



Letter

Allergy academy: a novel program for allergy nursing and clinic staff education

Nurses and staff working in an allergy-immunology clinic have an extensive and specialized skill set that includes allergy testing, immunotherapy, food challenges, and other procedures. Many of these skills are not typically taught as part of the standard nursing curriculum. In addition, the knowledge base in allergy-immunology is fairly specific and unique. Patient education is crucial in the care of children with atopic conditions, and nurses are the key personnel to provide this education to those seen in the clinic. There are many strategies to ensure that the staff working in an allergy-immunology office has the necessary expertise, but many learn on the job. This method may or may not suit the needs of all, does not ensure that all topics are discussed with all staff, and does not guarantee that all staff members have the needed proficiency. To make sure that our staff has the required abilities, we instituted a novel educational program for the staff at the allergy-immunology clinic at Emory University and Children's Healthcare of Atlanta.

Allergy Academy is an organized program that contains didactic lectures, workshops, and small group discussions aimed at educating the staff. A comprehensive curriculum was developed with input from medical professionals, current allergy staff, and nursing leadership. The course outline is given in Table 1. It is composed of 4 modules that address all the major topics in allergy and immunology. The program was taught by the allergy-immunology faculty (3 board-certified allergists-immunologists and 1 nurse practitioner specializing in allergy and immunology). The program was held during 4 days and took approximately 28 hours to complete. The program was designed so that the knowledge base gained during the didactic lectures was applied in practical workshops that followed.

Ten individuals (1 nurse practitioner, 5 registered nurses, 2 licensed practical nurses, and 2 medical assistants) from 2 allergy-immunology clinics (Emory Children's Center and Hughes Spalding Asthma Center) attended the 4-day Allergy Academy and completed the 4 modules. The primary outcome was learning as measured by pretests and posttests. We also assessed acquisition of practical skills by return demonstration, a mock anaphylaxis scenario, and the percentage of the class who received certification.

We used repeated-measures analysis of variance to evaluate changes in testing scores (before and after each learning module). There was significant improvement in the mean (SD) pretest and posttest scores for the entire program (56% [13%] vs 75% [30%]; $P = .02$; mean change, 19%), module 1 (54% [0.13%] vs 71% [13%]; $P = .004$; mean [SD] change, 19% [15%]), module 2 (50% [6%] vs 66%

[15%]; $P = .03$; mean [SD] change, 19% [15%]), module 3 (72% [10%] vs 80% [11%]; $P = .04$; mean [SD] change, 8% [8%]), and module 4 (49% [21%] vs 83% [15%]; $P = .006$; mean [SD] change, 32% [17%]). Everyone (100%) was successful in return demonstrations for the required competencies and completing the mock anaphylaxis exercise. All received certification for skin prick testing, intradermal injections, immunotherapy injections, patch testing, food challenges, asthma/food allergy education, wet wrapping, food challenges, vaccinations, and delayed hypersensitivity testing.

We were successful in developing and executing a comprehensive program, Allergy Academy, to facilitate the education of the staff of our allergy-immunology clinic. The data demonstrate that all participants benefited from the experience and acquired additional knowledge. Programs such as Allergy Academy can address the specific and unique needs of an allergy-immunology clinic. Educational programs have been used to help improve patient outcomes in other chronic illnesses, such as asthma¹ and anaphylaxis.² In addition, interdisciplinary programs such as Allergy Academy can improve collaboration between physicians and nurses, which has been shown to increase job satisfaction.³ Future directions for Allergy Academy include continuation of the program on a yearly basis, use of additional valid measures of learning (such as the Joint Council of Allergy, Asthma, and Immunology examination on extract preparation), assessment of retention of knowledge, and expansion of the reach of the program to other neighboring allergy-immunology practices.

Karen A. DeMuth, BSN, MD

Lisa Kobrynski, MD, MPH

Morton Galina, MD

J. Shannon Chimento, MSN, FNP-C

Janet Shaw, RN, MBA, NE-BC

Emory University School of Medicine

Atlanta, Georgia

kdemuth@emory.edu

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Table 1
Allergy academy program outline

Module No.	Topic	Didactic	Workshops/small group(s)	Evaluation
1	Allergic rhinitis	Title: The basics of allergic rhinitis Length: 15 min Description: During this session participants learned the basic pathophysiology of allergic rhinitis, common triggers, and current medical management. Title: What are aeroallergens and how do you avoid them? Length: 15 min Description: During this session participants learned about common aeroallergens and where/when they are found. Avoidance measures will be discussed, and the importance of avoidance will be emphasized.	Title: How to skin test Length: 30 min Discussion: During this session individuals had an opportunity to practice performing skin prick tests using the Multi-test, Multi-test II, and Duotip techniques. They also learned how to do an intradermal injection. Venom testing and drug testing was also demonstrated and practiced. Title: Immunotherapy 101 Length: 60 min Discussion: During this session participants learned about giving immunotherapy injections. Participants had an opportunity to practice safely administering the correct dose and concentration of immunotherapy.	Knowledge from didactic lectures: Pretests–posttests. Quiz on knowledge of dilutions. Skills from workshops: Return demonstration of proficiency in skin testing and mixing extracts.
2	Asthma	Title: The basics of asthma Length: 30 min Description: Basic information on the epidemiology, pathophysiology, and management of asthma was discussed. After the session participants had an appreciation of the importance of asthma as a chronic illness in children and an understanding of the current management of this disorder.	Title: Asthma action plan basics Length: 15 min Description: At the end of this session participants were able to write and discuss how to follow a basic asthma action plan. Title: How to take inhaled medicines Length: 15 min Description: Proper inhaler technique with both aerochamber and mask/space was demonstrated. Participants had an opportunity to practice demonstrating and teaching proper technique and performed a return demonstration.	Knowledge from didactic lectures: Pretests–posttests Skills from workshops: Return demonstration of spacer and nebulizer use.
2	Atopic dermatitis	Title: The basics of atopic dermatitis Length: 30 min Description: During this session basic information about atopic dermatitis was discussed, including current information on the barrier dysfunction of atopic dermatitis, triggers for atopic dermatitis, and strategies for management of atopic dermatitis.	Title: Wet wraps and occlusive dressings Description: During this session proper technique for wet wraps and occlusive dressings was demonstrated and participants had an opportunity to practice application of wet wraps and occlusive dressings.	Knowledge from didactic lectures: Pretest–posttests Skills from workshops: Return demonstration of wet wrapping and occlusive dressings.
3	Food allergy	Title: The basics of food allergy Length: 30 min Description: Current information on the epidemiology, evaluation, and management of food allergy was discussed. Title: How to recognize and manage anaphylaxis Length: 30 min Description: The common signs and symptoms of anaphylaxis and medications used to treat this life-threatening condition were discussed.	Title: Atopy patch testing Length: 30 min Description: During this session participants were taught to apply and read atopy patch testing during a brief didactic session followed by practice applying and reading the patches. Title: Food challenges Length: 15 min Description: Participants were given a demonstration on the practical aspects of open graded food challenges followed by hands-on practice measuring and giving doses, and monitoring. Title: Mock anaphylaxis Length: 30 min Description: During this interactive session, participants were provided with a mock case of anaphylaxis. They were asked to identify the symptoms of anaphylaxis, management strategies, and demonstrate proper technique of administration of the epinephrine autoinjector.	Knowledge from didactic lectures: Pretests–posttests Skills from workshops: Demonstrate ability to measure and administer a dose of food as in a food challenge, demonstrate ability to use an epinephrine autoinjector, successfully identify and manage a mock anaphylaxis situation.
4	Immunology	Title: The basics of immunodeficiency Length: 30 min Description: The common types of immunodeficiencies were discussed, including common management strategies. The signs and symptoms of infections and the common types of infections these patients present with were also highlighted. Title: The nuts and bolts of immunoglobulin replacement (IVIg and SCIg) Length: 30 min Description: The types of immunoglobulin replacement, side effects of immunoglobulin replacement, and how to work with immunoglobulin orders were discussed	Title: Giving vaccinations Length: 15 min Description: The session was composed of a brief didactic on and demonstration of proper technique of vaccine administration. Participants then were given an opportunity to practice vaccine administration. Title: Delayed hypersensitivity testing Length: 15 min Description: This workshop consisted of a brief discussion and demonstration of delayed hypersensitivity testing. This was followed by practical application and return demonstration.	Knowledge from didactic lectures: Pretests–posttests Skills from workshops: Return demonstration of vaccination and delayed hypersensitivity testing.

Table 1
Continued

Module No.	Topic	Didactic	Workshops/small group(s)	Evaluation
4	Clinical operations	Title: How to run an allergy office and clinic Length: 30 min Description: The common operational procedures in the allergy-immunology clinic, including managing telephone calls, discharge instructions, medical record management, laboratory/testing follow-up, and prior authorizations were discussed.	Small Group Title: Operational problem solving session Length: 15 min Description: This is an opportunity for the allergy-immunology staff to discuss current operational processes and to brainstorm for solutions.	