

Impact of a Flu Clinic Simulation on Student Readiness to Provide Immunization Services

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Background

- Pharmacists’ authority to administer immunizations has evolved significantly over the last few decades, including expansion of the types of vaccines pharmacists can administer and increased authority to administer vaccines without a prescription.¹
- To ensure pharmacy students are ready for this expanded clinical role, immunization services are included in the ACPE Accreditation Standard 2.3 Health and Wellness² and as one of the core Entrustable Professional Activities.³
- The University of Georgia (UGA) College of Pharmacy uses the American Pharmacists Association (APhA) Pharmacy-based Immunization Delivery course as baseline training for pharmacy students to meet this required practice skill.
- To further prepare students to be “practice-ready” and manage an immunization service, second-year (P2) students also participate in a mock immunization clinic prior to their first patient care experience.
- The simulation consisted of the following stations:
 - Patient
 - Non-immunizer Clinic Role
 - Vaccine Administration
 - Documentation
 - Frequently Asked Questions

Objective

To assess the impact of a flu clinic simulation on student perceived readiness to provide immunization services and to assess immunization administration performance.

References

- J Am Pharm Assoc. 2017; 57(6): 661-669
- ACPE Standards 2016 at <https://www.acpe-accredit.org/>
- AJPE 2107; 81(1) Article S2: 1-7

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Methods

Student Perceptions: P2 students completed a pre-/post-survey where they evaluated their perceived readiness to independently perform 10 skills integral to the immunization process using a 3-point scale:

- Ready** - I feel like I am ready to do this as a practicing pharmacist.
 - Somewhat Ready** - While not completely ready to perform independently, I am familiar enough with this topic and know where to look for more information.
 - Not Ready** - I am not ready to perform and feel like I need additional training before I can do this in practice.
- Pre- and post- scores were compared using the Wilcoxon signed-rank test.
 - In the post-simulation survey, students were asked additional questions about how preceptor feedback and the simulation impacted their perceived readiness.

Preceptor Evaluation: Faculty also evaluated students at the Vaccine Administration station, where they assessed students ability to independently complete steps of the process and assigned an overall rating.

Results

Eighty-nine percent of P2 students (125/141) consented to participate in the study.

Pre- and Post-Survey Responses for Student Perceived Readiness

Topic		Pre: n (%)	Post: n (%)
Utilize appropriate resources to provide immunization services	Ready	56 (45)	104 (83)
	Somewhat ready	66 (53)	21 (17)
	Not ready	3 (2)	0
Follow state legal requirements to establish immunization services	Ready	42 (34)	83 (66)
	Somewhat ready	73 (58)	41 (33)
	Not ready	10 (8)	1 (1)
Identify supplies needed to provide immunizations	Ready	82 (66)	114 (91)
	Somewhat ready	40 (32)	11 (9)
	Not ready	3 (2)	0
Identify appropriate candidates for influenza vaccines	Ready	82 (66)	108 (86)
	Somewhat ready	43 (34)	17 (14)
	Not ready	0	0
Administer an intramuscular injection	Ready	94 (75)	120 (96)
	Somewhat ready	28 (22)	4 (3)
	Not ready	3 (2)	1 (1)

Topic		Pre: n (%)	Post: n (%)
Document per state law	Ready	37 (30)	89 (71)
	Somewhat ready	74 (59)	36 (29)
	Not ready	14 (11)	0
Utilize the state immunization registry	Ready	25 (20)	79 (63)
	Somewhat ready	69 (55)	44 (35)
	Not ready	31 (25)	2 (2)
Manage adverse reactions to vaccines	Ready	40 (32)	85 (68)
	Somewhat ready	71 (57)	37 (30)
	Not ready	14 (11)	3 (2)
Organize a mobile vaccine clinic	Ready	5 (4)	56 (45)
	Somewhat ready	61 (49)	60 (48)
	Not ready	59 (47)	9 (7)
Communicate effectively with patients during the immunization process	Ready	79 (63)	117 (94)
	Somewhat ready	46 (37)	7 (6)
	Not ready	0	1 (1)

Students indicated increased sense of readiness for all steps of the process (P<.0001 for all areas).

Implications

- Simulations can require significant faculty oversight, which can be a limitation for many programs. Formal faculty evaluation was limited to the administration station.
- However, based on the positive results, this study demonstrates that simulations can be a useful tool to reinforce best practices for immunization services, especially for programs that may not have the resources to provide specific patient care experience in this area.

Preceptor Evaluation at Administration Station

Overall Rating	Dependent (below average/ remediation required)	Assisted (below average)	Supervised (average)	Minimal Supervision (above average)	Independent (above average)
N (%)	1 (1)	11 (9)	44 (36)	64 (52)	3 (2)

54% of students scored above average.

Step	Correct	Correct with prompting	Not correct
Prepares station with correct supplies	108 (88.5%)	11 (9.0%)	3 (2.5%)
Prepares dose correctly	99 (80.5%)	22 (17.9%)	2 (1.6%)
Administers vaccine appropriately	90 (72.6%)	31 (25.0%)	3 (2.4%)
Uses appropriate post-vaccine procedures	94 (75.2%)	27 (21.6%)	3 (2.4%)
Completes documentation	68 (63.6%)	39 (36.4%)	0
Uses effective communication skills	87 (70.2%)	36 (29.0%)	1 (0.8%)

Students performed most steps correctly, but needed the most prompting/feedback on documentation and communication.

Additional Student Feedback:

- 90% of students reported feeling more prepared for immunization practice as a result of preceptor feedback.
- 92% reported feeling more prepared because of the realistic qualities of the simulation.

