THE LINK BETWEEN MILESTONE LEVELS AND FELLOW ENTRUSTMENT FOR THE COMMON PEDIATRIC SUBSPECIALTY ENTRUSTABLE PROFESSIONAL ACTIVITIES

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Introduction

- Entrustable Professional Activities (EPAs) describe essential routine tasks that a practicing physician is expected to execute independently
- EPAs for the pediatric subspecialties include
  - 7 common to all (Fig.1)
  - 3-6 subspecialty-specific
- Each EPA is comprised of several "key" subcompetencies
- Milestones for each of the subcompetencies describe behaviors along a developmental continuum from novice to expert
- Subcompetencies mapped to each EPA are thought to be critical to entrustment decisions
- Would expect a strong association between entrustment and milestone levels

Fig. 1 Common Pediatric Subspecialty EPAs	Abbreviation
Apply public health principles and improvement methodology to improve care for populations, communities, and systems (QI)	Pubhealth
Provide for and obtain consultation from other health care providers caring for children	Consultation
Contribute to the fiscally sound and ethical management of practice (e.g., through billing, scheduling, coding, & record keeping practices)	Management
Facilitate handovers to another health care provider	Handover
Lead and work within interprofessional health care teams	Leadteam
Lead within the subspecialty profession	Leadprof
Engage in scholarly activities through the discovery, application, and dissemination of new knowledge	Not evaluated in this study

Objectives

For 6/7 common pediatric subspecialty EPAs, to:
1. Examine the association between the assigned milestone levels for pediatric fellows with their required level of supervision
2. Determine whether there is a specific milestone level at which a fellow is deemed entrustable

Methods

Study Network
- Subspecialty Pediatrics Investigator Network (SPIN)
- Links the 14 pediatric subspecialty fellowship program director networks
- SPIN subspecialty representatives recruited programs to participate
- goal of ≥ 20% program participation for each subspecialty

Data Collection
- For each fellow, CCC assigned milestone levels for all subcompetencies mapped to the 6 EPAs
  - 29 subcompetencies evaluated
- CCC then assigned level of supervision for each fellow for the 6 EPAs
- Data collection in fall 2014 & spring 2015

Level of Supervision Scales
- Created and validated 5-level supervision scales since no validated scales existed (see Poster #12)
- Scales developed to be consistent with current approach to fellow supervision

Data Analysis
- For each EPA and for each fellow, unweighted, mean milestone score calculated
- Correlation of mean milestone score with entrustment decision used Spearman rho
- ROC curves generated using the average milestone score and entrustment (yes or no)
  - supervision levels 4 or 5 considered entrustable

Results

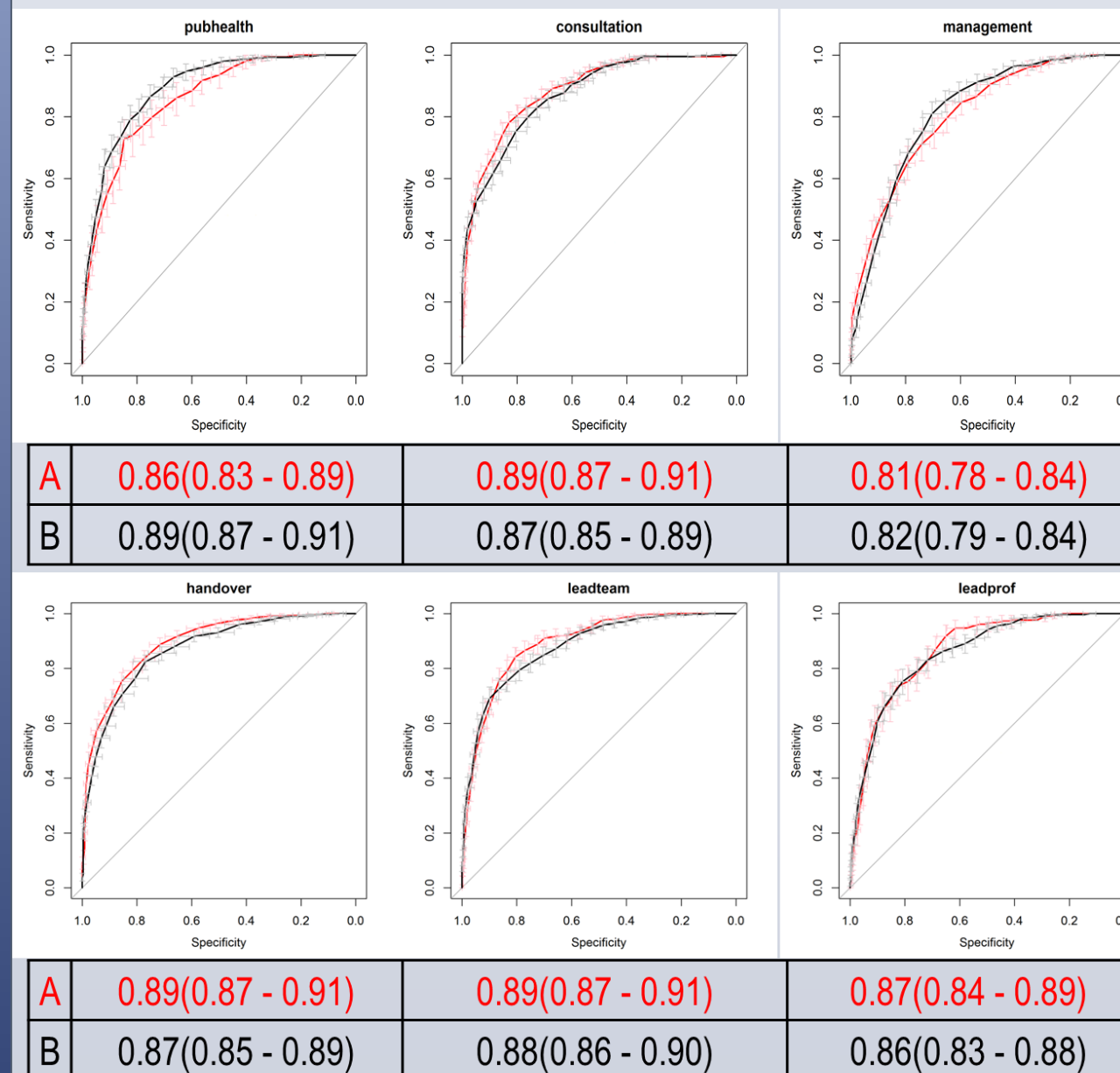| Study Participation	Fall 2014	Spring 2015
Programs (n)	208	209
Subspecialties with Program Participation ≥ 20% (%)	79	79
Fellows (n)	1040	1048

Results

- Mean milestone scores (SD) showed the expected variability, ranging from 2.65(0.83) for Pubhealth to 4.03(0.88) for Handover

Correlation of Mean Milestone Score with Level of Supervision in the Fall & Spring*

EPA	Period	Rho (95% CI)
Pubhealth	Fall	0.67(0.63 - 0.70)
	Spring	0.70(0.66 - 0.73)
Consultation	Fall	0.72(0.69 - 0.75)
	Spring	0.71(0.68 - 0.74)
Management	Fall	0.60(0.56 - 0.64)
	Spring	0.59(0.55 - 0.63)
Handover	Fall	0.71(0.68 - 0.75)
	Spring	0.67(0.63 - 0.71)
Leadteam	Fall	0.74(0.71 - 0.76)
	Spring	0.72(0.68 - 0.75)
Leadprof	Fall	0.68(0.64 - 0.71)
	Spring	0.68(0.64 - 0.71)

*All values p<0.001

ROC Curves & AUC(95%CI) for the Fall (A; red) & Spring (B; black) Periods*

	pubhealth	consultation	management
A	0.86 (0.83 - 0.89)	0.89(0.87 - 0.91)	0.81(0.78 - 0.84)
B	0.89(0.87 - 0.91)	0.87(0.85 - 0.89)	0.82(0.79 - 0.84)

	handover	leadteam	leadprof
A	0.89(0.87 - 0.91)	0.89(0.87 - 0.91)	0.87(0.84 - 0.89)
B	0.87(0.85 - 0.89)	0.88(0.86 - 0.90)	0.86(0.83 - 0.88)

*For all EPAs, p>0.05 fall vs spring

Results

Mean Milestone Score to Predict Entrustment at a Specificity of 0.90 (based upon spring data)

EPA	Mean Milestone Score	Sensitivity
Pubhealth	3.80	0.64
Consultation	3.80	0.57
Management	4.05	0.36
Handover	3.70	0.59
Leadteam	3.85	0.63
Leadprof	3.85	0.61

Conclusions

- Milestone levels for the subcompetencies mapped to each of the 6 common pediatric subspecialty EPAs correlate well with the assigned level of supervision
- This supports a strong relationship between milestone level and level of supervision
- An unweighted mean milestone score has moderate ability to predict entrustment but a score weighted by the relative importance of each subcompetency might improve the model

SPIN Steering Committee

Collaborators