To: The Legislature of the State of Vermont

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I am writing in support of legislation that would grant health care provider status to pharmacists. Pharmacists are integral members of the health care system and their education is designed to prepare them for this role. I will review some details of their education and contemporary pharmacy practice to support the legislative recognition of pharmacists as healthcare providers.

The Doctor of Pharmacy, the entry level degree which all graduating pharmacists must have to practice pharmacy, is accredited by the Accreditation Council for Pharmacy Education (ACPE). ACPE accredits every Doctor of Pharmacy program in the country and applies the same standards to each. The accreditation standards are designed to ensure that programs prepare pharmacists to "apply the foundational sciences to the provision of patient-centered care"(1), clearly implying that pharmacists are educated as healthcare providers. To accomplish this, pharmacists have a very broad education which not only covers medications and disease, but also patient assessment, genetics, healthcare systems, communication and health information retrieval and evaluation (see below for a more complete list). Additionally, their studies go beyond the mechanisms of drug action and disease to include the actual impact of drugs on disease morbidity and mortality. More importantly, they develop the interpersonal communication skills that enable them to apply this knowledge to each and every unique patient they encounter. Coursework is in four broad areas as follows:

Biomedical Sciences

- Biochemistry
- Biostatistics
- Human Anatomy
- Human Physiology
- Immunology
- Medical Microbiology
- Pathology/Patho-physiology

Pharmaceutical Sciences

- Clinical Chemistry
- Extemporaneous Compounding
- Medicinal Chemistry
- Pharmaceutical Calculations
- Pharmaceutics/ Biopharmaceutics
- Pharmacogenomics
- Pharmacokinetics
- Pharmacology
- Toxicology

Social/Administrative Sciences

- Cultural Awareness
- Ethics
- Healthcare Systems
- History of Pharmacy
- Pharmacoeconomics
- Pharmaco-epidemiology
- Pharmacy Law and Regulatory Affairs
- Practice Management
- Professional communication
- Professional Development/Social and Behavioral Aspects of Practice
- Research Design

Clinical Sciences

- Clinical Pharmacokinetics
- Health Informatics
- Health Information Retrieval and Evaluation
- Medication Dispensing, Distribution and Administration
- Natural Products
- Patient Assessment
- Patient Safety
- Pharmacotherapy
- Public Health
- Self-care Pharmacotherapy

The ACPE standards require the equivalent of 4 years of academic preparation with three years of classroom experience coupled with a minimum of 1,740 hours of practice experience. This practice experience is mandated to take place in a variety of settings, not only community pharmacies, but also in hospital pharmacies, with healthcare teams taking care of patients in hospitals and in ambulatory care settings such as physician offices and health system clinics, always under the direct supervision of a qualified pharmacist preceptor. The education of a pharmacist is much more than four years; applicants to the Doctor of Pharmacy Program must also complete a considerable amount of prerequisite coursework, which is determined by each program individually, but averages about 70 semester hours - two very intense years of college. It is not uncommon for pharmacy students to have obtained a bachelor's degree prior to entry to pharmacy school.

After graduation and before practice, pharmacists must pass a national, comprehensive licensing exam, the North American Pharmacy Licensing Examination. This exam is designed to assess if the graduate:

- Can identify practice standards for safe and effective pharmacotherapy and optimize therapeutic outcomes in patients
- Can identify and determine safe and accurate methods to prepare and dispense medications
- Can provide and apply health care information to promote optimal health care(2)

Thus, to qualify for licensure, pharmacists must pass an examination that assesses essential components of the provision of healthcare.

Following graduation and successful licensure, pharmacists are able to apply their knowledge. They have learned not only which drugs will lower blood pressure, but which drugs will reduce the patient's risk of heart disease and other complications as they lower blood pressure. Blood pressure is presented here as an example, but pharmacists have similar knowledge about many common diseases. More importantly, graduates have developed the skills to facilitate a patient's ability to be adherent with complex regimens in order to achieve these goals. In addition, they are able to assess whether a regimen is achieving goals and can recommend next steps if goals are not achieved.

As a result of this training, pharmacists currently practice in primary care settings managing the chronic diseases of patients in the Veterans Health Administration as well as in the Indian Health Service. Pharmacists' care in the VA Health System is best known for their care of patients requiring anticoagulant therapy, but they also manage patients' hypertension, cholesterol, and diabetes to name a few. Washington State was recently in the news for their decision to allow pharmacists to dispense oral contraceptives. Pharmacists' role in immunizations is perhaps the most obvious evidence of their role as healthcare providers. In many hospitals and health systems, pharmacists practice under protocols to manage antibiotics, parenteral nutrition and anticoagulant therapy. Many states allow pharmacists to enter collaborative practice agreements with physicians which allow pharmacists to manage drug therapy through written protocols, allowing these pharmacists to practice at the top of their license and use their education to improve healthcare.

Perhaps the most dramatic demonstration of pharmacists' roles as healthcare providers came from the Asheville Project (theashevilleproject.net). The City of Asheville, NC, was self-insured and experiencing high healthcare costs due to poorly controlled diseases. In a combined effort between the City, a local health system and the community pharmacists of the city, pharmacists improved the control of diabetes, asthma, hypertension and cholesterol. While there were many components to the project, the ready access to pharmacists who practiced collaboratively with other members of the healthcare system

was critical to the control of chronic disease in these patients. This program began in 1997, demonstrating that pharmacists have been healthcare providers for nearly two decades.

In 2015, Amanda Kennedy, a pharmacist affiliated with the University of Vermont College of Medicine, and Dr. Harry Chen, Vermont Commissioner of Health, published a study documenting the value of pharmacists working within primary care practices. Five pharmacists, practicing one day a week in five different primary care practices in Vermont, prevented adverse events and improved patient outcomes, providing published evidence that Vermont pharmacists are healthcare providers.(3)

In conclusion, pharmacists receive education and training that qualifies them to be healthcare providers. To practice, they must pass an examination that requires them to demonstrate they can identify standards to optimize patient healthcare outcomes and provide health information to patients. There are numerous examples of pharmacists practicing in these roles throughout the country and throughout the state. Through counseling, medication therapy management and immunizations, pharmacists are healthcare providers. They deserve the legal recognition and status of being recognized as healthcare providers.

1. Accreditation Council for Pharmacy Education. ACCREDITATION STANDARDS AND KEY ELEMENTS FOR THE PROFESSIONAL PROGRAM IN PHARMACY LEADING TO THE DOCTOR OF PHARMACY DEGREE ("STANDARDS 2016") Chicago, Illinois. 2015
2. http://www.nabp.net/programs/examination/naplex accessed on January 16, 2016.
3. Kennedy AG, Chen H, Corriveau M, etal. Improving population management through pharmacist-primary care integration: a pilot study. Popul Health Manag. 2015 Feb;18(1):23-9