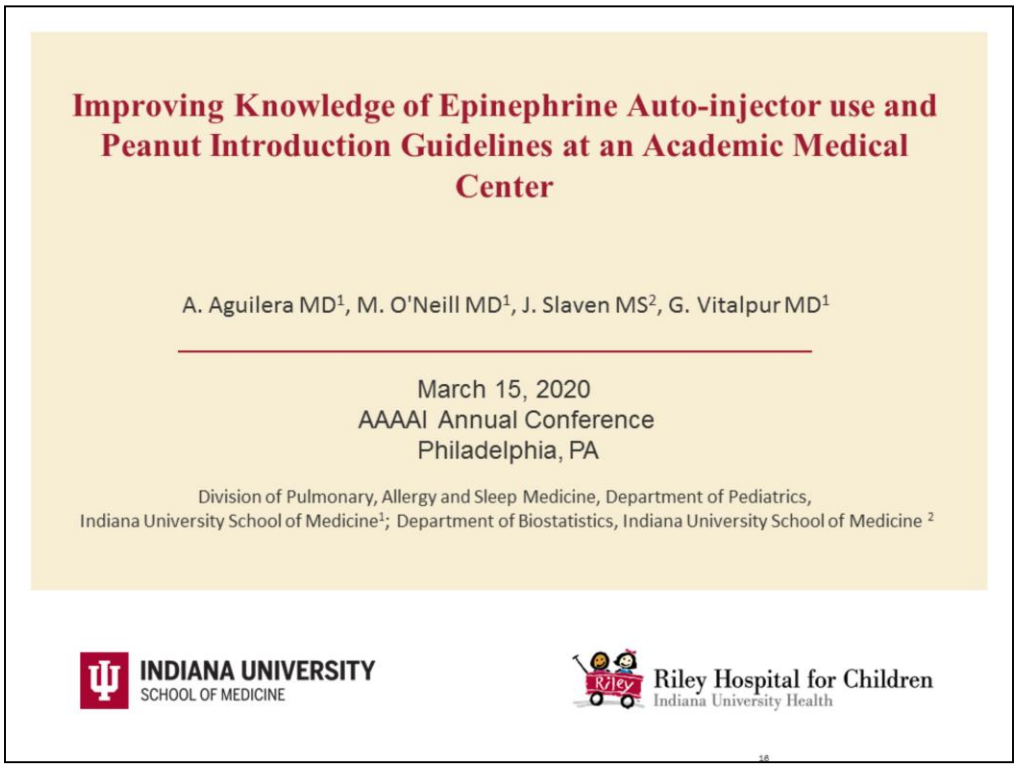

Good afternoon, I am Andrea Aguilera. I am a pediatric chief resident as Riley Children's Hospital in Indianapolis and I will be speaking to you about a quality improvement project that I have been working on for the past two years to improve resident knowledge of epinephrine autoinjector use and peanut introduction guidelines

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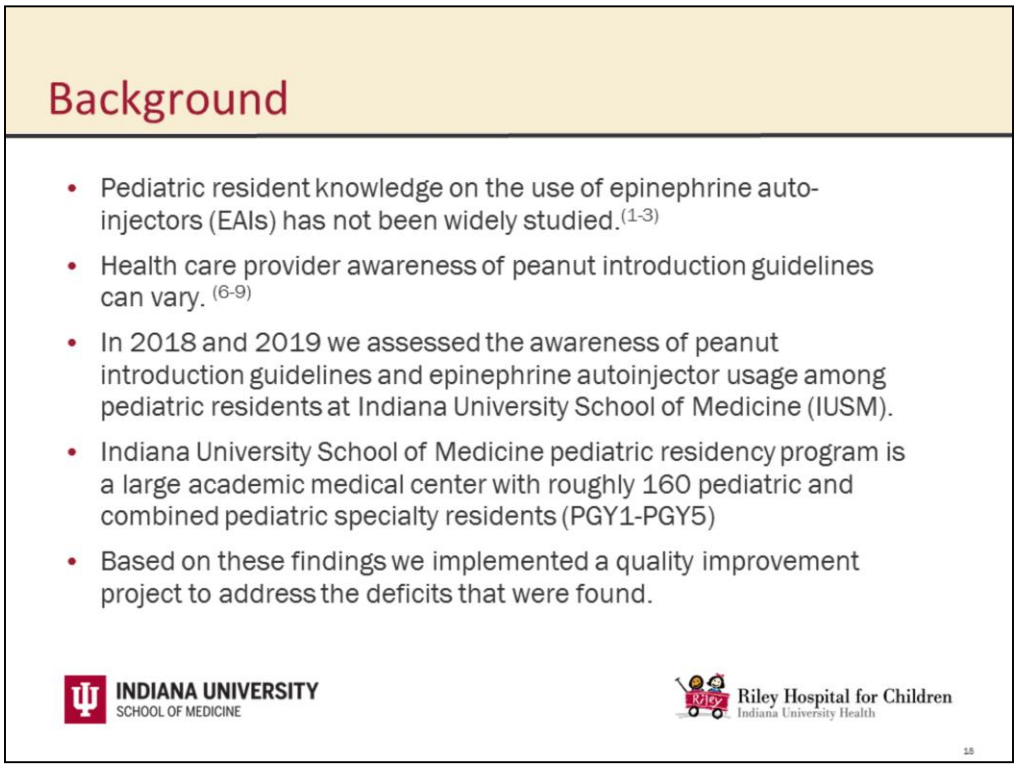
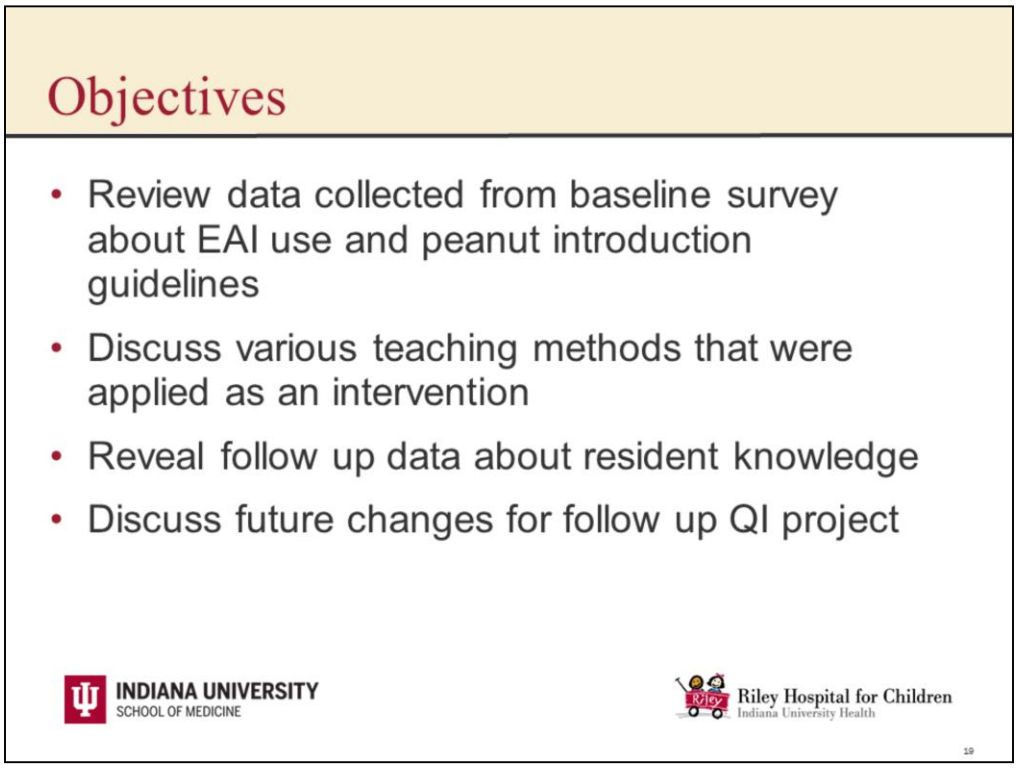
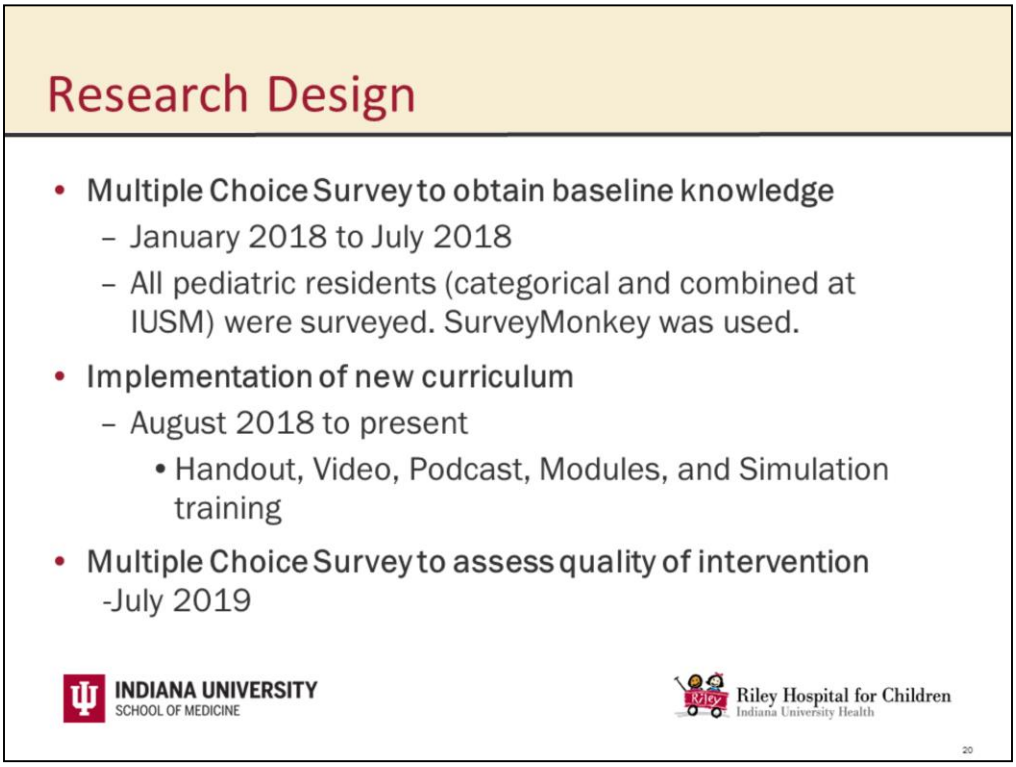
This is Riley, where I have spent the past 4 years.



Pediatric resident knowledge on the use of epinephrine auto-injectors (EAIs) has not been widely studied and provider knowledge of peanut introduction guidelines can vary. Therefore in 2018 and 2019 we assessed the awareness of peanut introduction guidelines and epinephrine autoinjector usage among pediatric residents at Indiana University School of Medicine (IUSM), a program with roughly 160 peds residents. Based on these findings we implemented a quality improvement project to address the deficits that were found.



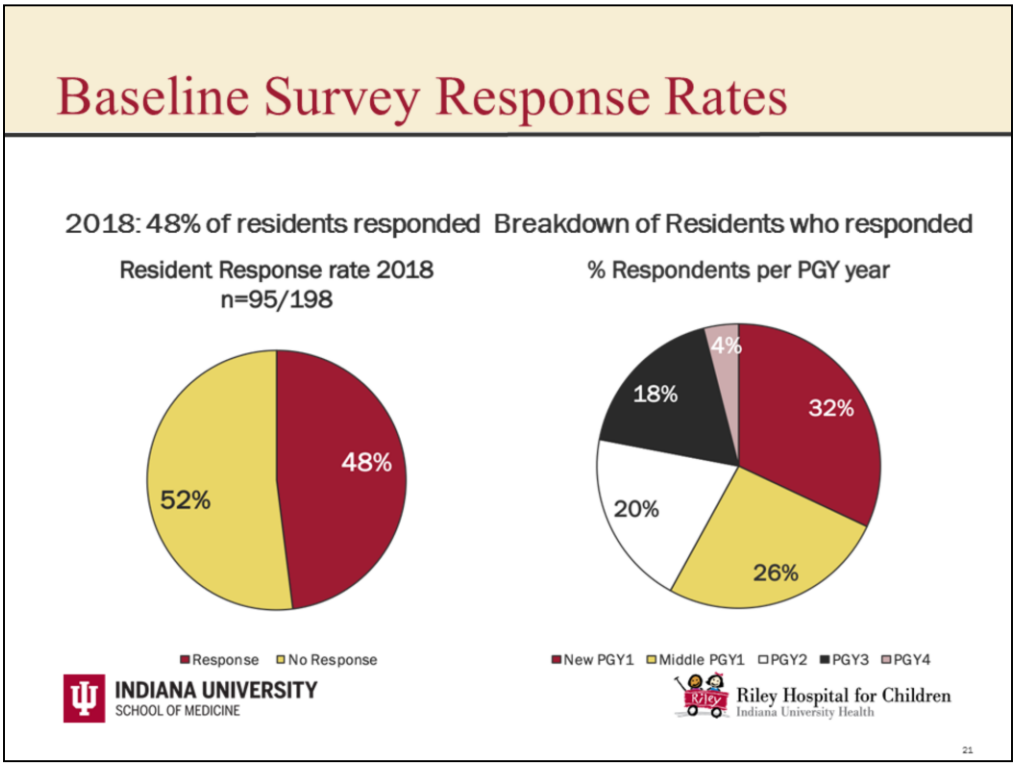
Objective of discussion today will be to..



For our research design we sent a multiple choice survey to obtain baseline knowledge from residents from January 2018 to July 2018. All pediatric residents were surveyed.

We then implemented a new curriculum in August of 2018. This curriculum included handouts, videos, podcasts, modules, and simulation training.

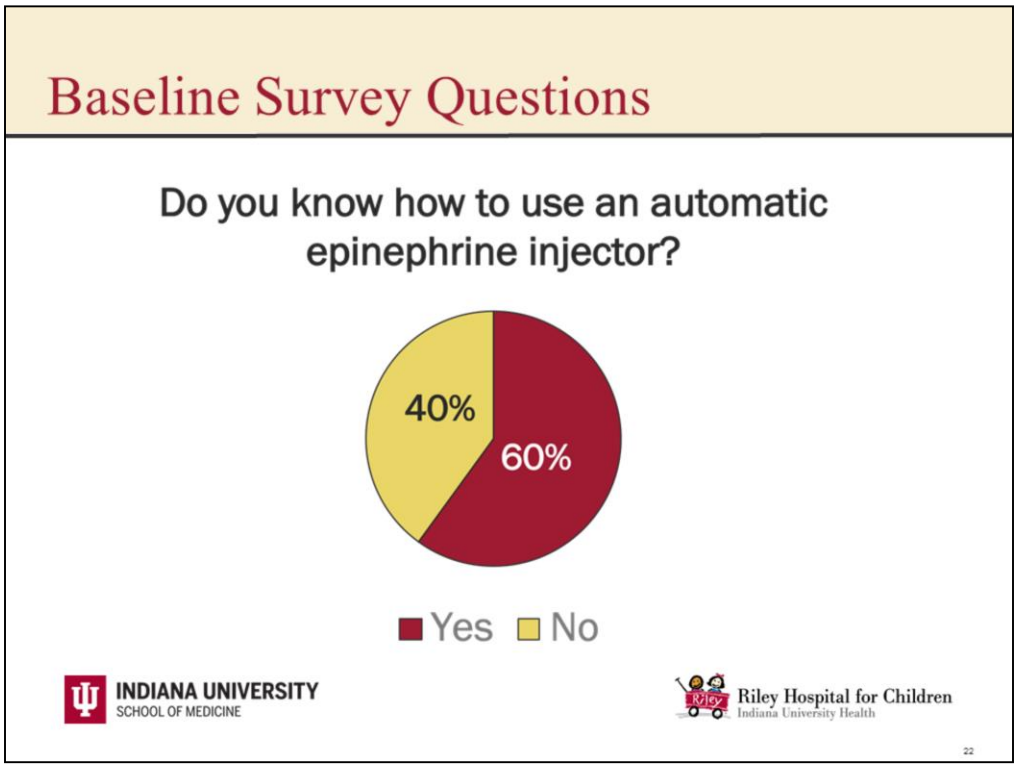
A follow up survey was sent in July 2019 to assess the quality of these interventions.



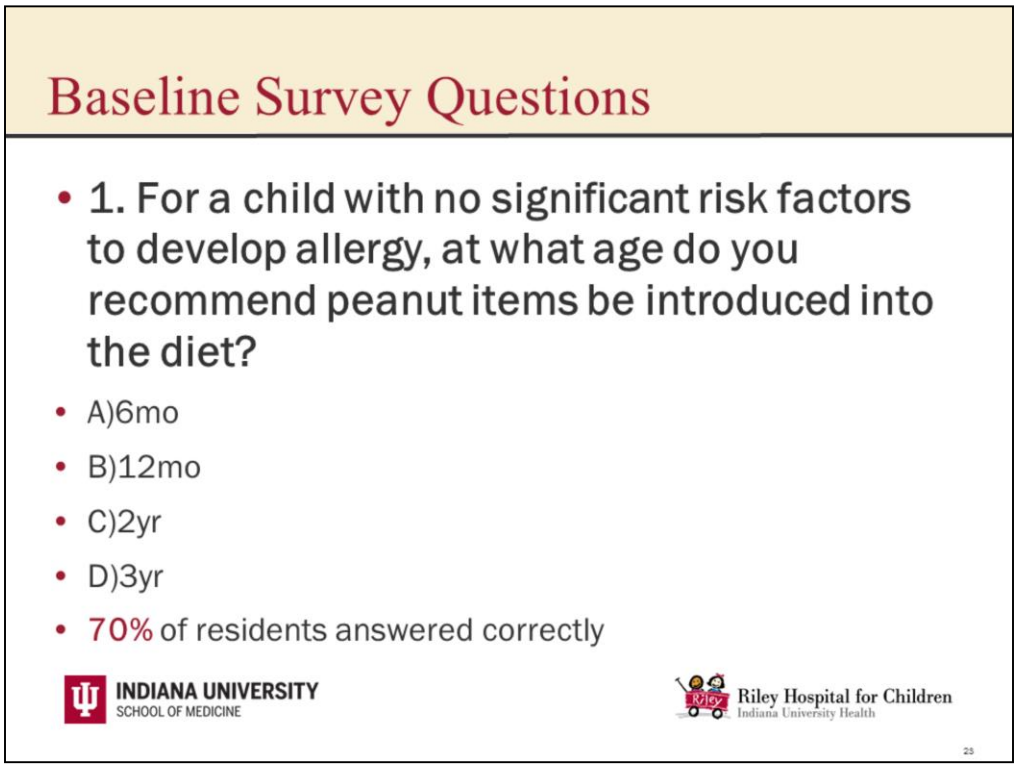
In 2018, 48% of residents responded to the survey. The breakdown by PGY year is shown to the right. Out of the respondents you can see majority were interns and 2nd year residents, however 40% of residents from each individual class year were collected in data.

It is understandable that there were fewer PGY4 and 5s as those residents are only combined program residents and therefore start with 26 fewer.

new PGY1 [30/46;65%]; middle PGY1 [25/45; 56%]; PGY2 [19/44; 43%]; PGY3 [17/43; 40%]; PGY4+ [4/20; 20%]).



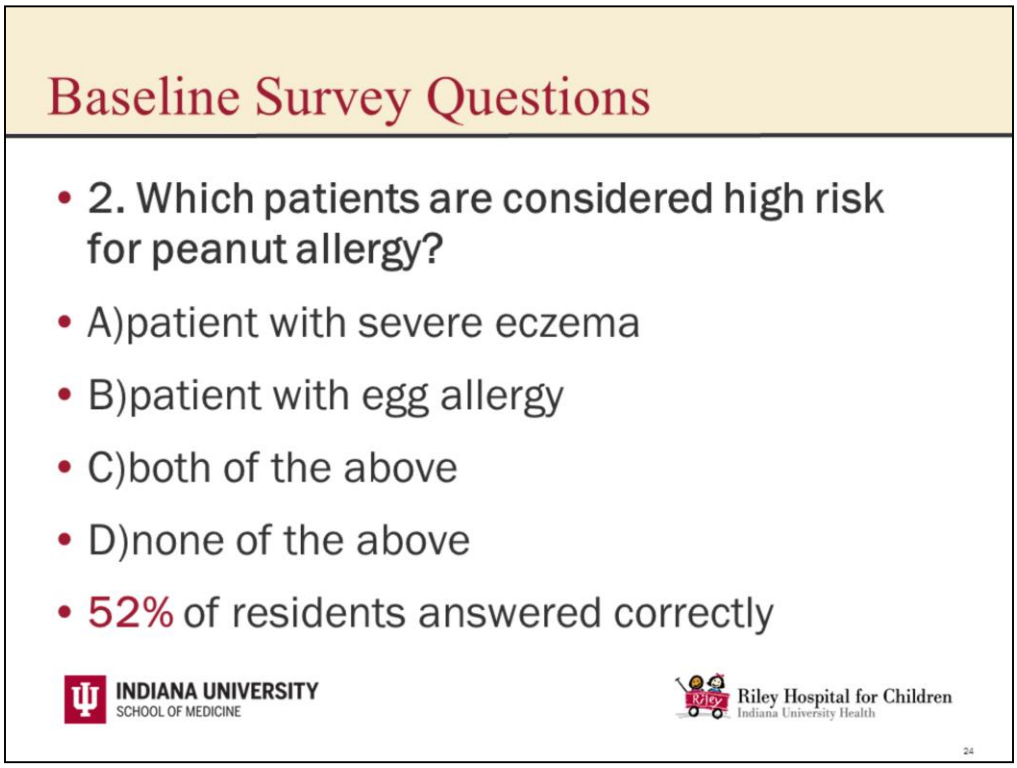
40% of residents reported they did not know how to use an epipen with no significant difference among class years responses. N=38



The first question was :

70% answered correctly.

A)6 mo


Baseline Survey Questions
• 2. Which patients are considered high risk for peanut allergy?
• A)patient with severe eczema
• B)patient with egg allergy
• C)both of the above
• D)none of the above
• 52% of residents answered correctly
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C

Baseline Survey Questions

- 3. How do you first screen peanut allergy in an at-risk patient?
- A) Obtain a panel of serum IgE levels to common food allergens (eggs, peanuts, tree nuts, wheat, soy, shellfish.)
- B) Obtain serum IgE level for peanut allergen in clinic
- C) Refer to an allergist for skin prick testing
- D)B or C
- 49% of residents answered correctly

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Baseline Survey Questions

- 4. True or False: Early exposure to peanuts in patients with a high risk for peanut allergy (who have been screened appropriately) can prevent the development of peanut allergy in some patients.
- 87% of residents answered correctly

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Baseline Survey Questions

- 5. How comfortable do you feel explaining to parents how to introduce peanut products to infants?
- 53% of residents were comfortable advising families on peanut introduction

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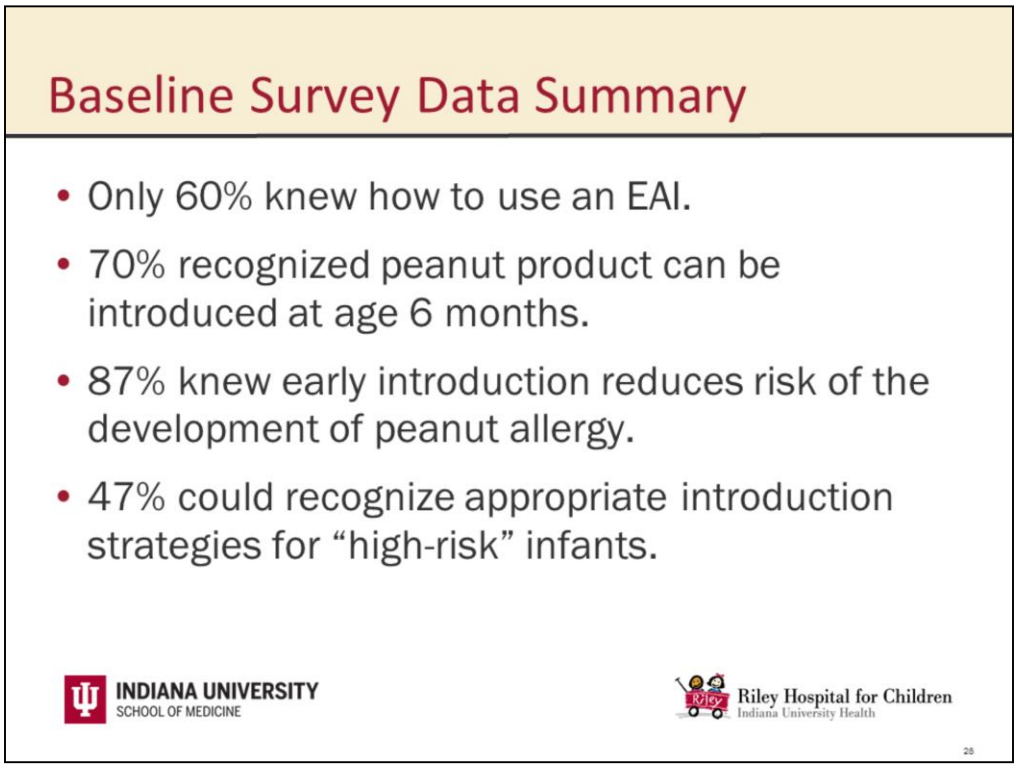

In summary, only 60% of residents knew how to use an epinephrine autoinjector. 70% recognized peanut product could be introduced at age 6 mo ; 87% knew early introduction reduces risk of development of peanut allergy, however only 47% recognized high risk infants.

Educational Tools

- Handout

Infant Criteria	Recommendations	Earliest Age of Peanut Introduction
Severe eczema, egg allergy, or both	Strongly consider evaluation with peanut-specific IgE and/or skin prick test and, if necessary, an oral food challenge. Based on test results, introduce peanut-containing foods.	4 to 6 months
Mild to moderate eczema	Introduce peanut-containing foods.	Around 6 months
No eczema or any food allergy	Introduce peanut-containing foods.	Age-appropriate and in accordance with family preferences and cultural practices

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(5)A. Togias et al ; (6) Toit et al

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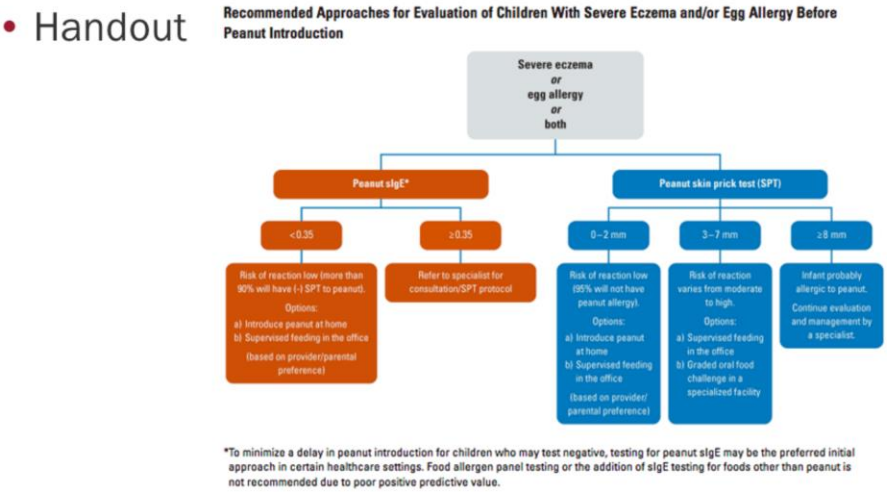
- so with this data in mind, I created education tools to help the residents
- The first tool was a handout that included an algorithm for safe peanut introduction for pediatricians, taking into account the patients risk factors.
- The hand out also included tips for home introduction that could be shared with families.

Educational Tools

- Handout



The handout also contained an algorithm for IgE testing and skin prick testing.

Educational Tools

- Video- available through Canvas (IU online education portal)

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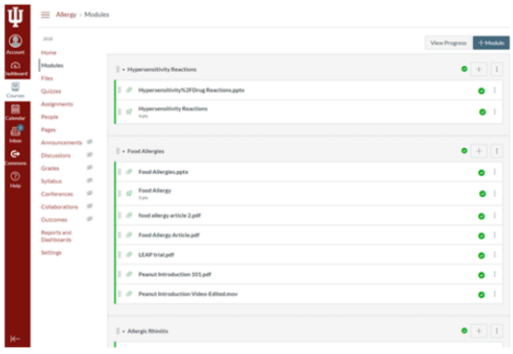
We then supplied a 5 minute video discussing peanut . It was initially advertised to be played at continuity clinics and later for residents to view on canvas.

Educational Tools

- Modules- Specific allergy education presentations available canvas



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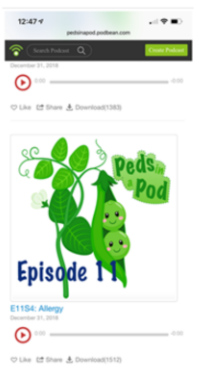
- We also provided modules with allergy education. This education provided power points and quizzes on common allergy and immunology topics, not just limited to peanut introduction and epinephrine autoinjector use. Videos, articles, and handouts were also made available on this site. Canvas modules were encouraged to be completed during AI and pulmonology rotations by coordinators.

Educational Tools

- Peds in a Pod (Season 11;Episode 4) -15 minute podcast on food allergies
- Downloaded in all 50 states and across the world
- Currently this episode with 3,057 downloads



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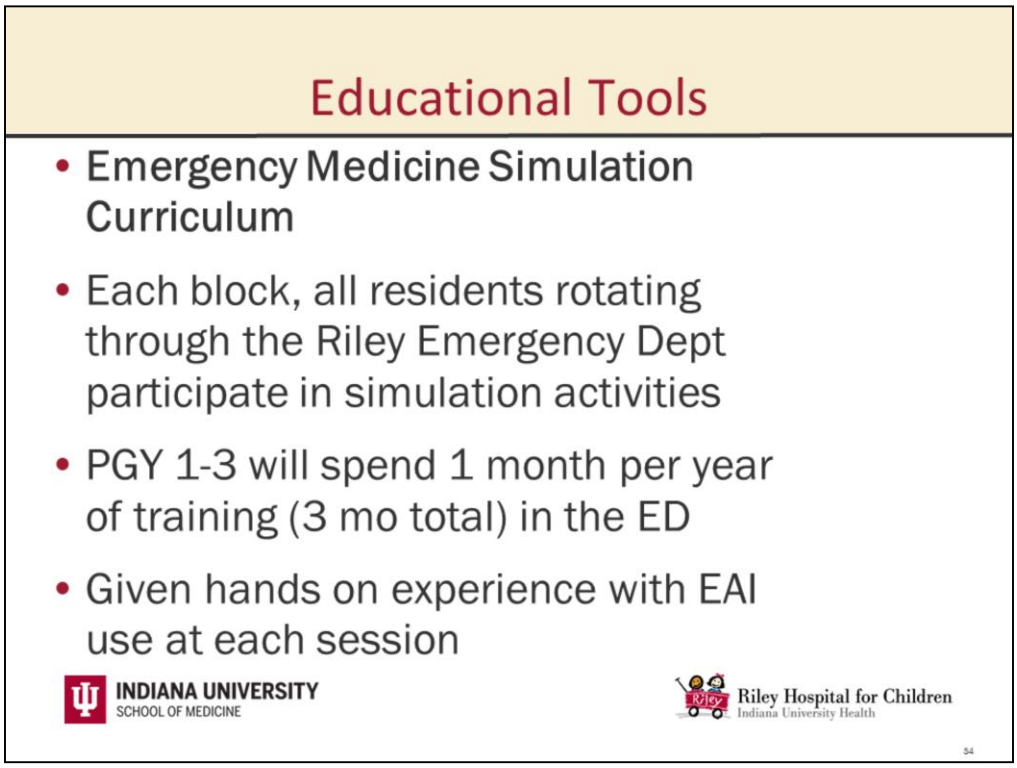
- Next we created a podcast on the IU resident board review station , pedsinapod. The podcast is 15 minutes long and discussed food allergies and peanut introduction. It is currently downloaded in all 50 states and across the world with 3,057 views as of January.



]Lastly, we incorporated EM simulation to practice EAI use. Read each bullet point.

There are multiple stations included in sim. Two of the stations are allergy focused. Station 1 is an Anaphylaxis case and station two does not have a patient and instead allows the residents to work with a provider to practice with the equipment and EAIs.

Follow Up Survey Questions

- Same as baseline survey
- +
- Have you taken a peanut allergy survey before
- Which of the following educational tools did you use?

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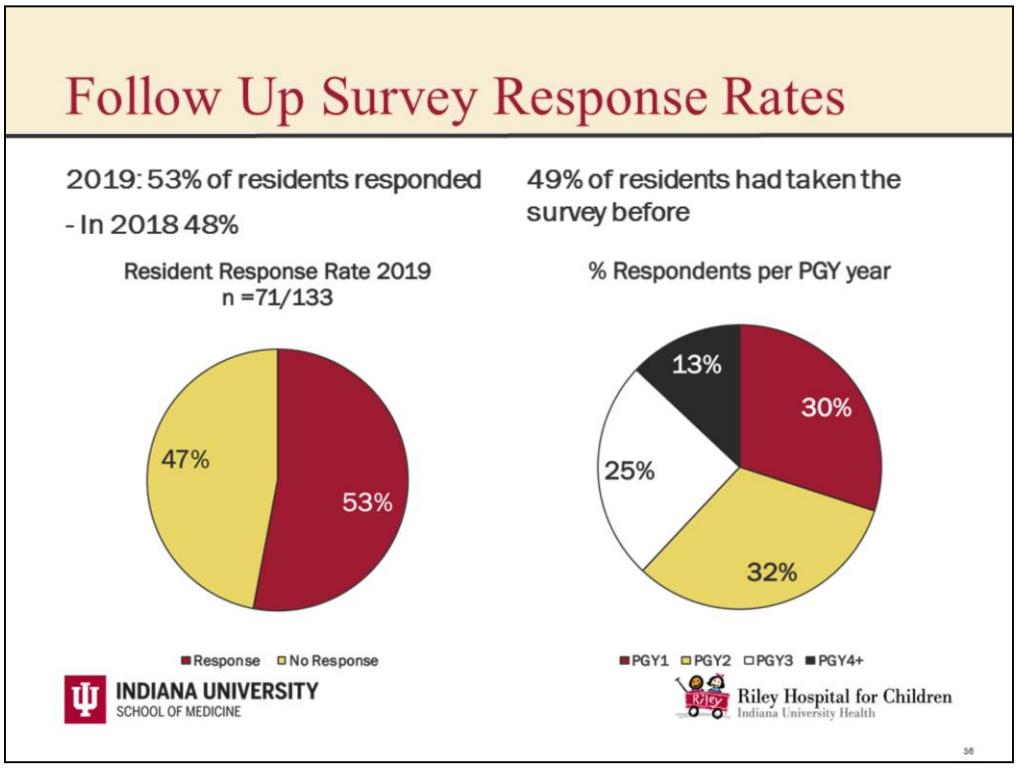


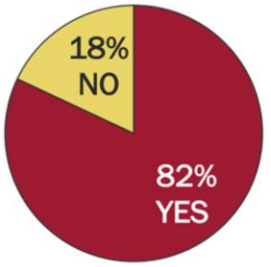
53% of residents responded to the follow up survey. Over 40% response rate again per class year with 84% of interns responding this year. 49% of residents had taken the survey before. Follow up survey results 1 year after interventions were as follows:

PGY1[21/25;84%], PGY2 [23/44;52%], PGY3 [18/41,43%],PGY4+[9/23;39%].

49% of residents had taken survey before: n=35/71

Follow Up Survey Results

Do you know how to use an automatic epinephrine injector?



Yes No

Previously 60% answered correctly. p = 0.02

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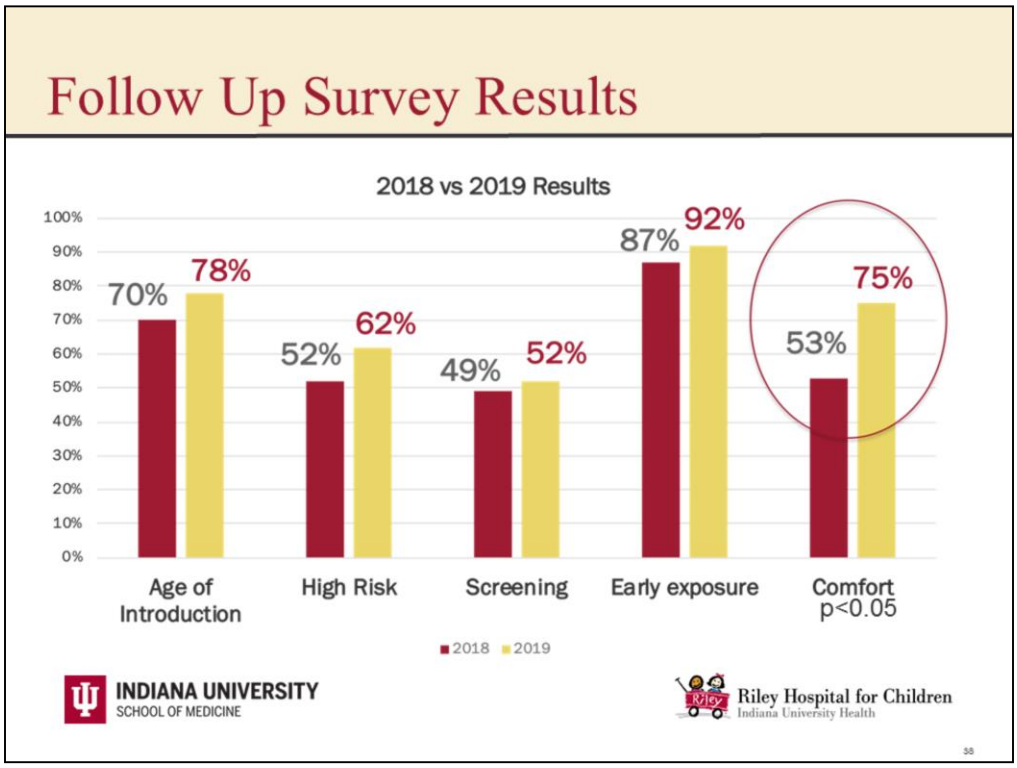
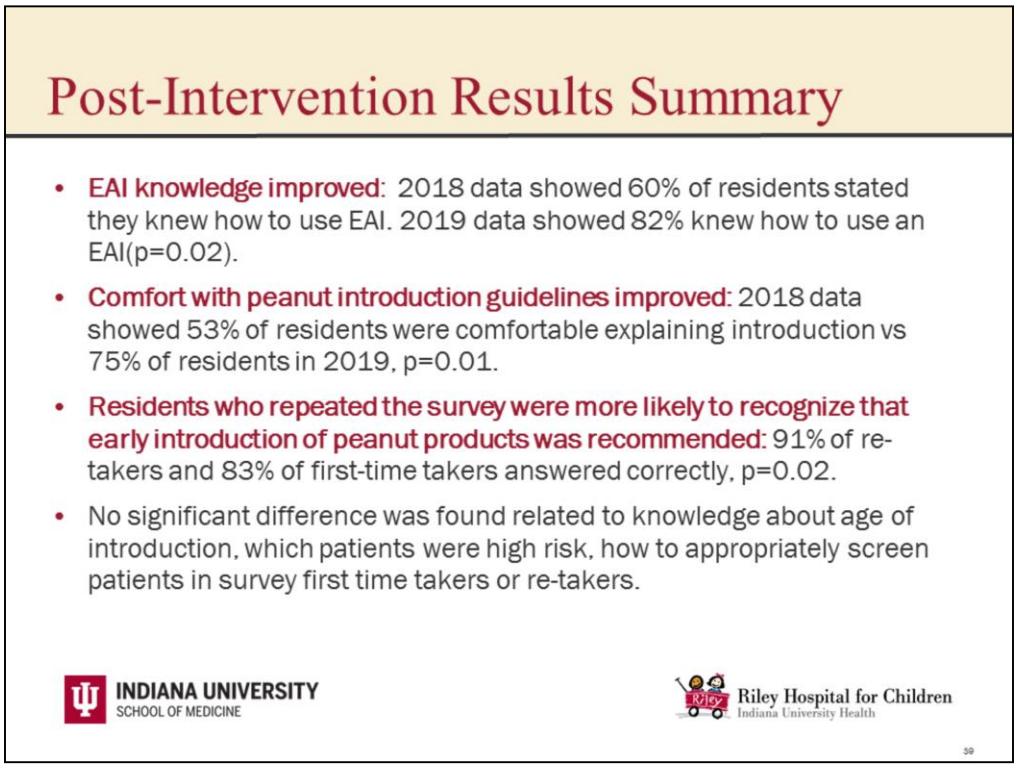


With all follow up peanut introduction questions, residents showed some improvement. However there was only significant improvement in residents who felt comfortable with explaining peanut introduction to parents.

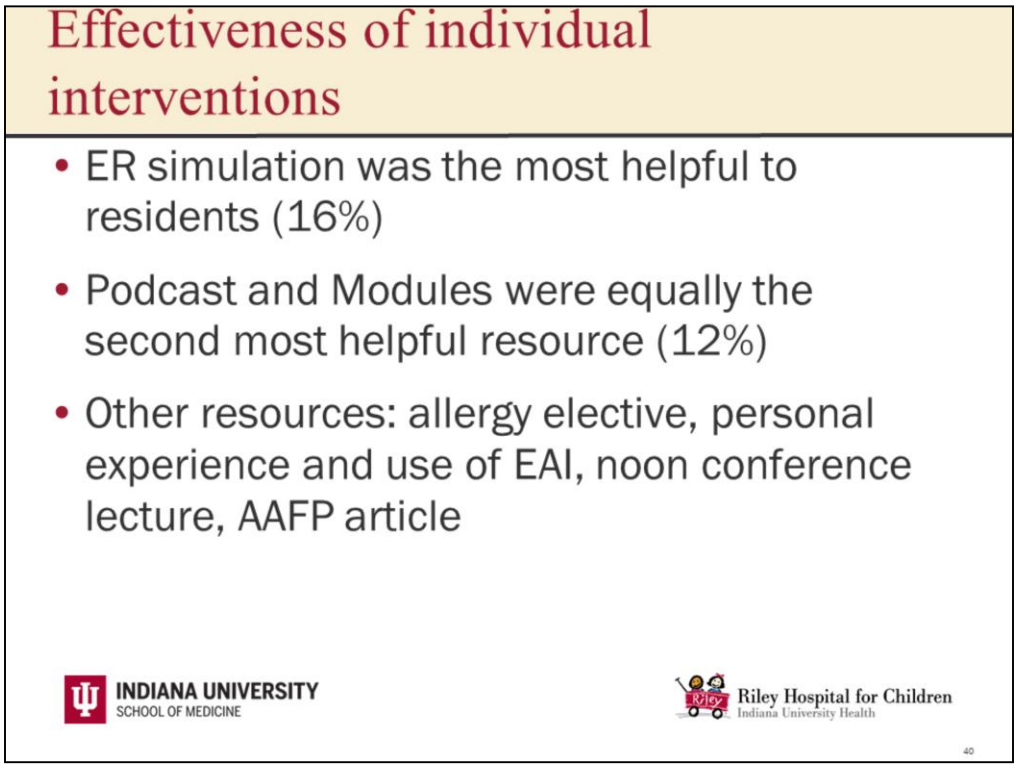


EAI knowledge without significant diff among class years

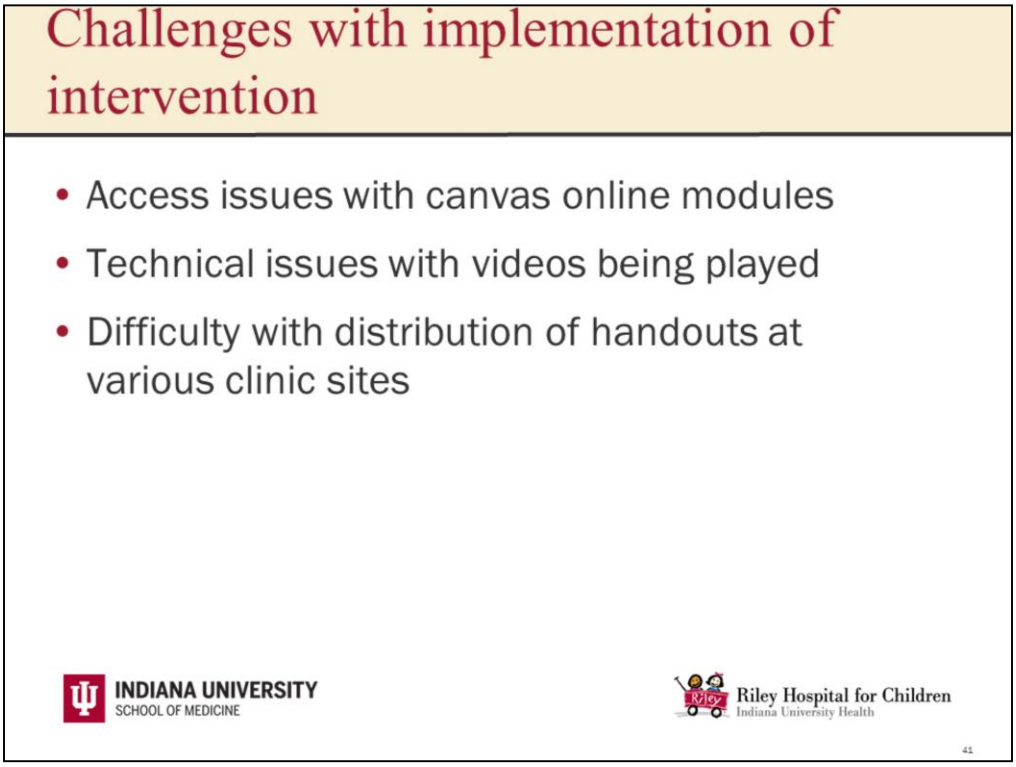
53% n= 50/95

75% n= 53/71

The overall pediatric resident response rate in initial survey was 48% (n=95/198; new PGY1 [30/46;65%]; middle PGY1 [25/45; 56%]; PGY2 [19/44; 43%]; PGY3 [17/43; 40%]; PGY4+ [4/20; 20%]). The repeat survey response rate was 53% (n=71/133; PGY1[21/25;84%], PGY2 [23/44;52%], PGY3 [18/41,43%],PGY4+[9/23;39%]. Forty-nine percent of resident respondents had taken the survey before (n=35/71;49%).- TABLE?



- Majority of residents had not yet accessed canvas education tools due to a number of access issues I will discuss on the next slide. Of the tools that were utilized:
- ER simulation was reported as the most helpful tool when residents were surveyed (16% residents preferred this method)
- Podcasts and Modules were equally the second most helpful resource with 12 % of residents preferencing these tools.



- Some of the Access issues included canvas access not being sent to all residents by coordinator. This has been addressed and now all residents have access and will be reminded by coordinators

- We also had technical issues with sound on videos being played at clinic sites. Videos have now been uploaded to canvas to trouble shoot this issue.

- Lastly, we had distribution issues with handouts not being given at certain continuity clinic sites. Handouts are now on canvas.

Summary

- Changes in resident curriculum led to:
- Increased knowledge on use of epinephrine auto-injectors
- Some improvement on the knowledge of peanut guidelines, particularly resident comfortability with parents.

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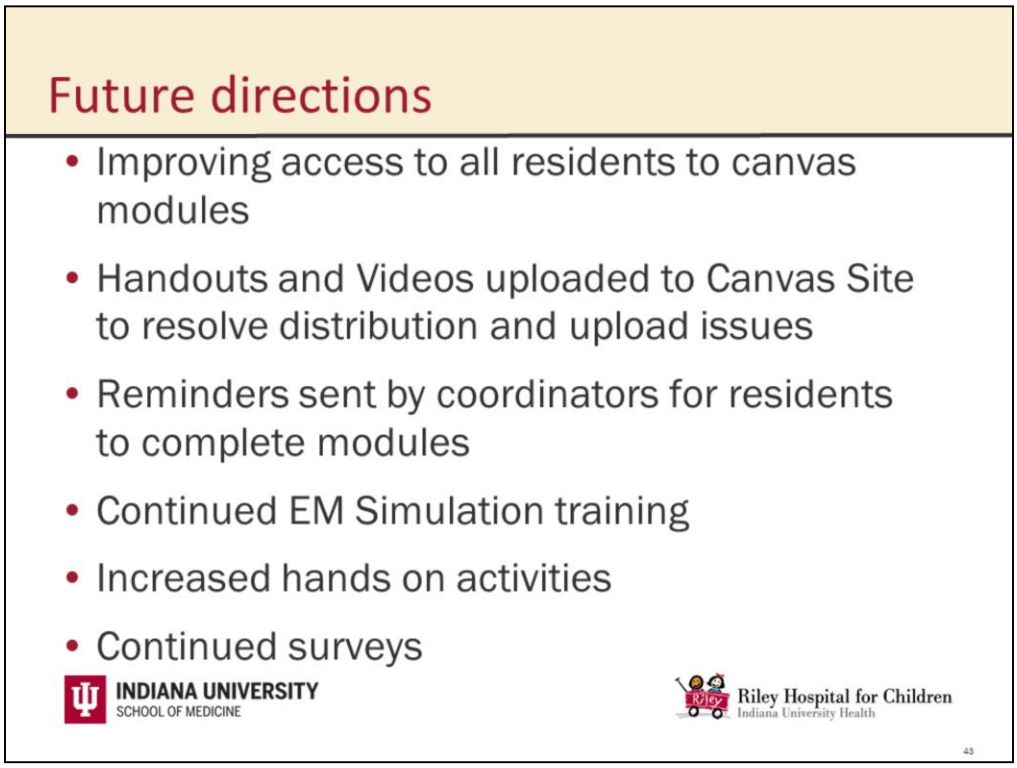

more hands on activities: how to feed infant peanut butter- primary care track curriculum? Continued surveys to assess effectiveness

Acknowledgements

- Dr. Girish Vitalpur
- Dr. Meagan O'Niell
- James Slaven MS

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