An e-mail based vaccine curriculum for pediatric residents improves self-reported knowledge

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BACKGROUND

- The World Health Organization recently listed vaccine hesitancy as one of the top 10 threats to global health.
- Vaccine hesitancy appears to be increasing resulting in the re-emergence of vaccine-preventable diseases (e.g., measles, polio).
- A pediatrician's recommendation is a strong predictor of whether a parent decides to vaccinate, yet pediatric residents are rarely adequately trained to educate families on information regarding vaccines.
- This highlights the need for improved evidence-based education to empower resident-led vaccine advocacy when approaching vaccine-hesitant families.

OBJECTIVES

Among pediatric residents in a large pediatric training program:

1. To evaluate voluntary participation in an e-mail-based vaccine curriculum.
2. To assess perceived change in a) vaccine knowledge, b) self-efficacy in vaccine conversations with vaccine-hesitant parents.
3. To assess perspectives on the format and effectiveness of an e-mail-based curriculum.

ReVaCC
Resident Vaccine Curriculum Committee

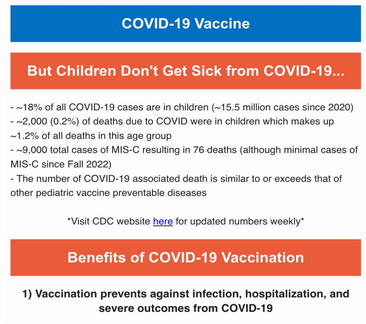
METHODS

This was an evaluation of a resident-led e-mail-based vaccine curriculum, with e-mails sent weekly to all pediatric residents from 2017 to the present. E-mails contained vaccine-related content such as vaccine schedules, side effects, and common parental concerns. The content was updated yearly.

Educational e-mails by academic year

Year	# e-mails
17-18	45
18-19	34
19-20	36
20-21	25
21-22	30

Example of a weekly e-mail



E-mail opening rates were monitored to assess the usage of the curriculum.

Study Population: All-level pediatric residents who completed surveys before and after the educational program during each academic year through 2022; residents that voluntarily participated in a group interview.

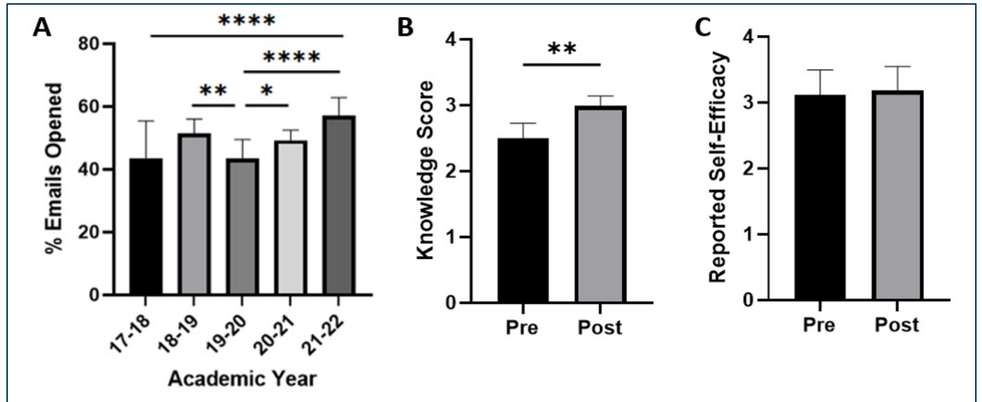
Survey Design and Administration: Pre- and post-surveys sent via e-mail, 2 total surveys per year. Residents were asked to use a 1-5 Likert scale (1=strongly disagree, 5=strongly agree) to rate knowledge and comfort surrounding pediatric vaccine education pre- and post-e-mail curriculum. Qualitative data were obtained during a focus group among 8 residents in 2018.

Analysis: ANOVA was used to compare mean opening rates and t-tests to compare resident knowledge and comfort before and after the vaccine curriculum was completed.

RESULTS

- Residents in the focus group either read some or all the e-mails and felt that it was an overall effective educational modality.
- E-mail topics were said to help improve communication with families by providing credible facts to build upon for parental education and reinforcing previously learned information.
- Residents felt that an e-mail curriculum was a reliable option for vaccine education; however, residents noted that many individuals did not open their e-mails consistently.

Resident reported comfort with vaccine knowledge increased by 20% after the curriculum.



Resident vaccine curriculum opening rates and self-reported confidence scores for vaccine knowledge and approaching vaccine hesitancy. A) Percentage of e-mails opened by residents during each academic year. B) Self-reported confidence with vaccine information increased following the vaccine curriculum. C) Self-efficacy in approaching vaccine-hesitant families was unchanged. *p<0.05; **p<0.01; ****p<0.001.

CONCLUSIONS

- There was a high resident participation rate in this e-mail-based curriculum, particularly after the onset of the COVID-19 pandemic, suggesting a potential increase in interest surrounding vaccines as a result of the pandemic.
- The implementation of our vaccine e-mail curriculum is associated with increased resident-reported vaccine knowledge but not with increased reported self-efficacy in addressing vaccine-hesitant families.
- It may not be possible to capture everyone with one modality; however, e-mailing is a simple, scalable, inexpensive option that can adjunct educational modalities already in place.
- Further evaluation of e-mail-based vaccine curricula is necessary to improve resident comfort with addressing parental vaccine hesitancy. Integration of an e-mail-based curriculum may improve resident education across multiple topics and serves as a flexible tool to address changing issues.

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