Vaccine Curriculum to Engage Vaccine-Hesitant Families: Didactics and Communication Techniques With Simulated Patient Encounter

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Abstract

Introduction: Addressing vaccine hesitancy and the antivaccination movement has become part of pediatric practice, particularly in the context of the reemergence of previously eradicated vaccine-preventable illnesses. Oftentimes, trainees do not feel comfortable speaking to patients and families who are hesitant to vaccinate or wish to follow alternative schedules. This curriculum was developed in order to address this identified gap in pediatric trainee education.

Methods: The curriculum begins with a simulated patient encounter with a vaccine-hesitant parent. The trainees undergo a series of lectures on vaccine-preventable illnesses, vaccine safety and administration, personal experience with a family affected by vaccine-preventable illnesses, and communication techniques with role-play opportunities. Finally, trainees undergo the simulated patient encounter again. In reviewing our intervention, we compared pre- and postcurriculum assessments to see how residents perceived their experience and comfort. Simulated patient encounters were graded on a Likert scale by experienced faculty.

Results: We administered our curriculum to 26 pediatric interns. Our results showed that residents improved in self-competence and confidence in addressing vaccine concerns with vaccine-hesitant families. Following the curriculum, residents were all willing to engage vaccine-hesitant families when the opportunity arose. Furthermore, based on graded simulated patient encounters, our residents improved in multiple aspects of their knowledge, comfort, and counseling techniques.

Discussion: Our study demonstrated that providing this educational curriculum positively influenced trainees’ engagement in conversation with vaccine-hesitant families.

Keywords

Communication, Vaccination, Resident, Pediatric, Trainee, Vaccine Hesitancy, CASE Method

Educational Objectives

Following this curriculum, the learner will be able to:

1. Recognize and describe vaccine-preventable illnesses.
2. Summarize the most widely propagated concerns associated with vaccine administration and safety.
3. Communicate using the CASE (collaborate, about me, science, explain/advise) method to encourage families to vaccinate their children.
4. Develop standard vaccine training for residents or other trainees.

Introduction

In recent years, there have been an alarming number of outbreaks of vaccine-preventable illnesses (VPDs). This is likely due in large part to disease spreading to unvaccinated, susceptible patients. Targeting vaccine-hesitant families remains a priority to help decrease the number of susceptible patients. In the current age of vaccine hesitancy, parents receive information from various sources. It is important for parents to receive credible and evidence-based information from their pediatrician or family physician to
inform them of the risks and benefits associated with childhood vaccination. Studies have shown a positive influence of physicians on their patients and families in regard to vaccinating children. Parents across a range of vaccine beliefs generally express a high level of trust in their pediatrician’s medical advice. Therefore, it is important that training physicians are educated on communication strategies that address both risks and benefits of vaccination to help gain trust among their patients’ families.

In terms of interventions that have been attempted or implemented, studies have been performed using reminder/recall systems, parent education, community education, and provider-based interventions. There is no consensus on the best intervention for vaccine-hesitant parents. Recently published was a randomized trial of clinicians who were randomized to be instructed in a communication model called ask, acknowledge, advise, with which to frame conversations about vaccines. The primary outcome was the attitudes towards childhood vaccines of mothers at 6 months postpartum. The authors found that their physician-targeted intervention did not significantly decrease vaccine hesitancy; however, their study was limited by the inability to track how their intervention reached the physician or if the intervention was translated to the postpartum mother.

The American Academy of Pediatrics (AAP) has provided web-based review for counseling patients. The approach utilizes the CASE (collaborate, about me, science, explain/advice) method the Centers for Disease Control (CDC) employs as well. The AAP resource is valuable and directed to practicing pediatricians, and this study, in effect, translates this resource to be used among pediatric trainees. Our study developed several approaches and topics that have the highest yield for a training pediatrician. We felt that personal experience, as well as traditional didactics around vaccine topics, was necessary for a foundation in vaccine education. Additionally, our intervention targeted a training population so that their future experiences could build upon their efficacy in providing vaccine education. Regardless of vaccination status, one should be aware that residents and trainees are receiving a standard instruction in vaccine-preventable diseases and vaccine safety and administration.

**Methods**

As a baseline measure of intern comfort and perception of vaccine hesitancy, we facilitated a simulated patient encounter involving one facilitator and one trainee. A case outline (Appendix A) provided an overview of the simulated patient encounter. The facilitator, acting as a vaccine-hesitant parent, was given a list of questions and concerns (Appendix B) to bring up at a well-child examination that the trainee was performing using the case outline (Appendix C). Each interview took approximately 10 to 15 minutes. We chose to video each encounter in order to allow our evaluators to review it at a later time. This may be accomplished with mobile phone devices or digital cameras. After each encounter, a self-assessment was given to the trainee to grade his/her comfort with this situation, comfort with speaking to vaccine-hesitant families in general, and whether he/she engaged in this type of conversation with families or not.

Each intern then underwent a four-part curriculum that was a combination of lectures and small-group case-based discussions. The curriculum included PowerPoint presentation about VPIs and how to recognize these (Appendix E), vaccine safety and administration myths (Appendix F), personal experience from a family who lost a child to VPI (Appendix G), and a CASE method (Appendix H) and role-play scenarios (Appendix I). Each session required approximately 1 hour of didactic time. A directory of additional resources is also included (Appendix J).

The four-part curriculum is a combination of lectures and small-group case-based discussions. Speaker’s notes are provided at the bottom of the slides, and a more detailed guide for each component is also included. It is strongly recommended that speakers familiarize themselves with the content contained prior to presenting the slides. The slides are left in PowerPoint format so that the speaker can modify as needed to include local content such as rates of vaccination or vaccine-preventable disease.

Lastly, interns underwent a second simulated patient encounter with a facilitator acting as a vaccine-hesitant parent. Self-assessment was repeated again to grade their comfort and competency in having these difficult conversations. These encounters were reviewed by designated evaluators and scored.
against a Likert scoring rubric (Appendix D; we have chosen to standardize the scoring system to be a checklist for ease of application). Verbal or written feedback can be provided to each learner with the standardized feedback tool. Completion of this evaluation typically takes 5 to 10 minutes per video.

Results

This curriculum was implemented at our pediatric residency program during the 2013-2014 academic year. All incoming pediatric residency interns were asked to participate. Approximately 62% of interns (26) completed the full curriculum including the pre- and postpatient encounters. To accommodate scheduling and availability of interns, curriculum presentations were videotaped and archived to be viewed asynchronously. The curriculum was delivered over approximately 6 months.

We found that participating in the curriculum improved resident self-perceived confidence and competence in speaking to vaccine-hesitant families. Postcurriculum, 100% of interns engaged families in vaccination conversations, an improvement from 80% precurriculum. Furthermore, pre- and postcurriculum simulated encounter evaluations showed resident improvement in seven of eight domains, which were using open-ended questions, listening and eliciting concerns, counseling about risks, and their comfort, knowledge, and ability to explain about vaccines. These were based on our Likert scale. There was no significant difference among pre- and postcurriculum encounters of intern counseling risks associated with nonvaccination.

Discussion

Our work sought to provide a distinct, formal curriculum addressing communication and knowledge around vaccines in order to better address vaccine-hesitant parents. There have been toolkits, simulated patient situations, or team-based learning methods applied to teaching vaccines or preventative care noted on MedEdPORTAL. Similar to other publications, our study has provided an intervention seeking to change the learner’s own perceptions and experience in vaccine counseling. Inherent to these curriculums was helping the learner obtain feedback on a dynamic and sensitive conversation. These publications chose to use didactics and role-play as well. There has also been physician-directed intervention employing a communication technique similar to the CASE method used in our study. This study was limited in its ability to track to what degree its physicians utilized the intervention. Here, we were able to track interns’ performance in a simulated patient encounter before and after the curriculum.

The design of our curriculum incorporated different modalities in education with simulated patient encounters such as didactics, personal story experience, and role-play in a workshop setting. Our intervention addressed childhood vaccines and preventing their associated diseases as opposed to other preventative care. We utilized the CASE method, which has not been incorporated in other vaccine education resources on MedEdPORTAL. This well-used tool from the CDC has been espoused by the AAP and has been helpful in communicating to vaccine-hesitant families. Our study similarly looked at the learners’ perceptions of vaccine administration and counseling but was able to show improvement in self-perceived competence and confidence in abilities following the curriculum. Unlike prior studies, where feedback was not given against a standard rubric, we used a Likert scale, thereby standardizing our outcomes.

In our review of literature, there has not been a clearly identified method of encouraging vaccine administration in vaccine-hesitant families. We know anecdotally that vaccine conversations ideally should occur at each encounter both to assess from a clinical standpoint and to provide ongoing, open communication about vaccine importance. This curriculum helped provide awareness to trainees about vaccine awareness and empowered them to have these conversations.

There is little consensus on effective communication with regard to vaccine hesitancy and even less data and research on improving trainee education in this domain. This curriculum addresses aspects of that communication discrepancy. Although there were improved vaccine rates in 24-month-olds seen in our ambulatory practices during the time of this intervention (2012-2014), parental attitudes around vaccine hesitance were not directly queried. In the future, this component will be added to further validate the
efficacy of curriculum. It is also essential to continue to evaluate the effectiveness of this curriculum longitudinally over the course of residency to assess skills, possibly with follow-up standardized encounters or real patient encounters. Self-assessment and feedback would be useful to provide in these encounters. This evaluation tool may be adapted and incorporated into formal resident evaluation. The curriculum has been used in a categorical pediatric residency but could be expanded to family medicine and obstetrics/gynecology residents, who are the most likely to discuss childhood vaccinations. We will be incorporating the curriculum into a pediatric boot camp for senior medical students in the future, in order to capture another training population.

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References

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