LETTERS

Responses to "Is it Time to Start Teaching Basic Diagnostics?"

To the Editor. We read the viewpoint article by Romanelli and Jones with considerable interest and wholeheartedly applaud and endorse their perspective.[1] However, we find it ironic that it took 3 to 4 decades for it to resurface on the pharmacy profession "radar screen." Forty years ago pharmacists in the Indian Health Service (IHS) demonstrated that pharmacists could be taught differential diagnosis and effectively function as primary care providers.[2,3] The goal of the program was to use pharmacists to diagnose and treat high volume, acute, ambulatory illnesses and selected, common, chronic diseases requiring medication as the primary treatment.

A subsequent development from this grant-funded pilot program was the IHS Pharmacist Practitioner Training Program (PPTP), based at the Phoenix Indian Medical Center.[4] The IHS PPTP ultimately trained over 60 pharmacists. It used a curriculum very similar to that advocated by Romanelli and Jones.[1] The pharmacist graduates of this program practiced at their home service units in a primary care role, under individualized standing orders and proficiency certification task lists. The training program and associated expanded pharmacist roles in the IHS have been described in several publications.[4-7] The skills taught in the PPTP are those needed currently to effectively provide high-quality self-care advisor services in community practice, as well as those needed to provide disease management services in ambulatory care.

Based on the success of the grant and the training program, Allen J. Brands, Chief Pharmacist of the Indian Health Service at the time, tried to advocate for similar expanded roles to national pharmacy associations and pharmacy educators for almost a decade.[3] Unfortunately, these concepts were overwhelmingly rejected, ironically, by the very people who should have accepted, supported, and implemented them. Brands offered the completely developed and refined PPTP training manual and IHS pharmacist practitioners to train faculty members and assist in course design at no charge. Unfortunately, these generous offers were also rejected, many times with inappropriate animosity towards Brands.

While the authors are correct, current doctor of pharmacy programs do *expose* students to diagnosis, in most cases critical material is not taught with methods that have been shown to be effective for training of physicians, nurse practitioners, and physician assistants. Therefore, current pharmacy students have incomplete preparation for a primary care role. Experts in medical education have advocated that by using just history-taking skills and usually only the observation/inspection portion of physical examination in conjunction with appropriate symptom-based diagnostic schemata, a correct diagnosis can be made in more than 90% of cases.[8] More detailed physical assessment, laboratory studies, imaging, and other diagnostic procedures often only confirm the diagnosis.

There are several missing pieces in most college of pharmacy curricula, relative to the teaching of diagnostic skills. The 2 most important deficiencies are optimal history-taking skills and diagnostic schemata for pattern recognition. Next, many colleges lack the necessary physical facilities, including properly equipped examination rooms. Also, as was the case 40 years ago, there is a paucity of pharmacist faculty members who have the training and experience to teach appropriate physical assessment and differential diagnosis. Using nonpharmacists to teach these skills has met with limited success, primarily because they do not understand how pharmacists would use these skills. Dual-degree faculty members like Jones could be a potential solution. In addition, the absence of a textbook directed at pharmacists' needs for basic differential diagnosis skills will impede implementation. Finally, there are limited sites available for primary care clerkships, where pharmacists diagnose and prescribe. Realization and implementation of these concepts will require a philosophical shift within academia.

Many schools focus on teaching pharmacists to advise or recommend therapy to other healthcare providers regarding medication. However, this is often done only as a part of therapeutics course work. Often it is done in a relative vacuum, without providing instruction on several critically necessary skills, especially, optimal history taking, appropriate approach to the patient, and differential schemata. Mastery of these skills would make the students both more confident and more competent to establish a likely diagnosis and recommend appropriate referral and/or management.

While there are few reports about teaching differential diagnosis, since 1997 the University of Arizona College of Pharmacy has taught an 80-hour required course in differential diagnosis called Patient Assessment. Since 1999, a similar 80-hour required course in differential diagnosis and physical assessment has been taught at Oregon State University, College of Pharmacy. Both courses were designed by the authors, who are graduates of the IHS PPTP. The courses are roughly modeled after the IHS PPTP and more than meet the criteria established by Romanelli and Jones. Descriptions of the course, specific course segments, plus the teaching methodology used have all been freely shared throughout the profession in the form

of presentations at numerous professional meetings. These materials have also been shared with dozens of colleges of pharmacy. Unfortunately, the response from academia has generally been lukewarm, many times with the cited reasons the same as those listed previously as deficiencies.

Finally, the authors were concerned about opposition from other health professions as a barrier to overcome in the implementation process. Unfortunately, based on previous experience, the biggest barrier may be from within the profession of pharmacy itself, including academia. We applaud the authors and sincerely hope that the profession does not wait another 40 years to consider evaluation and implementation of this important topic.

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REFERENCES

1. Romanelli F, Jones M. Is it time to start teaching basic diagnostics? *Am J Pharm Educ*. 2013;77(10):Article 207.
2. Short JC, Fairbanks LL, Kehoe WH, Apgar DA, Ewing DC. The pharmacist as a provider of primary care-Indian Health Service, Vol. 1 and Vol. 2: National Center for Health Services Research and Development 1975. (Contract Number HSM 110-HSRD, USPHS, April 1, 1973 to March 31, 1975).
3. Brands AJ. Innovative pharmacy services in the Indian Health Service. *Hosp Formul*. 1975;10(8):402-406.
4. Copeland GP, Apgar DA. Pharmacist practitioner training program. *Drug Intell Clin Pharm.* 1980;14(2):114-119.
5. Church RM. Pharmacy practice in the Indian Health Service. *Am J Hosp Pharm.* 1987;44(4):771-775.
6. Church RM. Expanded role of pharmacists in the Public Health Service: overview of a pharmacy practice model. *Hosp Formul*. 1989;24(9):526-7,530,532.
7. Herrier RN, Boyce RW, Apgar DA. Pharmacist-managed patient care services and prescriptive authority in the U.S. Health Service. *Hosp Formul*. 1990;25(1):67-68,76-78,80.
8. Peterson MC, Holbrook JH, Hales D, Smith NL, Staker LV. Contributions of the history, physical examination and laboratory investigation in making medical diagnoses. *West J Med.* 1992;156 (2):163-165.

To the Editor. We would like to respond to the question asked by Drs. Romanelli and Jones: Is it Time to Start Teaching Basic Diagnostics?[1] We agree that pharmacists graduating from modern doctor of pharmacy degree programs possess a minimum level of diagnostic skills. Pharmacy students typically receive a superficial introduction in physical assessment. While pharmacy students appear to be able to process data from a reported physical assessment, a process that is easily taught in a large class format, many students lack the confidence and competence to independently collect these data. The unfortunate reality is that most professional curricula lack the depth and repetition to enable students to function at an acceptable level with respect to gathering vital signs and conducting a physical assessment. Perhaps more disappointing is that most curricula only provide students with a cursory exposure to point-of-care and rapid diagnostic devices that can be employed by a pharmacist. In fact, rarely does their education extend beyond testing blood sugars, lipids, or Hgb A1C. In an era of interprofessional team-based care or collaborative practice, however, do these deficiencies validate the need to teach "diagnostics"?

We believe academic pharmacy must recognize the 2 words "diagnose" and "prescribe" are politically charged. In an era when interprofessional team-based care and collaboration are emerging practice norms, describing the contribution of the pharmacist to this practice paradigm, using the words "diagnose" and "prescribe" is counterproductive. Moreover, these words have the potential to derail unique opportunities for pharmacy to engage in this emerging health care practice model.

Rather than debating the need for increased emphasis on diagnostic training in the professional curriculum, we believe the academy would be better served promoting and embracing the Core Competencies for Interprofessional Collaborative Practice, in particular Competency Domain 2: Roles/Responsibilities.[2] This document was produced by an expert panel sponsored by the Interprofessional Education Collaborative, which was a collaboration among professional organizations from all health disciplines, including the American Association of Colleges of Pharmacy. In an interprofessional, team-based, or collaborative model, academicians and practitioners alike must understand that every time the "hot button" terms "diagnose" or "prescribe" are used, a collaborative partnership becomes more difficult for a pharmacist. If a pharmacist desires to practice at the highest level afforded them, they need not be able to diagnose and prescribe. Rather, the pharmacist should be able to establish professional relationships and develop disease state management guidelines/protocols that outline what types of information pharmacists will collect and how they will act upon this information. This includes developing critical thresholds for vital and laboratory values to ensure patient safety and treatment algorithms that allow the pharmacist to dispense medications when needed. These elements are virtually absent from pharmacy curricula.

Diagnosticians are often pressured by peers, professional associations, and diagnosticians from other specialties to believe that pharmacists are not qualified to do much more than dispense medications. One need only look at the inflammatory "Don't Call Us, We'll Call You" blog[3] about pharmacists' efforts to ensure appropriate use of opiates to see that there is tension. Academia cannot add to these tensions by carelessly using verbiage that can harm potential relationships. We need to stop trying to convince other professions that we can diagnose and therefore should be able to prescribe. Academicians need to focus their efforts on developing clinicians who can collect, interpret, and act upon patient information collected in a pharmacy. Students need to understand that they are still part of a medical team even if they are in a community pharmacy. They need to learn how to market their value to other professions not become entangled in turf battles. Students need learn a few talking points that can be shared with potential collaborators.

1. Pharmacists see patients more than any other healthcare professional. This gives us unsurpassed access to patients when they are acutely ill and healthy.
2. Pharmacists are competent and confident in performing and interpreting basic physical assessment and point-of-care tests.
3. Pharmacist participation in an interprofessional healthcare team has repeatedly been shown to improve patient outcomes.
4. Establishment of a collaborative practice that allows for two-way exchange of patient data and allowing the pharmacist to act in an agreed upon fashion (eg, dispense a medication, call a physician, or schedule an appointment with a physician) is a rational and cost-effective model of patient care.

We conceptually agree with Drs. Romanelli and Jones. However, we are concerned about how they present their case, especially the potentially harmful use of the terms diagnose and prescribe. We understand and applaud their concerns that there will be limited access to primary care providers and that pharmacists can help alleviate the burden on other health care providers by managing low-acuity patients. We believe that pharmacists can provide quality and cost-effective care for patients through the employment of physical assessment skills, point-of-care tests, critical thinking, and well-written practice agreements. These precepts have already been validated in the community pharmacy setting for disease states such as diabetes, dyslipidemias, HIV, HCV, influenza, and streptococcal pharyngitis. However, none of these initiatives would have been possible if a prescriber was not willing to partner with a pharmacist.

Emerging interprofessional practice opportunities for pharmacists could improve public health and result in the creation of a profit center for community pharmacies from the smallest independent to the largest chain. Unfortunately, none of these benefits can be realized without the involvement of a collaborating prescriber to allow for the pharmacist to provide appropriate follow-up care. Anything that academic pharmacy does – intentionally or not – to make it more difficult to form these collaborations is a disservice to the profession.

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REFERENCES

1. Romanelli F, Jones. Is it time to start teaching basic diagnostics? *Am J Pharm Educ*. 2013;77(10):Article 207.
2. Interprofessional Education Collaborative Expert Panel. (2011). Core competencies for interprofessional collaborative practice: Report of an expert panel. Washington, D.C.: Interprofessional Education Collaborative
3. Houck LK. AMA tells pharmacists: "Don't Call US WE'll Call You." FDA Law Blog Web site. http://www.fdalawblog.net/fda_law_blog_hyman_phelps/2013/06/ama-tells-pharmacists-dont-call-us-well-call-you-.html. Accessed January 22, 2014.

Authors' Reply

We appreciate the response and dialogue generated by the letter to the editor authored by Dering-Anderson et al.[1] The purpose of our Viewpoints editorial was in part to provoke healthy debate regarding basic diagnostics, prescribing, and assessment, and we are grateful that this has at least in part been accomplished.[2] We were intentional in our selection of terms, and in particular "basic diagnostics." While we agree these are politically charged and "hot button" terms, we equally contend that the academy cannot continually acquiesce or defer to a passive position when considering the future of the profession as well as the best interests of patients. Simply avoiding terms that make others uncomfortable may be regarded

as disingenuous and/or as a turn towards the path of least resistance.

We are aware of and acknowledge the indisputable contributions and impact that interprofessional care can and will make on the overall health of patients on several levels. Additionally, we agree that the profession is well served to continue to partner with our colleagues in healthcare to advance the core principles engendered within the Core Competencies Report which was initially published in 2011.[3] A better understanding of diagnostic processes, including the critical thinking involved in developing a basic and differential problem list for patients would be a valuable skill for current and future pharmacy practitioners. Expanding the scope of pharmacy practice, or in many cases simply recognizing that many pharmacists are already serving in the role of basic diagnostician should not serve to derail interprofessional principles. Dering-Anderson and colleagues state that academicians should focus their efforts on developing clinicians who can collect, interpret, and act upon patient information collected in a pharmacy. We would contend that pharmacists practice in a variety of settings that are certainly not limited to the physical confines of a pharmacy. Of note, in many states, physicians are collaterally empowered to dispense medications, and many do so on a limited daily basis in the form of drug samples. This has not and will not be a determent to interprofessional practice.

We believe enhanced access and availability of high-quality care for individuals and the public at large is the ultimate goal of the pharmacy profession and healthcare in general. It is our inherent responsibility to move ourselves and others towards this paradigm. We may have to ruffle some feathers to get there and at times have our own feathers ruffled. Our profession continues to evolve and innovate and it may be fair to ask ourselves are we moving fast enough and/or aggressively enough. Collaboration will often require compromise and compromise always involves concession on some level by all parties. In a 1981 editorial Zellmer wrote that "pharmacists still harbored an inferiority complex and had to prove their worth continually to father physician."[4] In 2001 Hasegawa referred to Zellemers comments stating, "the current pre-occupation with physician approval suggests that more than just a vestige of hang-up still persists."[5] We agree with Dering-Anderson et al that words really do matter. However, our patients—and we would argue our students and our profession—demand more than just the careful, purposeful selection of words.

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REFERENCES

1. Dering-Anderson A, Gubbins PO, Klepser D, Klepser M. When the words really do matter. *Am J Pharm Educ.* In press.
2. Romanelli F, Jones M. Is it time to start teaching basic diagnostics? *Am J Pharm Educ.* 2013;77(10):Article 207.
3. Interprofessional Education Collaborative Expert Panel. Core competencies for interprofessional collaborative practice: report of an expert panel. Washington, D.C. Interprofessional Education Collaborative. https://www.aamc.org/download/186750/data/core_competencies.pdf. Accessed February 1, 2014.
4. Zellmer WA. Life as a pharmacist. *Am J Hosp Pharm.* 1981; 38:1291.
5. Hasegawa GR. Still the handmaiden. *Am J Hosp Pharm* 2001; 58(12):1099.