

The Creation of Consensus Legislation on Pharmacy Technician Administered Vaccines

SURVEY COMPLETED SUMMER 2021



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Introduction:

Late in the Spring of 2021, there was concern amongst community pharmacists that statutory and regulatory waivers authorizing pharmacy technicians to administer vaccines would be repealed.^{1,2} The pharmacists' concerns focused on having sufficient staff to provide prescriptions, pharmaceutical care, and vaccine services. As a result of Federal and State waivers, issued in response to the SARS-CoV-2 Pandemic, pharmacy technicians in Nebraska were administering vaccines. These waivers allowed pharmacy technicians to practice at a level not previously allowed under Nebraska pharmacy law.^{3,4} Faculty and students from the University of Nebraska College of Pharmacy worked with leadership at the Nebraska Pharmacists Association to determine if introducing a statutory change, permanently allowing properly trained

pharmacy technicians to administer vaccine was the preferred choice amongst Nebraska licensed pharmacists and Nebraska registered pharmacy technicians. While much work has been published regarding pharmacy technicians' career advancement and specifically concerned with pharmacy technicians administering vaccine, the focus of this work was to determine if there was sufficient agreement amongst Nebraska credentialed pharmacists and pharmacy technicians to justify statutory change.^{5,6,7,8,9,10}

The survey data indicated that statutory changes were preferred by most respondents and a consensus bill was introduced during the 2022 Unicameral session. This bill was not advanced from the Health and Human Services Committee following surprise opposition from the Nebraska Nurses Association and a request for a sunrise review to be conducted by the Nebraska Department of Health. This report discusses the survey data and the subsequent legislation and is presented to illustrate an opportunity to advance the practice of pharmacy technicians, using consensus opinions of supervising pharmacists and the pharmacy technicians themselves.

Background:

Nebraska became the 49th state to allow pharmacy technicians to work in community pharmacies, in 1994.³ In Nebraska statute, pharmacy technicians have a listing of prohibited tasks and functions, but no defined permissive scope of practice.

Progression of the practice of pharmacy technicians has been slow, most often following a study sanctioned by the Board of Pharmacy demonstrating the safety of

any new task or function^{11,12,13}; followed by a statutory change authored and supported by the Nebraska Pharmacists Association. Since pharmacy technicians have been temporarily, expressly allowed to provide vaccines in response to the SARS-CoV-2 pandemic, a Board sanctioned study wasn't required to gather safety data. The data existed; it was a matter of querying the appropriate sources to determine if there were safety concerns.

Specific data on vaccines administered by pharmacy technicians is not readily available. The profession of the administering professional is not captured by the COVID vaccine data reporting system, nor is it captured in the traditional vaccine reporting systems used by the State of Nebraska. This is not unusual, as the profession of the vaccine administrator is not reported with most other vaccines either. The exception occurred over two decades ago when there was reporting of the name of the person administering second dose smallpox vaccine following the September 11, 2001, terrorist attacks.¹⁴

The research team determined that a survey of Nebraska licensed pharmacists and registered pharmacy technicians would provide the opinions of these professionals necessary to guide policy decisions. The survey was also constructed to allow for collection of some data that may have been reported to the vaccine adverse event reporting system (VAERS) system to attempt to determine safety. The intent of this survey was to provide information to advise the leadership of the Nebraska

Pharmacists Association and to provide information to the Nebraska Unicameral, if a bill was to be ultimately drafted.

It was important to the authors to address previously voiced concerns around pharmacy technician practice, including a difference in the comfort between rural and urban pharmacists and the ever-present argument that assigning trainable tasks to pharmacy technicians decreased safety. Also of interest was the impact of experience with pharmacy technician administered vaccines on opinions of appropriate regulation of this profession.^{15,16,17}

Nebraska does have an alternate pathway to allow pharmacy technicians to administer medications, including vaccines. Using a process developed by the Nebraska Board of Nursing, pharmacy technicians can register with the state as medication aides.¹⁸ Medication aides are allowed to administer drugs, including vaccines, via the nasal and injectable route, with proper training and documentation of skill. This pathway does NOT require cardiopulmonary resuscitation (CPR) training and focuses on routes of administration currently not used when providing vaccines, in addition to the injectable and nasal administration that may be used during vaccination. The variances between the existing waiver language, allowing pharmacy technicians to vaccinate, and the medication aide language, were of concern to researchers and pharmacy leadership. It was determined that exploring the opinions of licensed pharmacists and registered pharmacy technicians should include using the

medication aide pathway as an alternate to statutory change. The multiple pathways to allowing pharmacy technicians to administer vaccines are compared in Figure 1.

Survey Methods

An eleven-item survey was created in Qualtrics and previewed to assure ease of use. Pharmacists, pharmacist interns, and pharmacy technicians were involved in this initial evaluation and review of the survey instrument. IRB approval was sought, and this work was approved as exempted research. Using social media platforms and the daily news email published by the Nebraska Pharmacists Association, the survey was made available to all pharmacists and pharmacy technicians with internet access. Only completed surveys from pharmacists and pharmacy technicians credentialed in Nebraska were evaluated. Differences between pharmacist and technician responses for categorical variables were evaluated using the Chi-square test of independence. All evaluations were conducted with Stata. (StataCorp. 2021. *Stata Statistical Software: Release 17*. College Station, TX: StataCorp LLC.)

Demographic Questions

1. Year of Birth
2. Gender (female, male, other)
3. Year of 1st Pharmacist's degree, if applicable / Year of 1st registration as a Nebraska Pharmacy Technician
4. County where your primary pharmacy practice is located (all 93 Nebraska counties were listed alphabetically)

5. Are you a member of the Nebraska Pharmacists Association (NPA)
6. Do you work with pharmacy technicians at your practice site?
7. Are these technicians registered as Nebraska Medication Aides? (Yes, no, don't know) Are you registered as a Nebraska Medication Aide?
8. Do you supervise pharmacy technicians who administer vaccines? Do you currently or have you ever administered human vaccines?

Specific questions regarding statutory proposal

1. Which of the following statements most closely represents your opinion concerning pharmacy technicians injecting vaccines
 - a. I prefer the limitations provided in the federal pandemic ruling
 - b. I prefer pharmacy technicians be able to inject any adult (age 19 years and older)
 - c. I prefer pharmacy technicians be able to inject into the arm, but not the antero-lateral thigh
 - d. I prefer pharmacy technicians to be able to inject any vaccine to any appropriate patient
 - e. I prefer that pharmacy technicians not be allowed to administer vaccines
2. Which of the following statements most closely represents your opinion concerning potential changes to Nebraska pharmacy law?
 - a. I prefer that the Unicameral make no changes to current statute
 - b. I prefer that the Unicameral change the statutes to mirror the current federal ruling

- c. I prefer that the Unicameral allow pharmacy technicians to inject vaccines for adults only
- d. I prefer that the Unicameral allow pharmacy technicians to provide vaccines for any appropriate patient

Safety Question

1. Are you aware of any patient harm resulting from a Nebraska registered pharmacy technician injecting a vaccine? Free text space was provided for any yes answers

Free text space provided for additional comments

Legislation Drafting Methods:

The registered lobbyist for the Nebraska Pharmacists Association, Robert J. Hallstrom, JD, drafted the legislative proposal on behalf of the NPA to include the specifications indicated by the survey data. The original draft was reviewed by the NPA Legislative Committee members and professional staff at the NPA. A revised draft was provided to the NPA Board of Directors and approved for the 2022 Unicameral Session. Senator Robert Hilkemann (District 4) introduced the bill on behalf of the NPA on 6 January 2022. The hearing on the bill was held 2 February 2022 in front of the Health and Human Services Committee.¹⁹

Results

408 surveys were submitted. Of these 300 were complete and submitted by pharmacists or pharmacy technicians who indicated they were credentialed within Nebraska. Of the 300 useful surveys, 174 were completed by pharmacists and 126 by pharmacy technicians. The 108 unusable surveys had missing answers (51); were completed by people who indicated they were not credentialed in Nebraska (34); were submitted by duplicate IP addresses (22); and one indicated practice in a county that does not have a licensed pharmacy (Arthur).

Table 1 displays the demographics of the respondents. Counties were separated into 3 categories based upon 2020 census data.²⁰

Urban counties population 190,000 or greater include Douglas, Lancaster, and Sarpy

Mid-range counties population 50,000 to 189,999 include Hall and Buffalo

Rural counties include all other counties in Nebraska (the largest rural county is Dodge with a population of 37,167; the smallest county in Nebraska is McPherson with a population of 399) The attached map of Nebraska listing the number of pharmacies by county was provided by the N.P.A.

Free text responses included 4 reports of vaccine adverse events, 3 general comments about desired legislation and a statement concerning vaccine reporting. Table 2 lists the free text responses.

Those respondent pharmacists who had experience working with technicians administering vaccines were more likely to support permanent authority for pharmacy technicians to administer vaccine than those who had no experience. Pr=0.536

Pharmacy technicians who had experience administering human vaccines were more likely to support permanent authority for pharmacy technicians to administer vaccine than those who had no experience Pr=0.518

There was no difference in responses based on gender.

There was no difference in responses based on date of birth.

There was a minimal difference in responses based on date of initial credentialling Pr=0.309 with respondents born after 1990 being more likely to support permanent authority for pharmacy technicians to administer vaccine than those who were born before 1990.

Membership in the N.P.A. had no correlation with the responses.

Discussion:

The research team was most impressed with the difference in responses occurring between those with experience working with technicians administering vaccines and those who did not have such experience. The experience appeared to cause the

responders to have a more favorable view of pharmacy technicians vaccinating and to desire fewer restrictions on this practice.

No other variable appeared to predict the responses to questions concerning potential legislation. Gender had no impact; county size also described as urban vs rural had limited impact with responses from the 3 largest counties in Nebraska being slightly more in favor of creating permanent authority for pharmacy technicians to administer vaccine than rural pharmacists. This difference was not evident when comparing the responses of pharmacists and pharmacy technicians with direct experience in pharmacy technician administered vaccines.

Concern regarding safety appears often in discussion about advancing the role of the pharmacy technician. The two reports of inaccurate placement and the report of wrong vaccine are concerning, but not unexpected.²¹ While there are no data available on the rate of SIRVA in vaccine administration, having 2 inappropriate placements in over the 24 months that pharmacy technicians have been vaccinating, including multiple doses of COVID vaccine and two influenza vaccination seasons, it is expected that there will be reported shoulder pain.²² To date, neither instance of inappropriate placement have been reported to the Nebraska Board of Pharmacy. The authors are not convinced that the reporting of “radial nerve” damage is accurate. We do believe that there was unexpected pain following the vaccination, but we are not certain that the injury was reported correctly. Neither potential placement error has been confirmed by VAERS reporting. Wrong drug errors have

been reported widely in the literature since the 1999 landmark US Institute of Medicine report, To Err is Human.²³ It is not unexpected that a significant change in workflow would result in a medication error. Added to the change in workflow, there was the added challenge of increased vaccination volume. No attempt is being made to discount the pain and concern that accompanies a medication adverse event. Rather, the authors view these three reports as unexpectedly low, given the challenges of the pandemic, staffing shortages, and changes in workflow and tasks.

The fourth report of a dosing anomaly whereby a patient received a dose of vaccine 7 days too early is a technical error, but not a clinical error. Additional information provided by the respondent indicates that the patient traveled more than 50 miles to receive vaccine and that the pharmacist made the professional decision to allow the patient receive vaccine. The pharmacy technician did not make this decision.

The overall agreement between the answers from pharmacists and pharmacy technicians was noted. Equally noteworthy was the agreement between rural and urban counties and the agreement between association members and non-association members. This indicated that a clear path toward an appropriate legislative proposal existed. Additionally, the relative lack of adverse events with pharmacy technician administered vaccine indicated that patient safety was not compromised when properly trained pharmacy technicians were involved in administering vaccine.

Legislative Bill 812 (LB 812) was drafted on behalf of the Nebraska Pharmacists Association.¹⁹ Several of the restrictions in the proposed legislation were suggested by members of the N.P.A. Legislative Committee, with particular attention being paid to pharmacy technician training and preserving the pediatric medical home.^{24,25} The bill included the following:

- Pharmacy technicians should be authorized by statute to administer vaccine;
- Pharmacy technicians administering vaccine need nationally approved training, including emergency use of epinephrine and cardio-pulmonary resuscitation (CPR);
- Pharmacy technicians should be authorized to vaccinate via the intramuscular (IM) route into the deltoid muscle;
- Pharmacy technicians should be allowed to administer any vaccine, via the IM route to patients over the age of 3 years; and
- Pharmacy technicians require the supervision of an onsite pharmacist.

LB 812 was heard in front of the Health & Human Services Committee of the Unicameral on 2 February 2022. Results from these surveys were reported very broadly during this hearing:

In anticipation of this legislation, I along with the help of several senior level pharmacist interns and the Nebraska Pharmacists Association conducted a survey of pharmacists and pharmacy technicians practicing in Nebraska to determine what they wanted from this legislation. Our

results show no increased risk to Nebraskans because of the current pandemic waivers and overall support for pharmacy technicians to continue to administer vaccines. This bill encompasses the results of the surveys.

Other than this testimony, the results of these surveys are reported here for the first time.

Follow-Up:

LB 812 was not forwarded by the Health and Human Services Committee to the full Unicameral. The Chairman of the committee requested that the Nebraska Pharmacists Association participate in a sunrise review process run by the Executive Branch, Department of Health and Human Services. The sunrise review commenced during June 2022 but has not completed work at the time of submission.²⁶

Gratitude:

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Figure 1. Potential Pathways for Pharmacy Technicians to Administer Medications

Element / Skill / Training	Current Federal Waiver	Proposed in LB 812	Medication Aide option 172 NAC 95
Injection skill	Nationally certified training program	Nationally certified training program	Determined by the pharmacist
Oral administration ¹	Rotavirus vaccine allowed	Not allowed	Required training ³
Nasal administration ²	Nasal influenza allowed	Not allowed	Required training ³
Ophthalmic administration	No ophthalmic vaccines	Not allowed	Required training ³
Otic administration	No otic vaccines	Not allowed	Required training ³
Topical administration	No topical vaccines	Not allowed	Required training ³
Supervision	Not directly addressed	Pharmacist on-site	Monitoring is required, on-site is NOT expressly required
CPR training	Required	Required	Not required
Continuing Education (CE) requirement	Depends on training program, CE required to be a certified technician	Depends on training program, CE required to be a certified technician	Not required
On-going state fees other than pharmacy technician registration	None	None	\$25 biennially
Supervising Professional Board	Pharmacy	Pharmacy	Nursing
Vaccinating children under 3 years of age	Allowed	Not allowed	Allowed
Vaccines covered	All childhood vaccines, COVID, influenza	All vaccines for people over the age of 3 years of age ⁴	All
Monitoring adverse reactions	Required, epinephrine training provided	Required, epinephrine training provided	Required, no epinephrine training provided
Supervisory ratio	None listed in Federal waiver. Nebraska limits to 1:3	No change in the existing 1:3 ratio	No ratio, unlimited supervision is allowed

1. The existing federal waiver would allow for the administration of rotavirus vaccine to children 8 months of age and younger. We have no evidence of pharmacy technicians administering rotavirus vaccine using this waiver. Would be expressly disallowed under LB 812, is expressly allowed under the Medication Aide option, if authorized by the pharmacist.
2. Nasal influenza vaccine is not commonly used, but technically allowed under the current Federal waiver. Would be expressly disallowed under LB 812, is expressly allowed under the Medication Aide option, if authorized by the pharmacist.
3. To register as a Medication Aide, this training is required, even when not desired by the supervising pharmacist.
4. LB 812 would allow for shingles vaccine which is currently NOT allowed under the Federal waiver.

Table 1: Respondent Demographics

Question	Pharmacists (174)	Pharmacy Technicians (126)
Year of Birth		
Before 1950	1	0
1950 - 1970	55	11
1971 - 1990	90	44
1991 - 2002	28	71
Gender		
Female	117	99
Male	57	26
Other	0	1
Primary County of Practice		
Urban	88	77
Mid-Range	4	4
Rural	82	45
N.P.A. Member		
Yes	112	23
No	62	103

Table 2: Free Text Responses

Topic	Comments
Vaccine Adverse Events / Dosing errors	
	The was a report of radial nerve damage by a patient’s family member
	We had a case of SIRVA after a flu vaccine
	We gave a COVID vaccine to someone younger than 65 years before it was approved for her. Her husband was 72 and she was 1 week away from her 65 th birthday, so we decided to do it (final sentence redacted for patient / provider anonymity)
	Wrong vaccine given. Patient wanted Pfizer and got Moderna
Comments Potential Legislation	
	No matter what, there must be a pharmacist on-site. This cannot happen in remote pharmacies or by delegated dispensing
	My technicians have completed the APhA Training Program and I think that should be the standard. There are some really sloppy programs out there that don’t teach Epi-pens or anything else and that should not be allowed.
	I do think registered technicians should be able to do anything they are competently trained to do. Part of that training NEEDS to include BLS and treatment for anaphylactic shock – despite my belief that some current licensed vaccinators don’t follow these rules.
Vaccine Reporting	
	Can someone please tell the state that when I give vaccine it shows up in the PDMP and when the visiting nurses or county health gives vaccine there is no record anywhere and the nurses don’t even provide documentation for the patients to bring in to us. It makes my pharmacist mad too.