

# Evaluation of the Effectiveness of a Pediatric Endocrinology Education Program for Haiti: a preliminary report

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# Conflict of Interest

None.

# Background



- Republic of Haiti
  - Poorest country in Western Hemisphere
  - Overall health status among the lowest in the world
- Currently no pediatric endocrinologist
  - Education and training significantly limited
  - Endocrine conditions most likely vastly under-diagnosed

# Background

- Pediatric Endocrinology Education Program for Haiti (PEEP-H)



# Background

- Two Haitian pediatric residency programs
  - Mirebalais University Hospital
  - NPH Haiti Saint Damien Pediatric Hospital
- Two year curriculum:
  - Onsite teaching modules every 2 months
  - Monthly teleconferences
  - ESPE e-learning platform
  - Remote consultation platform

# **PEEP-H EFFECTIVENESS EVALUATION PROJECT**

# Objectives

- To evaluate the effectiveness of PEEP-H on its participants' knowledge and skills in general pediatric endocrinology
- To survey participants' perception on impact and quality of the program.
- To assess the utility and feasibility of a remote consultation platform.
- To ensure continuous quality improvement of the program.

# Methods

- Study design
  - Prospective observational cohort study
- Population
  - Pediatric residents and staff pediatricians at two pediatric residency sites in Haiti
- Inclusion criteria
  - Participation in at least one onsite teaching module



# Methods

- Paper and electronic surveys (RedCap)
  - Demographic information
  - Participants' evaluation of onsite and remote modules
  - Teachers' appreciation of their visit
  - Use and satisfaction of remote consultation platform
  - ➔ Reviewed bimonthly for quality improvement
- Pre- and post-training multiple-choice questionnaires (MCQ)
  - Designed by group of pediatric endocrinologists

# Statistics

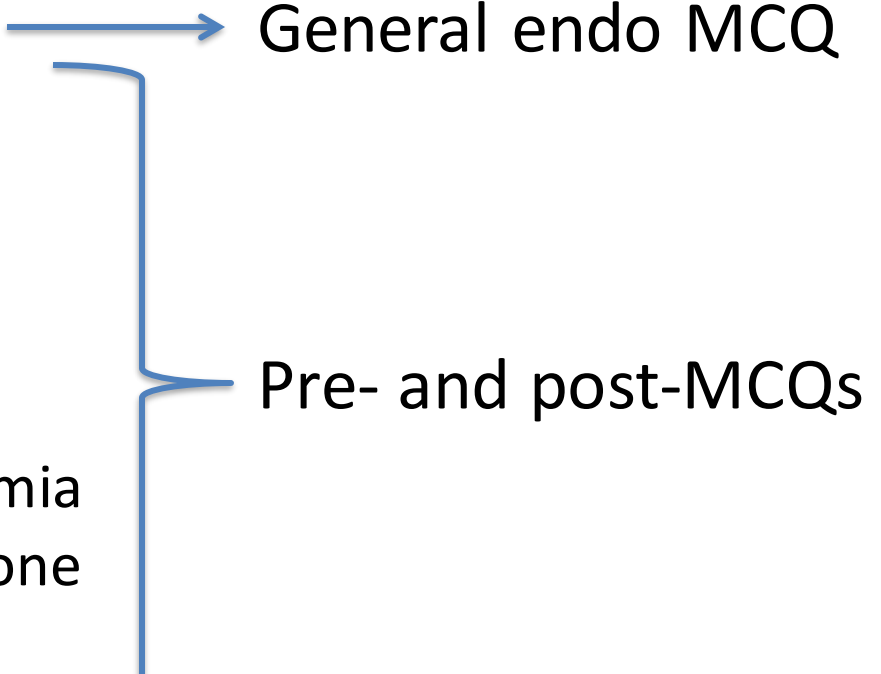
## Quantitative data analysis

- SAS 9.4
- Descriptive statistics
  - Means (SD) and Medians (IQR), as appropriate
  - Proportions expressed as percentages
- Paired t-Test
  - Comparison of pre- and post-MCQs

## Qualitative data analysis

- Theme extraction
- Major theme: 50% mention or more
- Minor theme: 30% mention or more

# Results

- 52 participants
  - 9 onsite teaching modules between March 2016 and July 2017:
    - Mar 2016: Growth
    - May 2016: Puberty
    - July 2016: DSD
    - Oct. 2016: Diabetes
    - Dec. 2016: Adrenals
    - Feb. 2017: Thyroid
    - Apr. 2017: Hypoglycemia
    - May 2017: Calcium/Bone
    - July 2017: Pituitary
- General endo MCQ
- Pre- and post-MCQs
- 

# Demographic information

n = 42/52

|                                | #  | %  |
|--------------------------------|----|----|
| <b>Level of training</b>       |    |    |
| 1 <sup>st</sup> year residents | 7  | 17 |
| 2 <sup>nd</sup> year residents | 20 | 48 |
| 3 <sup>rd</sup> year residents | 12 | 29 |
| Staff Pediatricians            | 3  | 7  |
| <b>Medical degree</b>          |    |    |
| Haiti                          | 35 | 90 |
| Outside of Haiti               | 4  | 10 |
| <b>Residency program</b>       |    |    |
| Mirebalais University Hospital | 17 | 42 |
| St. Damien Hospital            | 21 | 51 |
| Other                          | 3  | 7  |

# Demographic information

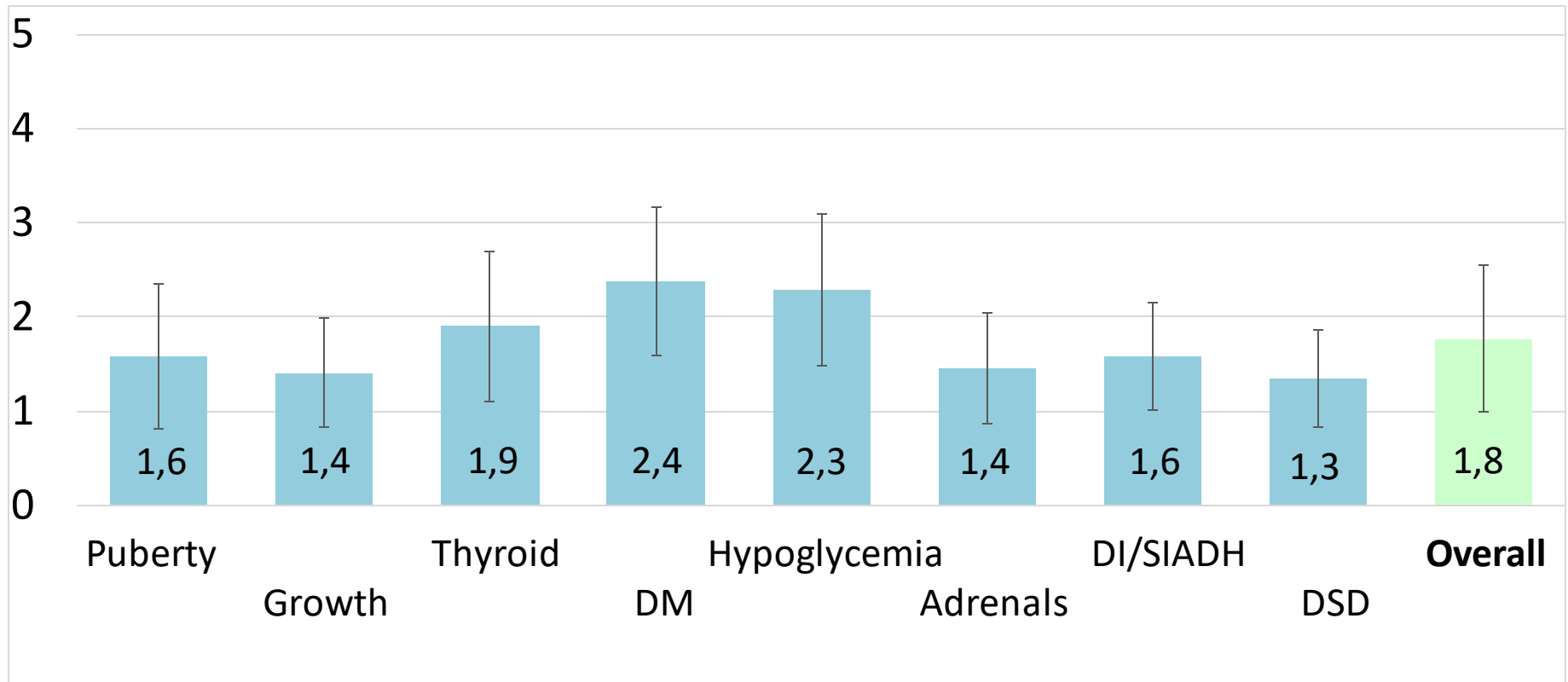
n = 42/52

|   | #  | %  |
|---|----|----|
| <b>Previous ped. endocrinology rotation</b> |    |    |
| Yes   | 3  | 7  |
| No  | 38 | 93 |

# Self-evaluation of knowledge

Likert scale of 1 (Insufficient) to 5 (Excellent)

Mean  $\pm$  SD



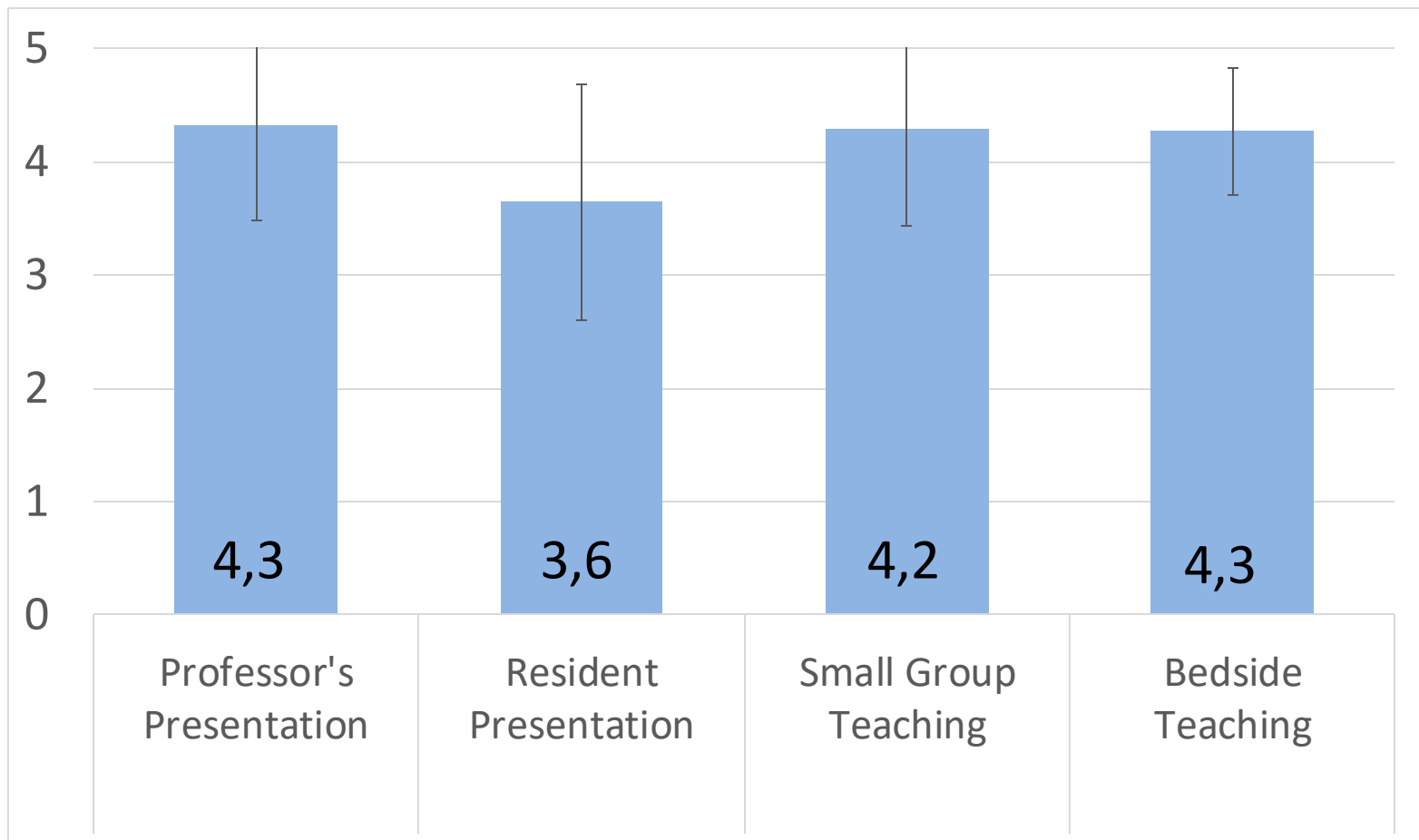
# Pre- and post-MCQ results

| Topics             | Mean Pre-<br>% (SD) | Mean Post-<br>% (SD) | $\Delta$ Mean<br>Pre-Post<br>% (SD) | <i>p</i> value<br>(Paired T Test) |
|--------------------|---------------------|----------------------|-------------------------------------|-----------------------------------|
| General<br>n = 21  | 45 (12)             | -                    | -                                   | -                                 |
| Puberty<br>n = 21  | 46 (14)             | 62 (10)              | 16 (11)                             | <.0001                            |
| DSD<br>n = 18      | 37 (14)             | 65 (10)              | 28 (19)                             | <.0001                            |
| Diabetes<br>n = 34 | 49 (18)             | 65 (17)              | 16 (12)                             | <.0001                            |
| Adrenals<br>n = 19 | 46 (14)             | 82 (10)              | 36 (15)                             | <.0001                            |

# Participant's evaluation of the program

## Quantitative evaluation

Likert scale of 1 (Worst) to 5 (Best)





# Participant's evaluation of the program

## Qualitative evaluation

### – Appreciation

- Major theme: Educational value (68%)
- Minor theme: Teaching methods (48%)

### – Suggestions for improvement

- Minor theme: Longer onsite visits/ More content (36%)
- Other:
  - More resources for preparation before onsite visit (26%)
  - More case discussions/ Patient encounters (24%)

# Remote modules

## 1. Consultation Platform

- X Haitian trainees and pediatricians
- X pediatric endocrinologists
- X cases / X messages

| Item                        | Positive Answer |
|-----------------------------|-----------------|
| Sufficiently quick response | 100% (7/7)      |
| Well-adapted answer         | 86% (6/7)       |
| Helpful advice              | 100% (7/7)      |
| Ability to follow advice    | 100% (6/6)      |
| Educational benefit         | 83% (5/6)       |
| Cost saving                 |                 |
| • Patient                   | 83% (5/6)       |
| • Hospital                  | 50% (3/6)       |

# Remote modules

- Teleconferences
- ESPE e-learning platform

# Discussion

- Subjective and objective lack of general ped. endo. knowledge that improves after onsite teaching
- Onsite and remote raining modules are positively evaluated.
- Remote consultation platform used to discuss a variety of cases and is perceived as beneficial for education and patient care.
- Barriers to ESPE e-learning platform use including difficulty with registration.

# Conclusions & Future Directions

- Positive preliminary results
- Long-term evaluation needed
  - Recapitulative exam
  - OSCE
- Training model in low-resource settings for other specialties
- Training of 2 pediatric endocrinologists and perpetuation of the program

# 'Side Effects'

- Resident research projects
- Presentation and exposure to international academic conferences
  - Canadian Pediatric Endocrine Meeting 2017
  - ESPE 2016
  - 10<sup>th</sup> International meeting 2017
  - ISPAD 2017

# Acknowledgements



ELSE KRÖNER-FRESENIUS-STIFTUNG

*Forschung fördern. Menschen helfen.*