Using E-learning Modules To Educate Pediatric Residents On Critical Topics In Allergy And Immunology.

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Abstract #735

INTRODUCTION

• There has been an increase in the prevalence of allergic and immunologic (AI) disease.
• There is a lack of knowledge among primary care physicians regarding diagnosing and caring for patients with allergic and immunologic disease.
• ACGME (Accreditation Council for Graduate Medical Education) has no specific requirements or components of core curriculum that addresses AI for primary care.
• Studies suggest that an interactive online curriculum that have a focus on improving patient care is an effective way to improve the knowledge gap and increase confidence.

OBJECTIVE

To develop, implement, and evaluate the efficacy of a pilot e-learning curriculum addressing fundamental primary care topics related to allergy and immunology (AI) for pediatric and internal medicine/pediatrics residents.

METHODS

• We utilized David Kern’s six step approach for curriculum development for medical education to develop online modules through Articulate (an e-learning software).
• Two modules were developed: food allergy in the primary care office and primary immunodeficiency disorders in the primary care office.
• Modules were offered to 76 residents over the course of 4 months (July, August, December, January).
• The modules were housed on an e-learning platform for Nationwide Children’s Hospital (NCH) employees.
• Although the study was aimed at resident education, non-resident NCH employees completed the modules.

RESULTS

76 residents, were invited to complete the modules:
• 19 residents completed the food allergy module (25%)
• 13 residents completed the primary immunodeficiency disorders module (17%)

FIG 1. The module displays images and descriptions to discuss food allergy testing.

Below are the 3 main methods of food allergy testing:

- Skin-prick testing
- Intradermal testing
- RAST testing

FIG 2. The module provides brief, high yield points about IgE mediated food allergies

FIG 3. The module provides interactive ways to learn including sorting activities.

FIG 4. The modules include cases with scenarios that primary care physicians may face regarding food allergy concerns.

FIG 5. Module Pre- and Post- test scores.

<table>
<thead>
<tr>
<th>Food Allergy</th>
<th>Primary Immunodeficiency Disorder</th>
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<tbody>
<tr>
<td>% Residents</td>
<td>% Residents</td>
</tr>
<tr>
<td>Pre-Test</td>
<td>Post-Test</td>
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<tr>
<td>85%</td>
<td>85%</td>
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<tr>
<td>90%</td>
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FIG 6. Resident satisfaction with articulate learning modules

<table>
<thead>
<tr>
<th># of Responses (%)</th>
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<tr>
<td>0%</td>
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Feedback Survey: Resident Perspective
• 8 residents completed the feedback survey for the food allergy module
• 15 residents completed the feedback survey for the primary immunodeficiency disorders module
• All residents agree that knowledge regarding AI is important for primary care physicians
• 39% of residents believe that they are well trained to identify AI diagnoses seen in the primary care setting
• 35% believe they are well trained to manage AI diagnoses seen in the primary care setting
• 56% believe they are well trained to refer AI diagnoses seen in the primary care setting

Feedback Survey: Non-Resident Perspective
• 12 non-residents completed the feedback survey for the food allergy module
• 4 non-residents completed the feedback survey for the primary immunodeficiency disorders module
• Based on a 5 point Likert scale for satisfaction, majority of non-residents (59%) were satisfied with articulate as a tool for learning AI material
• 53% of non-residents preferred online self-learning modules for learning AI topics.

CONCLUSIONS

• A brief, focused e-learning curriculum is feasible and improved participant knowledge on fundamental AI concepts.
• These modules were also utilized by non-resident adult learners who were satisfied with e-learning modules as a tool for learning allergy and immunology topics related to primary care.

REFERENCES