

National Pediatric Nighttime Curriculum Field Test: Assessment of Curriculum Feasibility and Effect on Residents' Attitudes, Confidence, and Knowledge

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Nothing to Disclose

The authors have disclosed that they have no financial relationships to resolve or Conflicts of Interest (COI's).



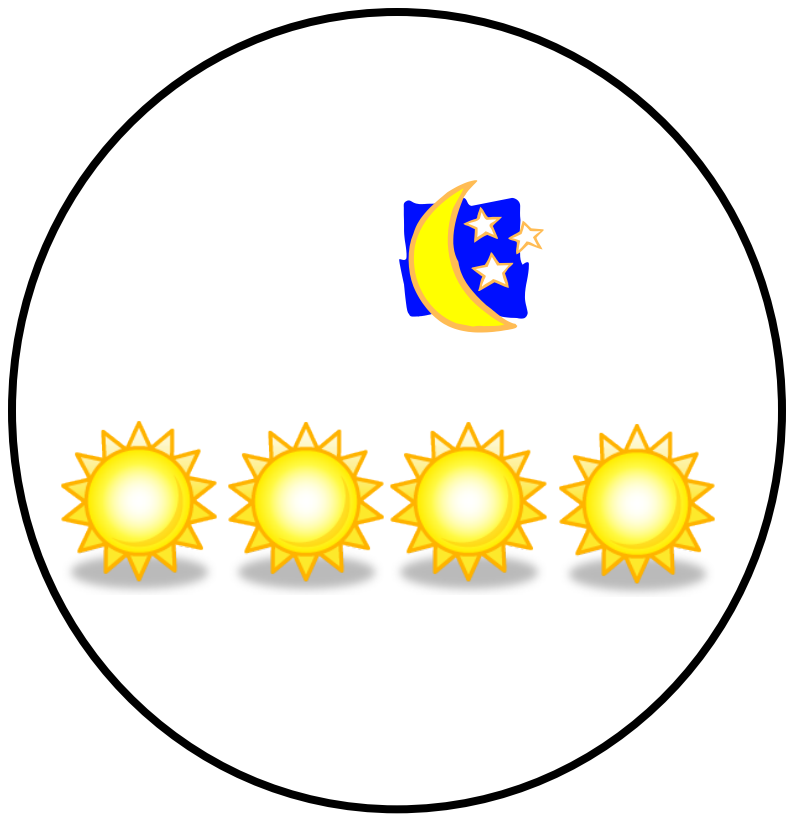
Background

- 2011 ACGME work hour restrictions led to a substantial increase in nighttime rotations¹
 - 100% increase in intern nighttime rotations
 - 25% increase in resident nighttime rotations (for PGY-2 and PGY-3s)
- Nighttime brings unique challenge of delivering resident education

¹Blankenburg et al, PAS 2011



2011



Pre

Post

Background

- According to the RRC, all resident rotations must have a balance of education and service
- Limited literature about nighttime teaching
 - CNMC (MedEd Portal) – List of Topics
 - UConn (APPD Share Warehouse) – Assessment Tools
- Global need
 - Only 30% of programs had a formal nighttime curriculum in November 2010

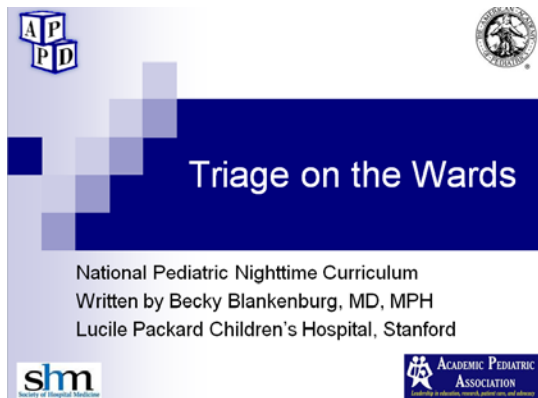


National Nighttime Curriculum

- Web-based, Case-based Curriculum
- 30 topics, determined by
 - Review of literature
 - Needs assessment of residency program directors
 - Expert consensus
- Modules created by educators nationally
 - Collaborative effort of APPD, APA, AAP, SHM
- Modules peer-reviewed by APPD Curriculum Task Force

National Nighttime Curriculum

- 2 Cases
- Brief PowerPoint Presentation (15 minutes)
 - Voiceover and Non-voiceover Versions
- 5 Pre-/Post- Questions
- 1-2 page Topic Summary



Case 1

You are the intern on-call and simultaneously receive the following 5 pages. How do you prioritize them? What do you do?

1. "Josh has bad abdominal pain."
2. "Sophia's mom just arrived from work and would like to hear how she is doing."
3. "Dr. Smith (Zach's private physician) just called and is upset that you didn't start him on Ceftriaxone. He would like a call back immediately."
4. "Molly [12 with pre-B cell ALL just admitted with fever and neutropenia] has a blood pressure that's 70/30."
5. "Alex is breathing harder. Would like to start Albuterol."



National Nighttime Curriculum Field Test – 10 Topics

60% Medical

1. Shock
2. Respiratory Distress
3. Fever
4. Seizures
5. Altered Mental Status
6. Pain Management

40% Communication

1. Handoffs
2. Triage on the Wards
3. Communication with Patients and Families
4. Autonomous Decision-Making

Methods

- National field test of 10 modules from July to December 2011
- IRB-Approved, APPD-Approved
- 89 pediatric and med-peds residency programs (46% of all programs nationally)
- >2000 learners



Methods continued

- Curriculum implemented in variety of ways
 - Faculty-Led
 - Senior Resident-Led
 - Self-study Computer Modules

Methods continued

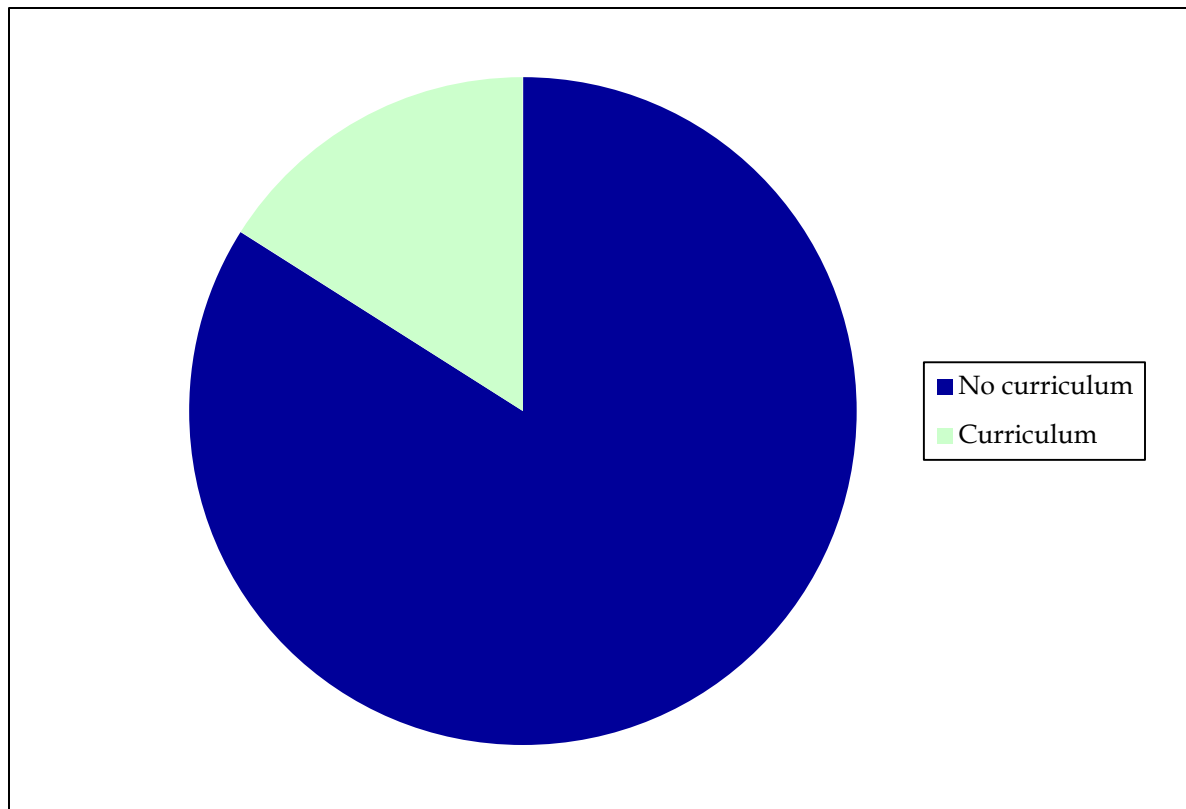
- Curriculum was assessed for
 - Feasibility
 - Pre-post Attitudes
 - Pre-post Confidence (10 item, anchored scale)
 - Pre-post Knowledge (10 mult. choice questions)
- Confidential, linked pre/post online surveys



Results

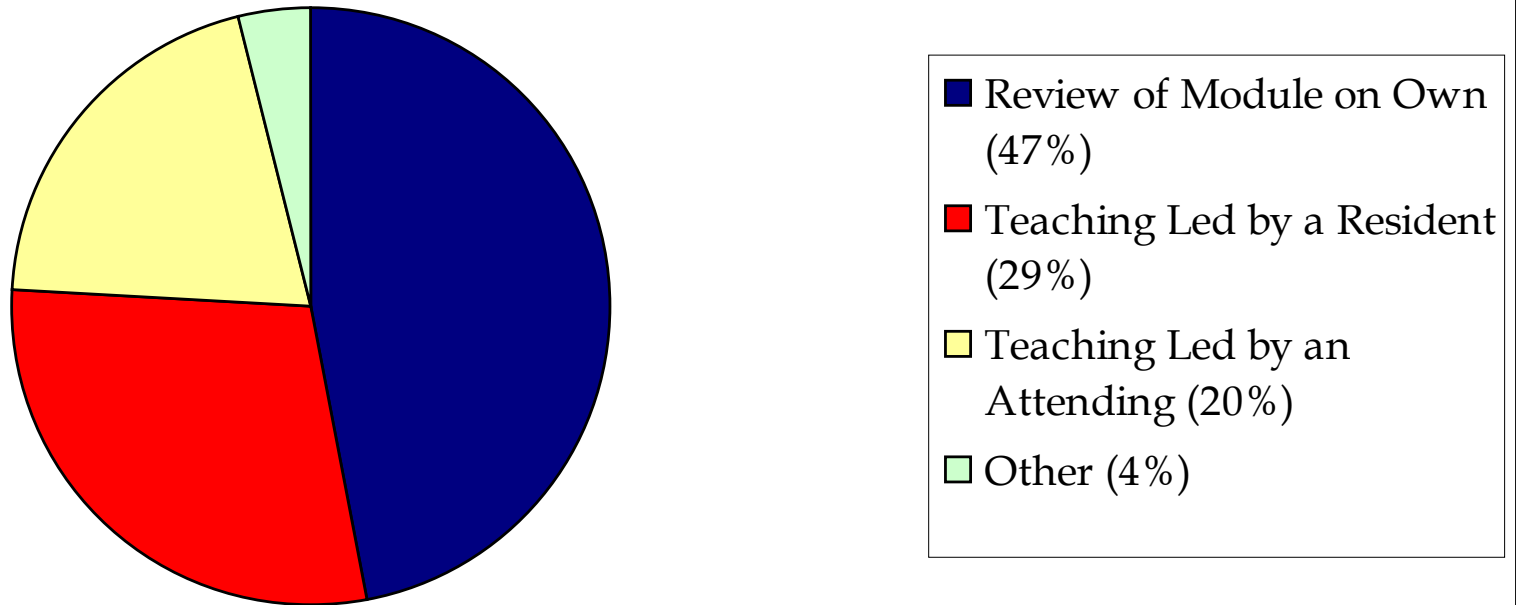
#1: Feasibility

84% of Participating Programs Had No Nighttime Curriculum Prior to this Intervention



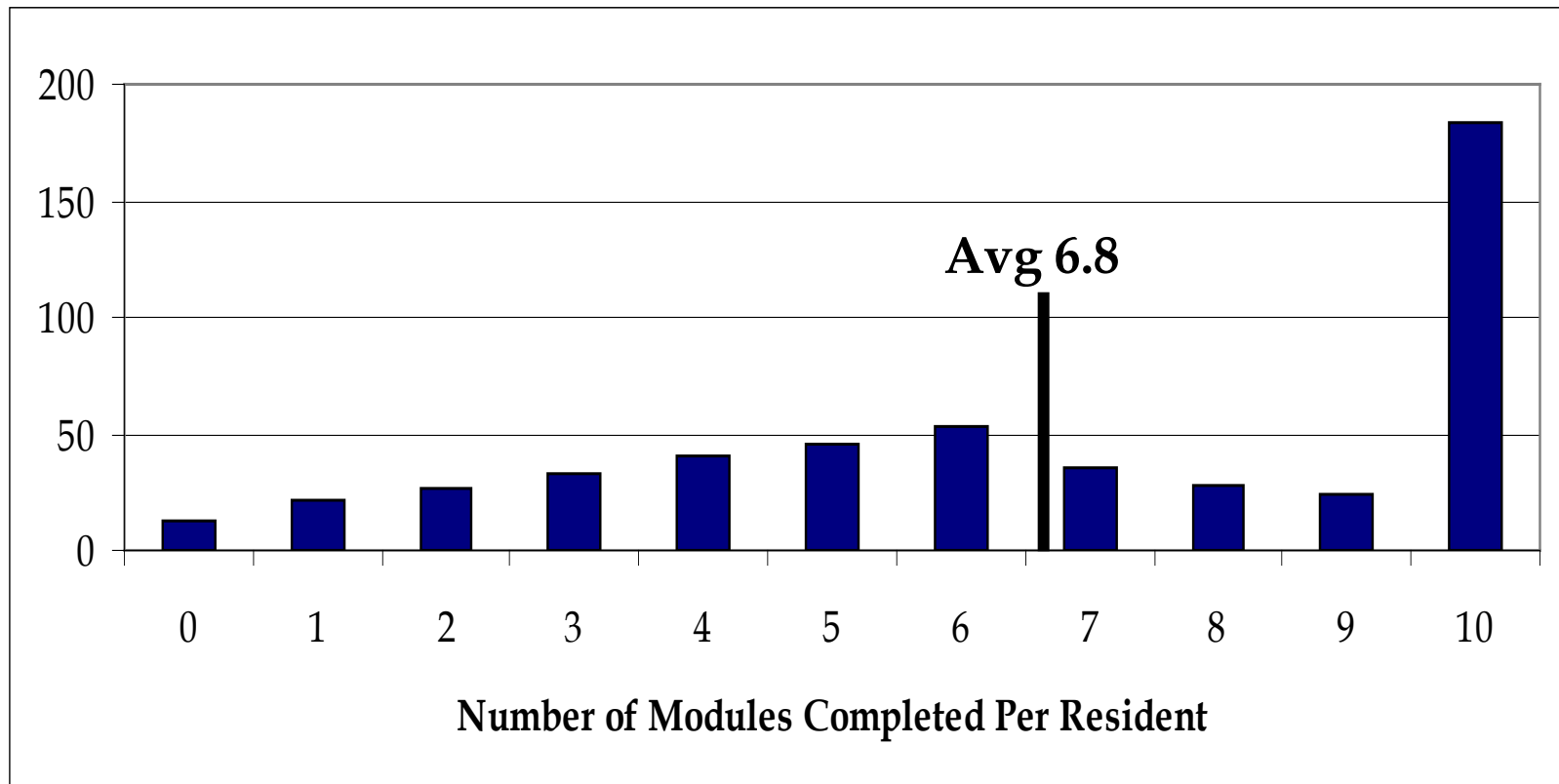
#1: Feasibility continued

Variety of Teaching Methods



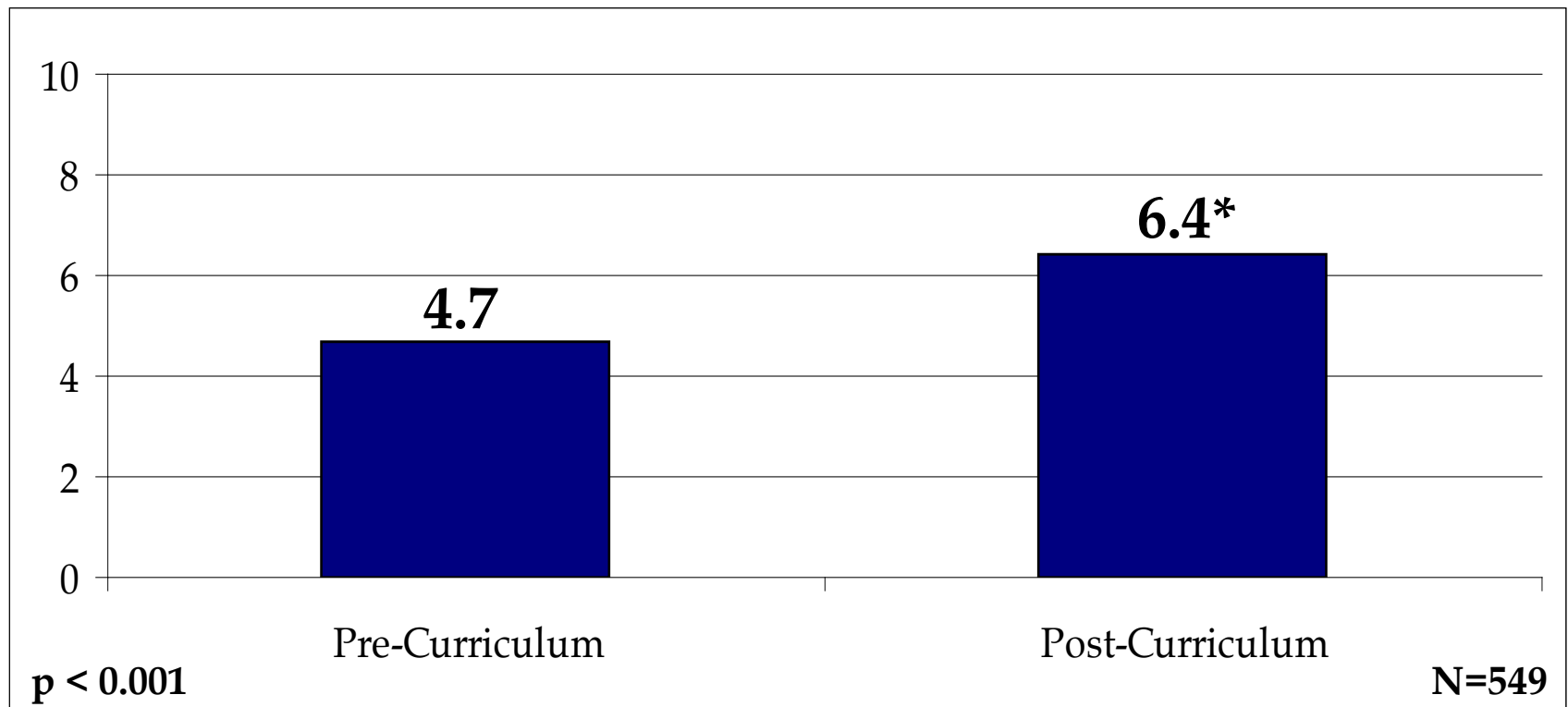
#1: Feasibility continued

64% of Residents Completed At Least 6 Modules



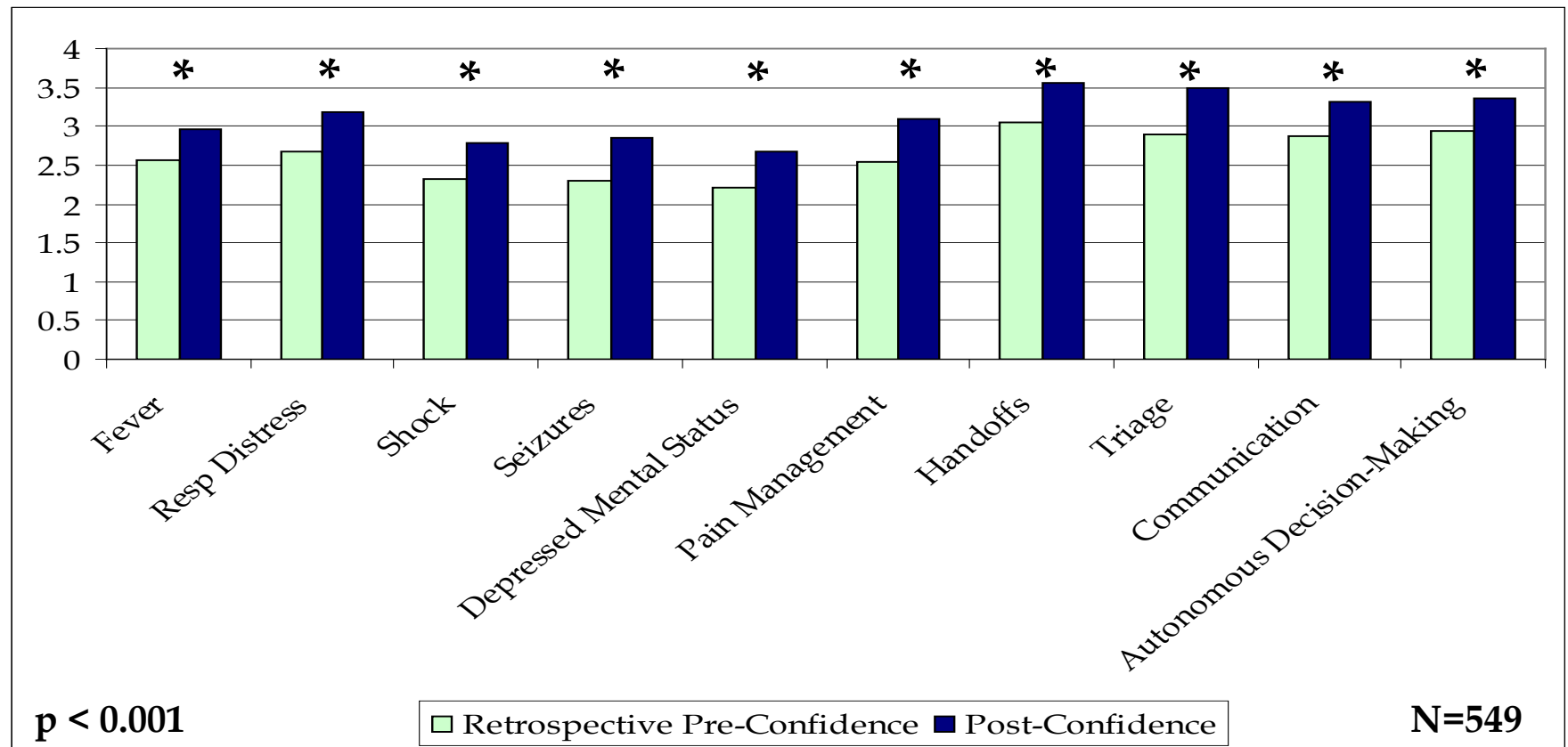
#2: Attitudes

Residents Perceived Improved Learning Post-Curriculum



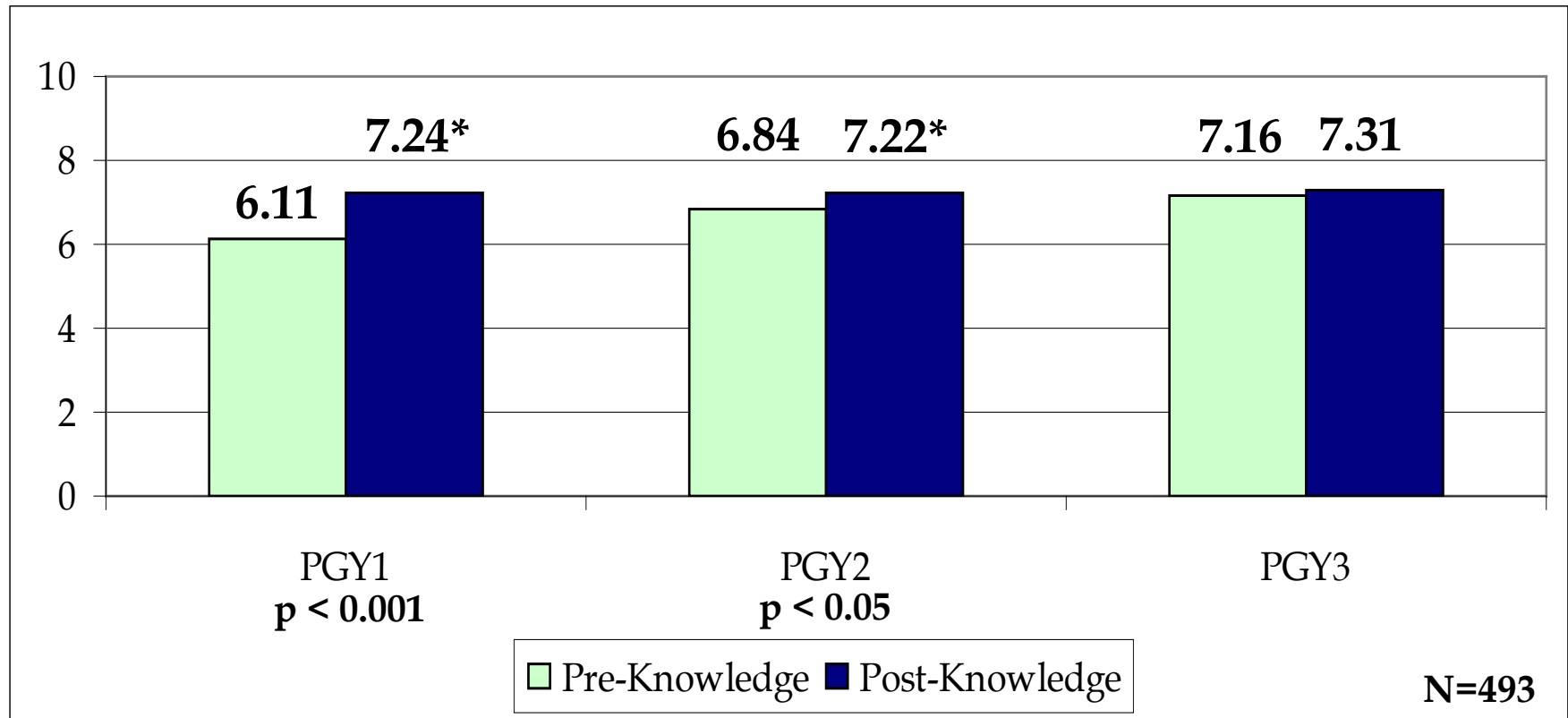
#3: Confidence

Retrospective Pre- vs. Post-Confidence Scores Based on Level



#4: Knowledge

Pre- vs. Post-Knowledge Scores Based on Resident Level



#5: How Curriculum Taught

- Though there are rich comments expressing desire for residents or faculty to facilitate the sessions...
- No impact on:
 - Perception of amount learned
 - Knowledge

Qualitative Data: Curriculum Strengths

- “Focused and to the point learning that is pertinent to night shift problems/concerns” – PGY1
- “Quick and effective.” “Concise.” – PGY2
- “Self-paced.” – PGY3
- “It gave me tools to deal with common situations before I was in those situations.” – PGY1

Qualitative Data: Curriculum Strengths

- “I really enjoyed this curriculum. I especially enjoyed the ability to immediately use what was learned and how it had significant relevance to what I was doing in the hospital.” – PGY1
- “It facilitated teaching from Senior residents about practical topics. I stated that I did not feel that I learned much (in terms of new information) from the modules, but appreciated them as they were a great teaching tool.” – PGY3
- “Brought a new focus on teaching to nights.” – Program Director

Qualitative Data: How to Improve

- “More topics, more questions and cases to practice knowledge learned from the sessions.” – PGY3
- “Probably more helpful in terms of knowledge for earlier in residency. The formatting, however, helped with passing info along to my PGY1 counterpart.” – PGY3
- “Have higher levels of discussion for higher level residents.” – PGY2
- “Having a facilitator.” – PGY1
- “It is often difficult to find the time to complete the modules.” – PGY1



Conclusions

1. The curriculum is feasible in a variety of settings.
2. Residents believe that the curriculum improved their nighttime learning.
3. Confidence increased significantly for all topics and all levels of learners.
4. Knowledge increased significantly for PGY1s and PGY2s.
5. Demonstrated feasibility and effectiveness of a national pediatric education collaborative.



Limitations

- Selection bias
- No control group
- Curriculum was implemented in variety of ways
- 77% of residents believed the modules were most geared towards interns
- Limited knowledge assessment – only single-item question per topic area
- Response rate for each program still being assessed



Implications for Future Studies

- How do we capture the teachable moments when attendings are not present?
- How do we promote self-learning at night?
- How do we assess residents at night?



Next Steps

- Improving the curriculum based on feedback and submitting to MedEd Portal and APPD Share Warehouse
- Further enhancing the curriculum (version 2) by placing it on an interactive web-based platform (e.g., Moodle)
- Flipped Classroom - Creating interactive learning activities and assessment tools to pair with the modules
 - Come to the Curriculum Task Force Meeting today and tomorrow to be part of this!

Acknowledgements

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 - Becky Blankenburg, MD, MPH
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 - Christine Skurkis, MD
 - Erin Augustine, MD
 - Jessica Myers, MD
 - Lou Ann Cooper, PhD
 - Madelyn Kahana, MD
- 35 Authors, National Pediatric Nighttime Curriculum
- Program Directors and Site Directors, 89 participating sites
- Pediatric Hospital Medicine Education Task Force
- APPD Special Projects Grant



Questions?

Sample Case



Case 1

You are the intern on-call and simultaneously receive the following 5 pages. How do you prioritize them? What do you do?

1. "Josh has bad abdominal pain."
2. "Sophia's mom just arrived from work and would like to hear how she is doing."
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National Nighttime Curriculum

- Assessment:
 - Feasibility
 - Pre-post Attitudes
 - Pre-post Confidence (10-item, anchored scale)
 - Pre-post Knowledge (10 multiple choice questions)

Compare and contrast how confident you felt and now feel managing the following issues (pre-/post-rotation):

Key:

1 = not at all confident; would need a supervisor to tell me exactly what to do

2 = somewhat confident; would want to have a supervisor working with me

3 = fairly confident; might want a supervisor to provide targeted advice or serve as a consultant

4 = very confident; would not need a supervisor at all

1. Before the nighttime rotation: Ability to perform the initial management of a patient in respiratory distress.

2. After the nighttime rotation: Ability to perform the initial management of a patient in respiratory distress.

3. Before the nighttime rotation: Ability to initiate a pain management regimen.

4. After the nighttime rotation: Ability to initiate a pain management regimen.

5. Before the nighttime rotation: Ability to hand off a patient with more than 3 active problems.

6. After the nighttime rotation: Ability to hand off a patient with more than 3 active problems.

Sample Confidence Questions

Compare and contrast how confident you felt and now feel managing the following issues (pre-/post-rotation):

Key:

1 = not at all confident; would need a supervisor to tell me exactly what to do

2 = somewhat confident; would want to have a supervisor working with me

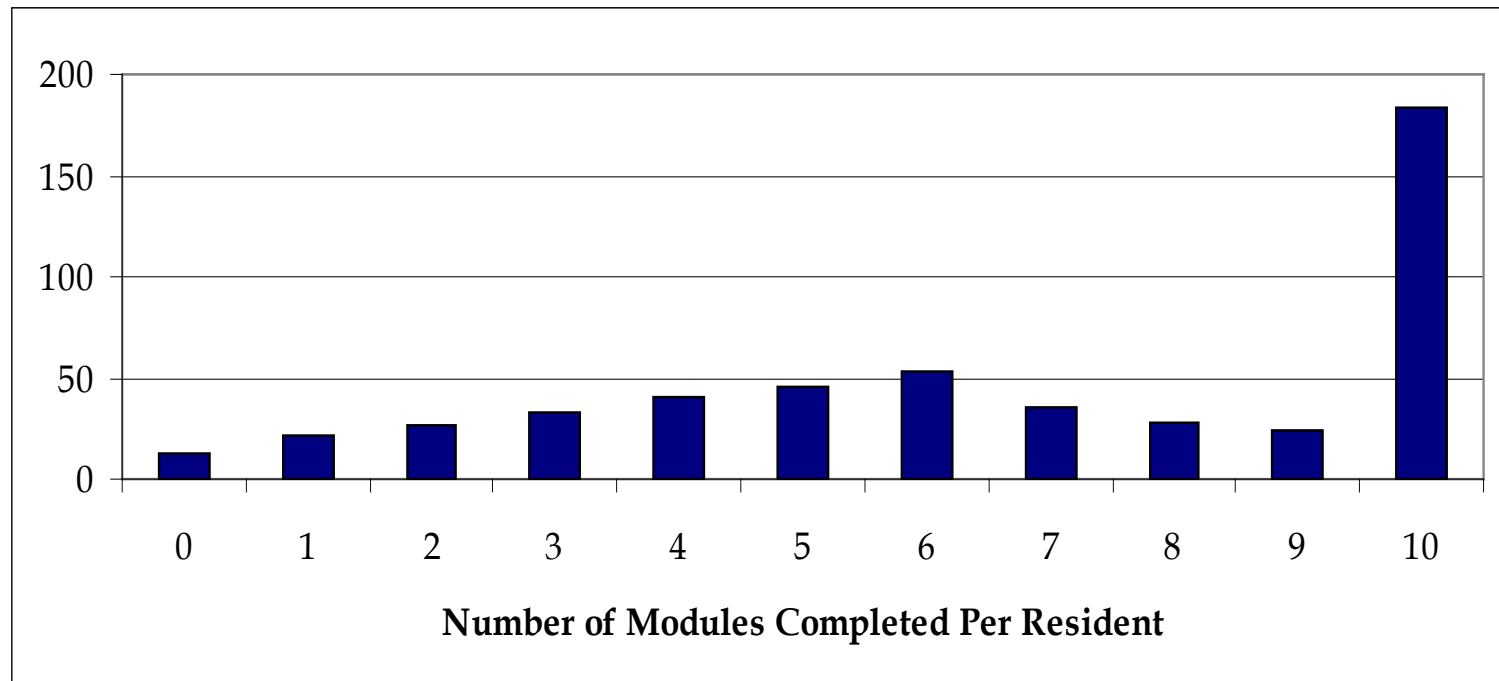
3 = fairly confident; might want a supervisor to provide targeted advice or serve as a consultant

4 = very confident; would not need a supervisor at all

1. Before the nighttime rotation: Ability to perform the initial management of a patient in respiratory distress.
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3. Before the nighttime rotation: Ability to initiate a pain management regimen.
4. After the nighttime rotation: Ability to initiate a pain management regimen.
5. Before the nighttime rotation: Ability to hand off a patient with more than 3 active problems.
6. After the nighttime rotation: Ability to hand off a patient with more than 3 active problems.

#1: Feasibility

- 84% of participating programs did not have a nighttime curriculum prior to this intervention
- 64% of residents completed at least 6 modules



Qualitative Data: What They Liked

“focused and to the point learning that is pertinent to night shift problems/concerns” -PGY1

“It gave me tools to deal with common situations before I was in those situations.” - PGY1

“I liked the ability to pick and choose topics as appropriate for rotation / patients covered.” -PGY3

“Touched on many topics that are important at night and in taking care of sick patients in general. It seems best for interns, but was a good refresher for upper levels.” - PGY3

“Self-paced.” -PGY3

“Quick and effective.” “Concise.” -PGY2

“It was nice to have some formalized topics rather than trying