

Pharmacy Technician Education, Training and Competency:

**A position statement for the Minnesota
Society of Health System Pharmacists
(MSHP) on recommended changes for
pharmacy technicians.**

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Executive Summary

Pharmacists have a unique skill set in their drug knowledge and application, and should take a greater role in managing medication therapy to improve patient care and outcomes. In order to accomplish this, the profession will need a shared vision for pharmacy technician education, training and competency to allow pharmacists to focus less time on technical pharmacy roles and advance into managing medication therapy to improve patient care and outcomes.

Along with advancing the role of the pharmacist, there are healthcare changes that will require the profession to become more efficient in providing pharmacy services. The healthcare changes that are predicated to occur include a 15% increase in hospital days by the end of the decade, an increase by 51.9% of patients greater than 50 years old and decreasing reimbursement for hospital services.

There is also a predicted shortage of healthcare professionals that will allow the opportunity for pharmacists to become more involved in medication therapy management. By 2020, there is predicated to be a shortage of between 30,000 to 200,000 physicians and about 800,000 Nurses.

Finally, there is an expected need for pharmacists due to the prescription volume. According to the Health Resources and Services Administration (HRSA), there were approximately 196,000 active pharmacists in the United States in 2000. The HRSA predicted that the number of active pharmacists would only grow by 28,500 over this decade. With the expected number of pharmacists needed by 2020 to be 420,000 based on an increase in prescription volume, there will need to be a sharp increase in the number pharmacists graduating and there will also need to be a shift in tasks delegated to pharmacy technicians.

Therefore, the prescription volume and professional growth into medication therapy management will require the profession to utilize multiple options (e.g., automation & pharmacy technicians) to support the work of the pharmacy profession and the pharmacists. The MSHP position to improve education, training and certification will be a step necessary to advance the profession of pharmacy.

MSHP's Position on Pharmacy Technician Education, Training and Competency

The MSHP is seeking to create a shared vision among MSHP members to elevate pharmacy technician education, training and competency standards in Minnesota. The following recommendations are the vision of where MSHP believes pharmacy technician education, training and competency need to be set:

- I. Require a minimum age of 18 to practice as a pharmacy technician
- II. Require Pharmacy Technician Certification within one year of becoming registered as a pharmacy technician and maintaining the certification to maintain registration beginning in 2008.
 - a. The certification exam would be a psychometrically sound exam that assesses a pharmacy technician's ability to critical think through problems.
- III. Require the employer to have a site based, board approved technician training program and have site based annual competencies by 2010.
 - a. This training will be for newly hired pharmacy technicians and the training would occur within 3 months of the hire.
 - b. Completing the training would be contingent to register as a pharmacy technician.
 - c. Competencies would be completed in a calendar year.
- IV. Require ASHP Accredited Training Program by 2015 (either employer or college based 15 week training program)
- V. Require formal education by 2020.

Introduction

Pharmacists have a unique skill set in their drug knowledge and application, and should take a greater role in managing medication therapy to improve patient care and outcomes. In order to accomplish this, the profession will need a shared vision for pharmacy technician education, training and competency to allow pharmacists to focus less time on technical pharmacy roles and advance into managing medication therapy to improve patient care and outcomes. When pharmacists limit their direct involvement to the technical pharmacy roles and delegate these responsibilities to pharmacy technicians or automation, they can increase pharmaceutical services for which they are uniquely educated and trained.

The purpose of this paper is to create a shared vision for MSHP members for how pharmacy technicians should be educated, trained and maintain competency in Minnesota for health system roles. A task force has been put together with members from pharmacy across the state (see table 1) to evaluate and recommend changes to pharmacy technician education, training and competency within the state.

Background

The pharmacy profession has changed dramatically in the last 40 years and technician training and education has evolved slowly during this time. The American Society of Health System Pharmacists (ASHP) took an early role in the 1950's to develop technician training programs and calling for changes in state law to define the pharmacy technician role¹. In the late 1970's and early 80s, ASHP developed training guidelines and began accrediting pharmacy technician training programs. In 1995, the Pharmacy Technician Certification Board (PTCB) was established and created a nationally certified examination that would certify pharmacy technicians. Then in 2003, ASHP published Health System Pharmacy 2015 goals, which set the goal to have 85% of the pharmacy technicians to be certified by 2015.² Six states: Texas, Wyoming, Virginia, Louisiana, New Mexico and Utah require technician certification.

The Case for Change

The pharmacist role will continue to evolve due to changes in the healthcare environment and our professional goals as outlined below. With this evolution, there will be an increasing need and opportunities for pharmacists to take on a greater role in managing medication therapy. To help offset the increased pharmacist resource need, the profession will require a more qualified pharmacy technician to take on the technical role of pharmacy practice. Without this, the profession may limit its ability to free up pharmacist resources in order to meet the increasing need and opportunities for pharmacists in the future and decrease pharmacist's impact on patient safety and care.

The healthcare changes that are predicated to occur are outline below and include: the future direction of healthcare, patient demographics, expanding role of the pharmacist, expanding role of the pharmacy technician, trends in pharmacy distribution and predicated shortage of healthcare professionals.

Future of Healthcare

Healthcare will see major changes as the baby boomer impact will begin to take effect in 2010. There is a projected 15% increase in inpatient hospitalized days by the end of the decade. Healthcare reimbursement is also predicted to decrease. This will create a tremendous pressure on hospitals and health systems to redesign pharmacy roles so that

pharmacists are focused on clinical programs and partnering with physicians, which will require the technicians to take ownership of the distributive and non-clinical roles. Greater collaboration with physicians to improve outcomes for patients will also occur in areas where pharmacy is not fully established currently such as the Emergency Department. There will be increasing needs for pharmacists in prescription and tele-pharmacy to improve services to rural areas of the state.

Patient Demographics

By 2020, the projected increase in the civilian non-institutionalized population for the age group 50 and older will be an increase of 51.9%.³ This will result in a greater need for healthcare and medications in this patient population, which will consume physician, nursing and pharmacist resources.

Future Role of the Pharmacist

The pharmacist role has evolved from primarily dispensing to monitoring and managing drug therapy. There has been an increase in decentralized pharmacist services from 19.5% to 26.1% from 2002 to 2005, with 50% of pharmacy directors predicting they will be decentralized in the future⁴.

We should also expect the role of the pharmacist to continue to evolve as evidenced by national organizations publishing future clinical roles for the profession [e.g., ASHP publishing the 2015 goals (Table 2)].

Future Direction of Pharmacy Technicians

In 2002, there were as many as 250,000 pharmacy technicians in the United States.¹ The Bureau of Labor Statistics estimates there will be a 36% increase in the need for pharmacy technicians from 2000 to 2010.¹ This growth is considered in line with other health care supportive personnel to meet the increased healthcare needs outlined above.

In addition to an overall increase in pharmacy technicians, the role of the pharmacy technician is also expanding into technical activities that were previously done by pharmacists. For example, technicians are performing tech-check-tech functions for distribution of medications, supporting clinical services such as a warfarin dosing service, participating in a therapeutic interchange program that is overseen by a pharmacist, educating patients on using pill boxes, screening patients for a pharmacist-run hypertension clinic and performing data analysis at the University of Pittsburgh which has helped create 25 new initiatives to improve patient care. Additional information on these programs can be found at the end of this white paper (Table 3).⁵⁻⁶

Pharmacy Technician and Medication Safety

Pharmacy technicians can have a significant impact on medication safety in the medication use system. These roles can be in drug distribution, pharmacy buyer roles, new practices published in the literature that relieve pharmacists from technical activities and future roles yet to be defined. Studies of pharmacy technician ability to safely and accurately check medications have reported technicians at 99.89% or higher, and in one study pharmacy technician accuracy was statistically higher than pharmacists.⁷⁻⁸ These pharmacy technicians were extensively trained in the departments, certified through an internal program and also have quality assurance checks performed.

Trend in Pharmacy Distribution and Prescription Volume

In the 2005 ASHP National Survey of Pharmacy Practice in Hospital Setting report, there is a clear trend in the increasing role of automation in drug distribution including bar code scanning.⁴ There is an increased percentage of hospitals using:

- automated dispensing cabinets from 49.2% to 71.8% and the use of Robotic dispensing machines increased from 4.5% to 15% from 1999 to 2005.⁴
- first doses coming out of automated dispensing cabinets from 26.7% to 43.7% from 2002 to 2005.⁴

There has been increased management of these systems by pharmacy technicians. These roles require a highly trained technical staff to appropriately utilize and manage this automation to improve safety and efficacy of the medication distribution system.

An annual growth rate of 5% is expected for outpatient prescription orders, projected to be 6-7.2 billion prescriptions in 2020.⁹ Even if automation tripled productivity to 90,000 orders/pharmacist/year, 67,000 to 80,000 FTE pharmacists would be needed in 2020.⁹

Hospital drug orders are projected to increase 2.5% per year, to a total of 3.5 billion in 2020.⁹ If hospital pharmacist productivity doubled to 108,000 orders/pharmacist/year, 32,400 additional pharmacists would be needed.⁹ Thus, with a conservative estimate of prescription growth in the next 20 years, and an ambitious estimate of productivity gains of three times in the outpatient area and twice in institutions, about 100,000 pharmacists would be needed in 2020 only for dispensing prescriptions, not considering additional clinical workload.⁹

Workforce Changes

Physicians

It is expected that there will be a shortage of Physicians by 2020. The Council on Graduate Medical Education (COGME), a national advisory body that makes policy recommendations regarding the adequacy of the supply and distribution of physicians, predicts that if current trends continue, demand for physicians will significantly outweigh supply by 2020.¹⁰ The projected shortage will be 30,000 physicians. The USA today reported in March 2005 that there will be a shortage of 85,000-200,000 physicians by 2020.¹¹ This shortage will provide an opportunity for pharmacy to move into an expanded role of managing medication therapy.

Nurses

The Tennessee Independent Colleges and Universities Association stated that Tennessee will be 10,000 nurses short of its need by 2020.¹² Nationally, the federal government's latest projection is a shortfall of 800,000 registered nurses by the same year.¹²

Pharmacists

According to the Health Resources and Services Administration (HRSA), there were approximately 196,000 active pharmacists in the United States in 2000¹³ Although the demand is increasing, HRSA predicted that the number of active pharmacists would only grow by 28,500 over this decade¹¹ With the expected number of pharmacists needed by 2020 to be 420,000⁹, there will need to be a sharp increase in the number pharmacists graduating and there will also need to be a shift in tasks delegated to pharmacy technicians.

Case for Change Conclusion

There are many factors outlined above that will increase the need for pharmacists in the future. This need can be partially offset by developing a highly trained technician task force to take on the management of the drug distribution and non-clinical activities.

MSHP's Position

The Minnesota Society of Health-System Pharmacists is seeking to create a shared vision among MSHP members to elevate pharmacy technician education, training and competency standards in Minnesota. Elevating the pharmacy technician standards, enhancing knowledge and skills required, will help prepare the profession for the future. We are seeking support that the following recommendations are the vision of where MSHP believes pharmacy technician education, training and competency need to be required:

- VI. Require a minimum age of 18 to practice as a pharmacy technician
- VII. Require Pharmacy Technician Certification within one year of becoming registered as a pharmacy technician and maintaining the certification to maintain registration beginning in 2008.
 - a. The certification exam would be a psychometrically sound exam that assesses a pharmacy technician's ability to critical think through problems.
- VIII. Require the employer to have a site based, board approved technician training program and have site based annual competencies by 2010.
 - a. This training will be for newly hired pharmacy technicians and the training would occur within 3 months of the hire.
 - b. Completing the training would be contingent to register as a pharmacy technician.
 - c. Competencies would be completed in a calendar year.
- IX. Require ASHP Accredited Training Program by 2015 (either employer or college based 15 week training program)
- X. Require formal education by 2020.

Table 1. Minnesota Pharmacy Representatives to the Technician Education, Training and Competency Task Force

- Minnesota Society of Health System Pharmacists
- Minnesota Pharmacist Association
- University of Minnesota College of Pharmacy
- Minnesota Board of Pharmacy representative
- Century College
- Long Term Care Pharmacy representative
- National Association of Chain Drug Stores (NACDS)
- Pharmaceutical Industry

Table 2. ASHP 2015 Goals²

1. Increase the extent to which pharmacists help individual hospital inpatients achieve the best use of medications
2. Increase the extent to which health-system pharmacists help individual non-hospitalized patients achieve the best use of medications.
3. Increase the extent to which health-system pharmacists actively apply evidence-based methods to the improvement of medication therapy.
4. Increase the extent to which pharmacy departments in health systems have a significant role in improving the safety of medication use.
5. Increase the extent to which health systems apply technology effectively to improve the safety of medication use.
6. Increase the extent to which pharmacy departments in health systems engage in public health initiatives on behalf of their communities.

Table 3. Innovative Pharmacy Technician Roles

<ul style="list-style-type: none">• Tech-check-tech programs have increased in hospital settings from 2.4% to 5.1% in recent years.⁴
<ul style="list-style-type: none">• Technician supporting clinical functions - at the Carl T. Hayden Veteran Affairs Medical Center in Phoenix, Arizona, pharmacy technicians are participating in warfarin dosing service.⁵ Each day, the pharmacy technician generates the International Normalized Ratio and reports these to the pharmacist. After review by the pharmacist, the technician telephones patients requiring a dosage modification and documents each contact electronically. Through scripted questions, the pharmacy technician inquires about potential adverse effects, assesses medication adherence and provides education through the use of scripted questions. The pharmacy technician then reviews and signs the technician's notes. These are examples along with other initiatives such as a therapeutic interchange program, teaching patients to fill medication boxes, and screening for patients who would benefit from a pharmacist run hypertension clinic.
<ul style="list-style-type: none">• Data analysis pharmacy technician - At the University of Pittsburgh Medical Center Health System, they have created an innovative technician role in data analysis.⁶ The role includes chart reviews to help assess baseline prescribing practices, benchmarking surveys which included contacting pharmacists and nurses from other institutions, financial impact assessments such as purchasing trends and reports, quality improvement reporting. With this role of the pharmacy technician, the hospital was able to develop and implement 25 new initiatives including clinical initiatives such as therapeutic drug optimization (e.g., medication restrictions) and treatment algorithms (e.g., sedation in the ICU, surgical antimicrobial prophylaxis).⁶

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