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BRIEF REPORT

Education on Vaccine Hesitancy in Family Medicine Clerkships: A CERA Study

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ABSTRACT

Background and Objectives: While vaccine hesitancy (VH) is a growing challenge in clinical practice, formal training within medical education is limited. Family medicine clerkships provide a unique setting for learners to engage in vaccine counseling with diverse patient populations. This study examined the prevalence of VH education within family medicine clerkships and explored curricular approaches, preferred timing, and perceived barriers to implementation.

Methods: We conducted a cross-sectional survey of US and Canadian family medicine clerkship directors through the 2025 Council of Academic Family Medicine Educational Research Alliance survey. Questions assessed whether VH content is included, preferred timing for instruction, teaching strategies, and perceived barriers. We used descriptive statistics to summarize responses.

Results: Of 174 eligible directors, 100 (57.5%) responded. One-third (33%) reported teaching VH during the clerkship. Although most clerkship directors agreed VH is important to address in the clerkship, competing curricular priorities (47%) and perceived duplication with other rotations (19%) were the most common barriers. Half (50%) preferred teaching VH in preclinical years, while 28% favored integration during the family medicine clerkship. Interest in using free online modules was slightly positive.

Conclusions: The preclinical years are an important time to introduce VH curricular strategies, with application of these tools in the clinical years. The development of standardized curricula that incorporate evidence-based tools could help future physicians more effectively address VH.

INTRODUCTION

Vaccine hesitancy (VH) is an increasing clinical challenge that warrants integration into medical education. Educational programs that teach evidence-based communication strategies can positively impact patient outcomes. In two randomized clinical trials, one with training on use of presumptive language and motivational interviewing, and the other with presumptive language alone, human papillomavirus vaccination rates were increased.[1,2] A postpartum vaccination promotion intervention using motivational interviewing techniques also improved infant vaccination.[3] Within medical school, training third- and fourth-year medical students on COVID-19 vaccine counseling using ask-respond-tell-seek and motivational interviewing techniques increased student confidence and comfort.[4]

Despite these efforts, gaps persist across medical student clerkships—particularly in family medicine, where learners routinely discuss vaccines with patients across the lifespan. Although individual institutions have described educational interventions addressing VH, little is known about the prevalence and characteristics of VH education in family medicine clerkships nationally.[1-4] This study examines how VH education is integrated into family medicine clerkships, focusing on clerkship directors' (CDs') experiences, preferences, and perceived barriers. We hypothesized that gaps in VH education persist, highlighting an opportunity for standardized, scalable resources.

METHODS

Data were gathered and analyzed as part of the 2025 Council of Academic Family Medicine Educational Research Alliance (CERA) survey of family medicine CDs. The study sample included 174 family medicine clerkship directors in the United States and Canada. The CERA survey methodology has been described previously.[5] Survey questions assessed the prevalence of VH curricula, curricular elements, barriers/facilitators in implementation, and characteristics that could impact delivery of VH education. Data were collected from June 10, 2025 through July 11, 2025. The American Academy of Family Physicians Institutional Review Board approved the study in May 2025. We used descriptive statistics to summarize study variables. We used an independent *t* test with two-sided hypotheses, confirmed with a Mann-Whitney *U* test, to assess factors associated with the inclusion of a VH curriculum on the clerkship. Response choices ranged from strongly disagree to strongly agree (1–5 scale), with higher scores indicating greater agreement.

RESULTS

Of 174 eligible directors, a total of 100 family medicine CDs responded to the survey, and 93 were included in our analysis (after seven were withdrawn for incomplete responses). The overall response rate was 57.47% (100/174). Table 1 lists participant demographics.

Of the included CDs, 33% reported teaching VH in their clerkship, and approximately one-third reported adding these components after 2019. The majority of these clerkships reported using didactics and clinical experiences (45%), followed by didactics alone (19%), to teach and evaluate VH. The CDs were overall confident in their ability to address VH (M = 4.33 on Likert scale, SD = 0.65) and strongly endorsed the importance of teaching VH counseling in the clerkship curriculum (M = 4.38, SD = 0.69). Most respondents indicated that the ideal time to teach VH was in preclinical years (50%) followed by the family medicine clerkship (28%). When asked about the use of free online modules in teaching VH, the response was slightly positive (M = 3.50, SD = 1.10). Barriers to teaching VH were competing educational priorities (47%) and redundancy from other rotations (19%). Greater perceived importance of VH education among CDs was associated with inclusion of a VH curriculum in their clerkship (Table 2). When we analyzed whether other factors were associated with having a VH clerkship curriculum (ie, clerkship format [block/longitudinal], length, presence of regional campus or not, private/public, number of students per class, region), none were significant.

DISCUSSION

This national survey of family medicine clerkship directors demonstrated a meaningful gap between recognition of VH as an important clinical skill and its formal integration into the clerkship. Although CDs strongly endorsed the importance of teaching VH counseling and reported high confidence

TABLE 1. Demographics of Clerkship Directors and Clerkship Programs

Demographics of clerkship directors (*N* = 150)	n (%)
Geographic region	
New England (NH, MA, ME, VT, RI, or CT)	10 (6.7)
Middle Atlantic (NY, PA, or NJ)	24 (16.0)
South Atlantic (PR, FL, GA, SC, NC, VA, DC, WV, DE, or MD)	31 (20.7)
East South Central (KY, TN, MS, or AL)	8 (5.3)
East North Central (WI, MI, OH, IN, or IL)	22 (14.7)
West South Central (OK, AR, LA, or TX)	14 (9.3)
West North Central (ND, MN, SD, IA, NE, KS, or MO)	12 (8.0)
Mountain (MT, ID, WY, NV, UT, AZ, CO, or NM)	10 (6.7)
Pacific (WA, OR, CA, AK, or HI)	12 (8.0)
Canada	3 (2.0)
No response	4 (2.7)
Self-identified gender	
Female/woman	91 (60.7)
Male/man	51 (34.0)
Genderqueer/gender nonconforming	0 (0.0)
Nonbinary	0 (0.0)
Choose not to disclose	1 (0.7)
Self-described	7 (4.7)
Self-identified race or ethnicity[a]	
Hispanic/Latino/a/Spanish origin	9 (6.0)
American Indian/Alaska Native/Indigenous	1 (0.7)
Asian	23 (15.3)
Black/African American	6 (4.0)
Native Hawaiian/Pacific Islander	0 (0.0)
White	98 (65.3)
Middle Eastern/North African	2 (1.3)
Choose not to disclose	11 (7.3)
No response	8 (5.3)
Underrepresented in medicine	
Yes	15 (10.0)
No	97 (64.7)
Choose not to disclose	13 (8.7)
No response	25 (16.7)
Physician status	
Yes (132 MD, 11 DO)	143 (95.3)
No	0
No response	7 (4.7)
Demographics of family medicine clerkships (*N* = 98)	
Funding source	
Public	69
Private	29
Typical number of students in one class, mean	147.4
Family medicine or primary care clerkship is mandatory	
No	1
Yes	98
Year(s) of training when medical students participate in family medicine or primary care clerkship	

(*Continued*)

TABLE 1. Demographics of Clerkship Directors and Clerkship Programs (Continued)

Demographics of clerkship directors (N = 150)	n (%)
M1	2
M2	17
M3	95
M4	6

[a]Respondents could select all that apply for race/ethnicity.
Abbreviation: M, medical school year

TABLE 2. Clerkship Directors' Attitudes and Self-Confidence Regarding Vaccine Hesitancy, by Inclusion of Vaccine Hesitancy Curriculum in the Family Medicine Clerkship

Question	VH curriculum taught (N = 31) Mean (SD)	VH curriculum not taught (N = 63) Mean (SD)	P
Teaching students how to address vaccine hesitancy in their family medicine clerkship is important.	4.71 (0.46)	4.22 (0.73)	<0.001
I am confident in my ability to address vaccine hesitancy with my patients.	4.48 (0.51)	4.25 (0.69)	.105

Note. Values are mean (SD) on a 5-point Likert scale (1=strongly disagree, 5=strongly agree).
Abbreviations: SD, standard deviation; VH, vaccine hesitancy

in addressing VH themselves, only one-third of clerkships reported including structured VH education. Given declining vaccination rates, increasing vaccine misinformation, and the central role family physicians play in vaccine acceptance, this disconnect represents a missed opportunity to prepare future physicians with communication skills that have direct implications for patient care.[6,7]

Our findings align with prior literature demonstrating inconsistent integration of vaccine communication training across undergraduate medical education.[8] Educational interventions using role-play, motivational interviewing, and case-based discussion have shown to improve learner confidence and self-reported preparedness to address vaccine concerns.[1-4,9-11] However, most published interventions are specialty-specific, particularly in pediatrics, with limited data focused on family medicine clerkships.[1,2,9-11] Given its lifespan scope and emphasis on continuity, family medicine represents a uniquely appropriate setting for longitudinal vaccine communication training.

The modest but positive interest in free online modules suggests one practical strategy for overcoming the most reported barrier of competing curricular priorities. Because the majority of respondents thought that VH teaching should start during the preclinical years, evidence-based asynchronous modules could introduce tools such as presumptive language and motivational interviewing during that time. Then, students during their clerkships could reinforce these concepts by applying these VH tools in clinical practice. While the Society of Teachers of Family Medicine National Clerkship Curriculum emphasizes counseling related to health promotion and disease prevention,[12] it does not explicitly delineate VH counseling competencies. The development of shared educational resources, such as asynchronous modules or a clerkship toolkit for VH communication and counseling, also may help clerkships incorporate VH education while minimizing the impact of curricular time constraints. Evidence suggests that experiential learning opportunities, such as simulation, standardized patients, and supervised clinical encounters, enhance skill transfer more effectively than didactic instruction alone.[13] Combining brief online modules with observed structured clinical encounters, role playing, and flipped classroom with case-based curriculum could offer an opportunity to evaluate educational outcomes as demonstrated in previous studies.[1-4,9-11].

The second highest barrier to teaching about VH was concerns about duplication across rotations. Using the lens of competency-based education, communication skills need to be practiced over time in multiple settings because the skills are not perfected through a single educational encounter.[14] Intentional reinforcement of vaccine counseling across multiple clerkships may be an educational strength because this allows students to adapt their community strategies to different clinical scenarios, cultural contexts, and vaccine-related concerns.

Notably, approximately one-third of programs with VH curricula implemented these components after 2019, suggesting a temporal association with heightened national attention to vaccine misinformation during the COVID-19 pandemic. This finding is consistent with the development of several educational interventions focused on the COVID-19 vaccine related to communication, public trust, and misinformation.[4,8]

This study had several limitations. First, although the response rate (57.5%) was consistent with prior CERA surveys, nonresponse bias remains possible. CDs with stronger views about vaccine education may have been more or less likely to respond. Second, data were self-reported and may not reflect actual curricular content or instructional depth. Third, we did not assess specific curricular hours or assessment methods, limiting insight into variability among programs reporting VH inclusion.

CONCLUSIONS

Despite broad agreement among family medicine CDs that VH counseling is important, only one-third of clerkships formally integrate this content in their curriculum. Given the central role of family physicians in vaccine counseling across the lifespan, developing structured and standardized approaches to VH education is a timely opportunity. Evidence-based

VH curricula could be introduced in the preclinical years and reinforced through clinical opportunities to apply these strategies in ways that improve patient outcomes.

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