatment Consortium
090709	St Francis Hospital
098003	Terry Children's Psychiatric Center
098087	Thresholds Inc
090013	TidalHealth Nanticoke
098016	University of Delaware - Student Health Center
098002	Veterans Affairs Medical Center (Elsmere)
090462	Veterans Affairs Medical Center (Wilmington)
098011	West Side Health

Table 3. National and Delaware Fellowship Programs²

Fellowship Type	Number of Programs Nationally	Delaware Programs
Abdominal Radiology (DR)	14	0
Addiction Psychiatry (P)	57	0
Adolescent Medicine (PD)	32	0
Adult Cardiothoracic Anesthesiology	71	0
Adult Reconstructive Orthopaedics (ORS)	28	0
Advanced Heart Failure and Transplant Cardiology	81	1
Blood banking-transfusion medicine (PTH)	51	0
Cardiovascular Disease (IM)	267	1
Chemical Pathology (PTH)	5	0
Child abuse pediatrics (PD)	31	0
Child and Adolescent Psychiatry (P)	143	0
Child Neurology (N)	77	1

Clinical Cardiac Electrophysiology (IM)	116	0
Clinical Informatics (PD)	1	0
Clinical Neurophysiology (N)	91	0
Complex Surgical Oncology (GS)	30	0
Congenital cardiac surgery (TS)	14	0
Craniofacial Surgery (PS)	9	0
Critical Care Medicine (AN)	64	0
Critical Care Medicine (IM)	49	0
Dermatopathology (D and PTH)	57	0
Developmental-Behavioral Pediatrics (PD)	44	0
Endocrinology, Diabetes, and Metabolism (IM)	155	0
Endovascular Surgical Neuroradiology (DR)	4	0
Endovascular Surgical Neuroradiology (N)	2	0
Endovascular surgical neuroradiology (NS)	2	0
Foot and Ankle Orthopaedics (ORS)	8	0
Forensic Pathology (PTH)	48	0
Forensic Psychiatry (P)	50	0
Gastroenterology (IM)	219	0
Geriatric Medicine (FM)	51	0
Geriatric Medicine (IM)	114	0
Geriatric Psychiatry (P)	63	0
Hand Surgery (GS)	1	0
Hand Surgery (ORS)	74	0
Hand Surgery (PS)	16	0
Hematology (IM)	2	0
Hematology (PTH)	87	0
Hematology and Oncology (IM)	174	0
Infectious Disease (IM)	158	0
Interventional Cardiology (IM)	183	1
Medical Microbiology (PTH)	15	0
Medical Toxicology (EM)	27	0
Medical Toxicology (GPM)	2	0
Molecular Genetic Pathology (MG and PTH)	42	0
Musculoskeletal Oncology (ORS)	12	0
Musculoskeletal Radiology (DR)	18	0
Neonatal-Perinatal Medicine (PD)	102	0
Nephrology (IM)	152	0
Neurodevelopmental Disabilities (N)	8	0
Neuromuscular Medicine (N)	1	0
Neuropathology (PTH)	36	0
Neuroradiology (DR)	89	0
Neurotology (OTO)	24	0
Nuclear Radiology (DR)	18	0
Obstetric Anesthesiology (AN)	38	0
Oncology (IM)	7	0

Orthopaedic Sports Medicine (ORS)	96	0
Orthopaedic Surgery of the Spine (ORS)	16	0
Orthopaedic Trauma (ORS)	12	0
Pain Medicine (AN)	1	0
Pediatric Anesthesiology (AN)	63	1
Pediatric Cardiology (PD)	62	1
Pediatric Critical Care Medicine (PD)	74	1
Pediatric Emergency Medicine (EM)	29	0
Pediatric Emergency Medicine (PD)	59	1
Pediatric Endocrinology (PD)	73	0
Pediatric Gastroenterology (PD)	65	1
Pediatric Hematology Oncology (PD)	74	1
Pediatric Infectious Diseases (PD)	65	0
Pediatric Nephrology (PD)	47	0
Pediatric Orthopaedics (ORS)	25	1
Pediatric Otolaryngology (OTO)	31	1
Pediatric Pathology (PTH)	29	0
Pediatric Pulmonology (PD)	56	1
Pediatric Radiology (DR)	47	1
Pediatric Rehabilitation (PM)	22	0
Pediatric Rheumatology (PD)	35	1
Pediatric Sports Medicine (PD)	17	0
Pediatric Surgery (GS)	54	0
Pediatric Urology (U)	26	0
Procedural Dermatology (D)	1	0
Psychosomatic Medicine (P)	64	0
Pulmonary Disease (IM)	24	0
Pulmonary Disease and Critical Care Medicine (IM)	193	0
Rheumatology (IM)	125	0
Selective Pathology (PTH)	99	0
Spinal Cord Injury Medicine (PM)	24	0
Sports Medicine (EM)	9	0
Sports Medicine (FM)	154	1
Sports medicine (PM)	21	0
Surgical Critical Care (GS)	142	1
Transplant hepatology (IM)	60	0
Undersea and Hyperbaric Medicine (EM)	8	0
Undersea and Hyperbaric Medicine (GPM)	2	0
Vascular and Interventional Radiology (DR)	90	1
Vascular Neurology (N)	106	0
Vascular Surgery (GS)	117	0

Nurse Training

There are many levels of nurse certification, and nurses with these certifications can be seen at all levels and departments in healthcare institutions throughout Delaware. These levels follow a model of academic progression, based on bridge or ladder programs (called stacking) where one degree or certification provides the prerequisite for the next level. There are generally three categories of nursing education related to licensure and scope of practice, although there are variations in the names of the equivalent levels of nursing throughout the country.

Unlicensed Assistive Personnel/Pre-Licensure

A certified nursing assistant (CNA) has completed a 4-12 week program and received a certificate of their training. They are eligible to sit for a national certification test.

Entry to Nursing Practice/Licensure

Licensed Practical or Vocational Nurses (LPN or LVN) have completed a one-year, non-degree program. They are eligible to sit for a national LPN licensure which will allow them to obtain licensure in all fifty U.S. states and U.S. territories. LPNs and LVNs who wish to progress academically in nursing can complete an LPN-RN program, most of which will terminate in an Associate Degree in Nursing. Some U.S. colleges offer LPN to Bachelors of Science in Nursing programs.

Registered nurses (RN) have completed a 2-year, non-academic degree program. They have received a diploma in nursing and are eligible to sit for a national RN licensure which will allow them to be licensed in all 50 US states and territories and obtain specialty nursing certifications.

Individuals with an associate degree in nursing (ADN) have completed 2-3 years of training before obtaining their degree. RNs and ADNs can complete RN-BSN academic programs, and typically take 1-2 years to complete. Nurses with a Bachelors of Science in Nursing (BSN) have completed a 4-year academic degree. ADNs, RNs, and BSNs are also eligible to sit for the national RN exam.

Graduate and Advanced Nursing Practice

Nurses with a Master of Science in Nursing have completed a 2-4 year degree program. Their specialty is further defined by the attainment of an Advanced Practice Registered Nurse (APRN) certification and the potential for licensure.

An APRN has completed a 2-4 year program, and may be a certified nurse practitioner (CNP), a certified nurse midwife (CNM), a clinical nurse specialist (CNS), and/or a certified registered nurse anesthetist (CRNA).

Non-APRNs with a MSN degree may have a selection of focus areas including nurse leaders, nurse educators, public health nurses, and clinical nurse leaders.

Post-Masters certifications are available, and nurses may obtain licensure for specialties within the field. They may also go on to obtain a doctorate of nursing practice or doctor of philosophy in nursing (DNP/PhD), which typically take from 6-8 years.

Physician, Heal Thy Community

Research shows that medical students who grow up in small communities far from urban centers are more likely to return to them to practice.² For this reason, many communities are working to place physicians and training programs in rural communities and communities which may not have a large healthcare workforce. Training in these areas provide hands-on experience in scope of practice and primary care in communities with few specialists with whom to consult.

Local training programs and schools allow young people who are seeking a career in the health sciences to see and interact with experts working within their community. They allow for newly graduated physicians and providers in training to return to the communities of their youth and bring with them a wealth of knowledge of medicine and healthcare, and apply that medicine to their knowledge of their community.

These also allow an influx of health care providers and specialists in communities which might not otherwise have these options close by. They allow new physicians to learn about continuity of care and work closely within the community. They also learn about the specific needs of underserved communities and the roles of medical providers working with these groups, and can lead to employment within these communities and the eventual increase in physicians working within these communities.

References

1. Harvard Health Publishing. (2017, Aug 1). Should I see a “resident” doctor? Retrieved from: <https://www.health.harvard.edu/healthcare/should-i-see-a-resident-doctor>
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