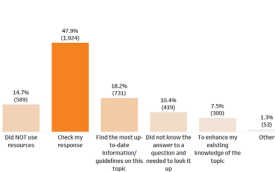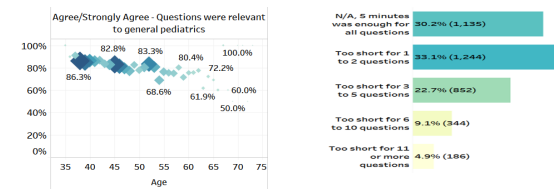# MOCA-Peds Pilot Summary

Summary of the MOCA-Peds pilots in 2017 and 2018, including use patterns, feasibility, acceptability, scoring, and more.

THE AMERICAN BOARD of PEDIATRICS
Certifying excellence in pediatrics – for a healthier tomorrow

We are delighted to share with you the results from our MOCA-Peds Pilot.

MOCA-Peds was developed in 2015-16 as an alternative to the current maintenance of certification (MOC) proctored examination taken at a secure testing center. Hundreds of pediatricians helped develop MOCA-Peds.

In 2017, more than 5,000 pediatricians participated in a yearlong pilot and provided feedback through surveys and focus groups. Almost another 6,000 participated in 2018.

One of our core values at the ABP is transparency and this report was developed with that value in mind.

We welcome your input at mocapeds@abpeds.org.

David G. Nichols, MD, MBA
American Board of Pediatrics
President and CEO

How do I use this report?

This "Slidedoc" report is a novel reporting method being widely adopted by evaluators. Its goal is to increase the breadth of information that can be delivered, decrease text, and provide quick navigation throughout.

Click any item in this running Table of Contents to jump forward or backward.

Click here or anywhere to advance to the next screen.

Click here for a full-screen view.

Click here to access the contents also.

Look for these boxes and highlighted text for important concepts on the page.

Underlined text is hyperlinked and will take you to that page (eg, Table of Contents).

Table of Contents

Click any item to jump ahead

Pilot Overview

- *Brief description of MOCA-Peds*

- *Components of the MOCA-Peds model*

- *Components of the MOCA-Peds platform*

- *Sample questions, rationales, and learning objectives*

- *MOCA-Peds development*

01

What is MOCA-Peds?

"MOCA-Peds" stands for Maintenance of Certification Assessment for Pediatrics.

It is a **new, web-based assessment option** for pediatricians to meet their medical knowledge requirement (Part 3) as part of the ABP's Maintenance of Certification (MOC) program.

Prior to MOCA-Peds, pediatricians were required to visit a **secure test center to take a proctored exam** to meet their MOC requirement.

MOCA PEDS
THE AMERICAN BOARD *of* PEDIATRICS

To ensure that the MOCA-Peds model and web-based platform would be an acceptable and feasible option for pediatricians, the ABP:

- Developed MOCA-Peds with pediatrician input in 2015-16
- Piloted MOCA-Peds in 2017 and 2018 with more than 11,000 pediatricians
- Contracted with **RTI International** for assistance with development and evaluation, including data collection and analysis

This report describes the results of the 2017 and 2018 pilot.

Where does MOCA-Peds fit into certification?

Graduation from Residency

↓

Initial Certification Exam (General Pediatrics)

Proctored Exam

┆

Subspecialty Fellowship

↓

Initial Certification Exam (Subspecialty)

Proctored Exam

→ **Maintenance of Certification (MOC)**

MOCA **PEDS**
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MOCA-Peds or a proctored exam may be taken to fulfill the Part 3 MOC requirement for each certification. MOCA-Peds is not a replacement for the initial certification proctored exam.

Proctored Exam

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What were the components of the model?

Key components of the 2017 and 2018 MOCA-Peds model included:

- 20 questions delivered **each quarter** of the year (80 total questions for each year)
- Questions could be completed **at any time** during that quarter
- **Learning objectives** (question topics) provided before the start of the pilot and available from the home page
- **Answer, references, and rationale given immediately after answer submission**

- **5 minutes** available to answer each question
- **Resources of choice** (eg, books, internet) that could be used while answering questions
- **Question History** page for reviewing answers to completed questions and compare to peers' responses
- **In 2018,** after pediatrician suggestions, **clinical guidelines were added** as optional reading material prior to answering questions. Questions based on these guidelines were later asked in the 2018 pilot.

To be eligible to participate in either year of the pilot, a pediatrician had to:

- Be due to take their MOC Part 3 exam in 2017 or 2018, respectively
- Be meeting MOC requirements
- Complete a registration survey
- Participate in quarterly surveys

What were the components of the platform?

Components of the web-based platform were:

- **Regular reminders** sent via email and optional text message
- **Mobile device access** made available with a dedicated app (iOS/Android)
- **Security maintained by**
  - Personal login to platform
  - Participation Agreement to abide by the MOCA-Peds Code of Conduct (ie, group work and sharing questions not allowed)
  - Questions delivered in random order to each participant

All questions are made available over the internet and can be completed on a computer, laptop, tablet, or smartphone.
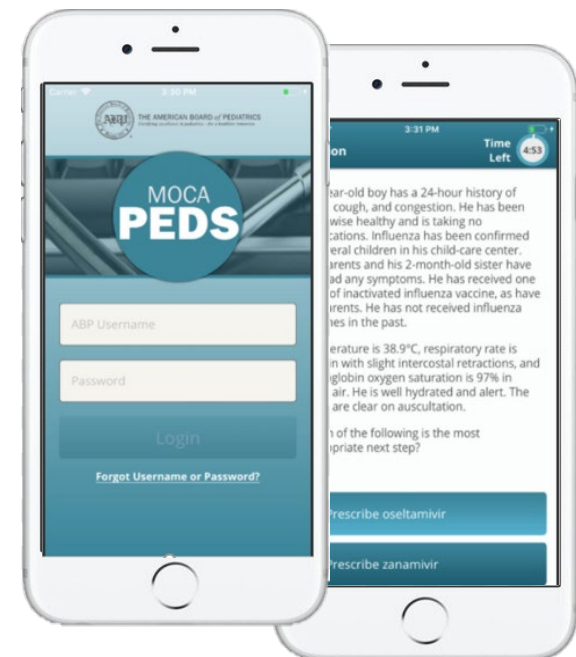
Sample MOCA-Peds question from the 2017 pilot

GENERAL PEDIATRICS

Question

03:56 LEFT

For the past 5 days, a 9-year-old girl has experienced intermittent, bifrontal, "band-like," nonthrobbing headaches associated with neck muscle tightness but no nausea or sensory disturbances. The headaches improve with ibuprofen. She was a passenger in an automobile that was struck head-on by another vehicle 10 days ago. She did not lose consciousness but experienced mild confusion and difficulty sleeping for several days thereafter. Findings on current physical examination are normal.

Which of the following is the most likely diagnosis?

- ○ Postconcussion headache
- ○ Analgesic overuse
- ○ Migraine
- ○ Pseudotumor cerebri
- ○ Subdural hematoma

Submit Answer

By clicking the "Submit Answer" button above, you are attesting to compliance with the **MOCA-Peds Participation Agreement**.

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Timer
5 minutes given for each question. Timer allows participant to track how much time is remaining.

Item/Question Stem and Query
Most questions in MOCA-Peds are delivered as clinical vignettes.

Answer Choices
All MOCA-Peds questions are multiple-choice questions.

Submission Button
Once an answer is selected, it may be submitted using this button. The system will save an answer already chosen in case of a dropped connection before submission.

Sample confidence & relevance question from 2017 pilot

Question: Confidence & Relevance

You have selected:

Postconcussion headache

Why am I being asked this?
Your responses to these questions do not affect your score but may be used in determining the future questions you will receive. A summary of your confidence and relevance ratings as they relate to your individual performance can be found on the My Performance page.

How CONFIDENT are you that you answered this question correctly?

| Not at all | Slightly | Moderately | Very |

How RELEVANT is this question to your practice?

| Not at all | Slightly | Moderately | Very |

Submit Response

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Following each question and prior to seeing the correct answer, pediatricians are asked two questions:

Confidence Question
Pediatricians use this to rate their confidence in their chosen answer.

Relevance Question
Pediatricians use this to rate the relevance of that question to their practice.

These data are:
• Presented to the participants to guide their learning
• Used by the ABP to develop better questions

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Sample MOCA-Peds response from 2017 pilot
Top of answer feedback screen

From the Home Page
A personalized question history, annual learning objectives, and personalized performance report are available from the menu on the left.

Answer Feedback
With each question, the correct and incorrect answers are explained.

Learning Objective
This identifies the specific learning objective for this question. The total list of learning objectives is available from the home page.

Rationale
See next page.

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Sample MOCA-Peds response from 2017 pilot
Bottom of feedback screen

Learning Objective
This identifies the specific learning objective for this question. The total list of learning objectives is available from the home page.

Rationale
Rationales are written by the pediatricians who also write the original question. The rationale explains the reason one answer is correct and other options are incorrect.

References
References are included for each question. References in the public domain are prioritized.

How was MOCA-Peds developed prior to launch?

The initial MOCA-Peds model was developed by ABP staff based on literature reviews, review of other assessment models, and expert consultation.

In 2016, a total of 41 meetings were held with pediatricians to seek their ideas for refining the MOCA-Peds model. Many participated in focus groups or in user panels. Their feedback led to multiple refinements to the initial MOCA-Peds model and the web-based platform.

May 2015
Board of Directors Decision
ABP decided to pursue pilot of a new assessment model

Jul 2015
Call for Participation
72,353 certified pediatricians were emailed seeking their participation in focus groups and a user panel

Feb-Dec 2016
Pilot Registration Opens
Eligible pediatricians were invited to participate via a registration survey

Sep 2016
Pilot Launch
5,081 general pediatricians and subspecialists registered to participate

Future of Testing Conference
Introduced the idea of new assessment model to the ABP

Jun 2015
Public Announcement
Starting pilot for General Pediatrics in 2017

Jan 2016
Stakeholder Meetings
41 total meetings with focus groups and user panel group

Sep 2016
Beta Testing Begins
User panel and other volunteers test online

Jan 2017

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Participants

➢ *Pilot participants*

➢ *Participant distribution by age, gender, and medical school graduation type*

02

Who registered to participate in the 2017 and 2018 pilots?

Of 6,814 eligible pediatricians 5,081 (74.6%) registered for the 2017 pilot. In 2018, 7,562 were eligible and 6,025 (79.7%) registered.

In both years, of those registered:
- ~73% were general pediatricians
- ~27% were subspecialists maintaining both their subspecialist certification and General Pediatrics certification.

Most registrants completed all questions in the pilot. A few completed only a few questions and/or opted out over the course of their pilot year. Of these who did not register, the majority took the proctored exam at a secure testing center.

Participants by Certification Area*

		2017 Pilot		2018 Pilot	
		Participant Count	Participant %	Participant Count	Participant %
General Pediatrics	General Pediatrics	3,712	73.1%	4,381	72.7%
Subspecialists**	Neonatal-Perinatal Medicine	318	6.3%	379	6.3%
	Pediatric Emergency Medicine	167	3.3%	244	4.0%
	Pediatric Critical Care Medicine	174	3.4%	180	3.0%
	Pediatric Hematology-Oncology	128	2.5%	148	2.5%
	Pediatric Cardiology	113	2.2%	108	1.8%
	Pediatric Infectious Diseases	68	1.3%	104	1.7%
	Pediatric Endocrinology	64	1.3%	86	1.4%
	Pediatric Gastroenterology	58	1.1%	74	1.2%
	Pediatric Nephrology	46	0.9%	56	0.9%
	Pediatric Pulmonology	59	1.2%	50	0.8%
	Adolescent Medicine	46	0.9%	39	0.6%
	Developmental-Behavioral Pediatrics	48	0.9%	36	0.6%
	Child Abuse Pediatrics	20	0.4%	32	0.5%
	Pediatric Rheumatology	28	0.6%	31	0.5%
	Hospice and Palliative Medicine*	7	0.1%	22	0.4%
	Sports Medicine*	11	0.2%	20	0.3%
	Sleep Medicine*	7	0.1%	18	0.3%
	Neurodevelopmental Disabilities*	6	0.1%	8	0.1%
	Pediatric Transplant Hepatology*			6	0.1%
	Medical Toxicology*	1	0.0%	3	0.0%
Totals		5,081	100.0%	6,025	100.0%

*Data from ABP's Certification Management System and the 2017 and 2018 Registration Surveys.
**Only accounts for a pediatrician's first subspecialty certification.

What do we know about those who registered for the pilot in 2017 and 2018?

Age Distribution

Close to half of the pilot registrants were 40-49 years of age.
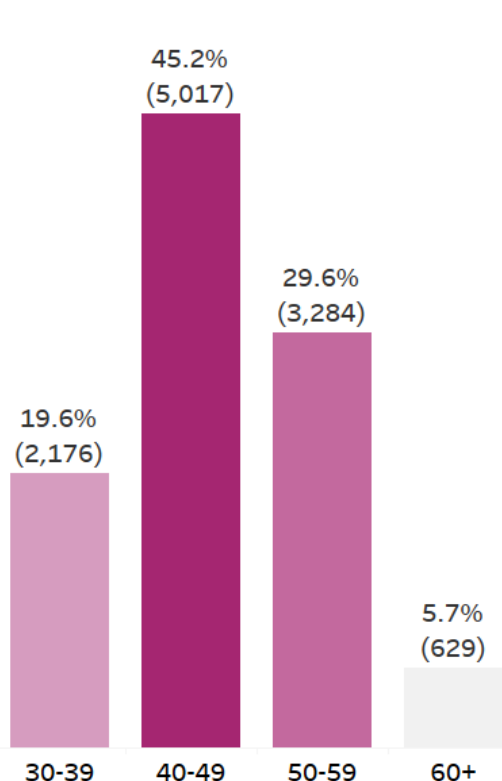
Gender Distribution

66.7% (7,412) of pilot registrants were female; 33.3% (3,694) were male.

Medical School Location Distribution

77.5% (8,605) of pilot registrants attended American medical schools; 22.5% (2,501) attended international medical schools.

2017-18 Differences

While data from both years are combined here, distributions between pilot years were extremely similar among these demographics.

Age distribution was skewed toward older pediatricians compared to the overall pediatric workforce because eligible participants were at least 5 years removed from their initial certification date.

Gender and medical school location distributions closely matched the overall pediatric workforce. For more information about the overall pediatric workforce, please visit the ABP website.

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What were attitudes toward learning and technology?

In the 2017 and 2018 Registration Surveys, participants were asked several questions about lifelong learning and technology prior to starting the pilot. These results suggested that participants would appreciate the added features that promote learning and that a web-based platform would be feasible for the majority of participants.

96.9% of pediatricians "Agreed or Strongly Agreed" that lifelong learning is a professional responsibility of all physicians.

Lifelong Learning
- 86.5% "Agreed or Strongly Agreed" that they routinely participate in Continuing Medical Education programs (eg, live events, online courses) to improve patient care.
- 70.3% "Agreed or Strongly Agreed" that they routinely search computer databases to find out about new developments in pediatrics.
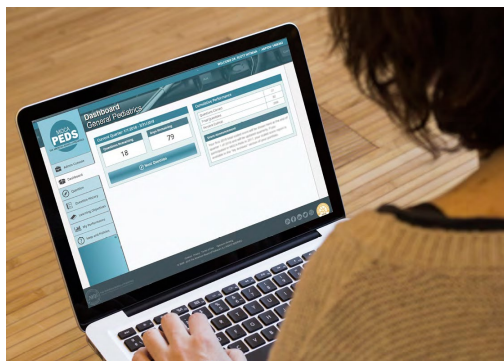
Comfort with Technology
- Nearly all pediatricians were at least moderately comfortable with a computer/laptop (99.7%).
- A small number were not comfortable with smartphone (3.8%) and tablet usage (7.4%).
- All but 1.3% were at least moderately comfortable finding clinical information online.

Access to Technology
- Only 12 individuals (0.1%) indicated limited access to the internet.
- 56.6% indicated having access to an academic library. This was associated with employment at an academic medical center.

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Pilot Questions & Answers (Q&A)
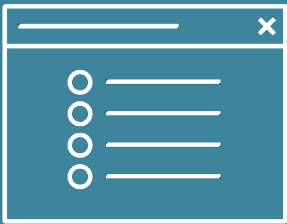
- ➤ *Question relevance to clinical practice*

- ➤ *Question relevance to general pediatrics*

- ➤ *Usefulness of rationales and references given*

03

Were questions relevant to your clinical practice?

Very Relevant 27%

Moderately Relevant 58%

Slightly Relevant 13%

Not Relevant 2%
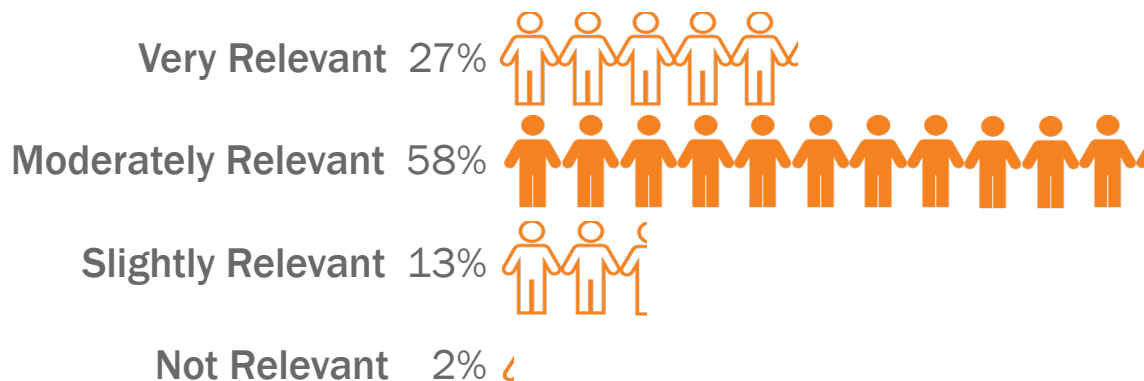
How is the ABP using this and other information to improve MOCA-Peds?

This information helps us to understand the relevance of the MOCA-Peds questions to general pediatrics.

In addition, participants are asked to rate each question for its relevance to their personal practice. Participants can also comment following each question if they disagree with the answer. During the two years of piloting, over 13,700 comments were sent and reviewed by the volunteer question writers and ABP staff.

Ultimately, the ratings and comments help the ABP to build a better assessment, including the delivery of more relevant questions to individual pediatricians.

Following each MOCA-Peds question, pediatricians were asked to rate the relevance of that individual question to their personal practice.

 An example of this question can be found on page 10.

As shown above, **85% of the questions had their most common rating as either "Very Relevant" or "Moderately Relevant" in 2018, up from 78% in 2017.**

This rises to 90% if analyzing only general pediatricians' relevance ratings from MOCA-Peds.

Pictogram data from the MOCA-Peds system in 2018 with n=+450,000.

Were questions relevant to general pediatrics?

In both years of the pilot, there was strong agreement that questions were relevant to general pediatrics. For example, from the **2017–Quarter 4 Survey, 81.5% (3,268) "Agreed or Strongly Agreed" that questions were relevant to general pediatrics**. These results were similar for all of the quarterly surveys.

This graph displays percent agreement by age. The size and color of each diamond indicates the number of participants at that age (the darkest/largest diamond represents 347 pediatricians at age 38). Overall, there was not a great deal of difference by age.

These results include both general pediatricians and pediatric subspecialists.

Participant Perception of Question Relevance (Agree/Strongly Agree) by Age

"Neither disagree or agree", "Disagree," or "Strongly disagree" are not represented here. Data from the 2017–Quarter 4 Survey (n=4,016).
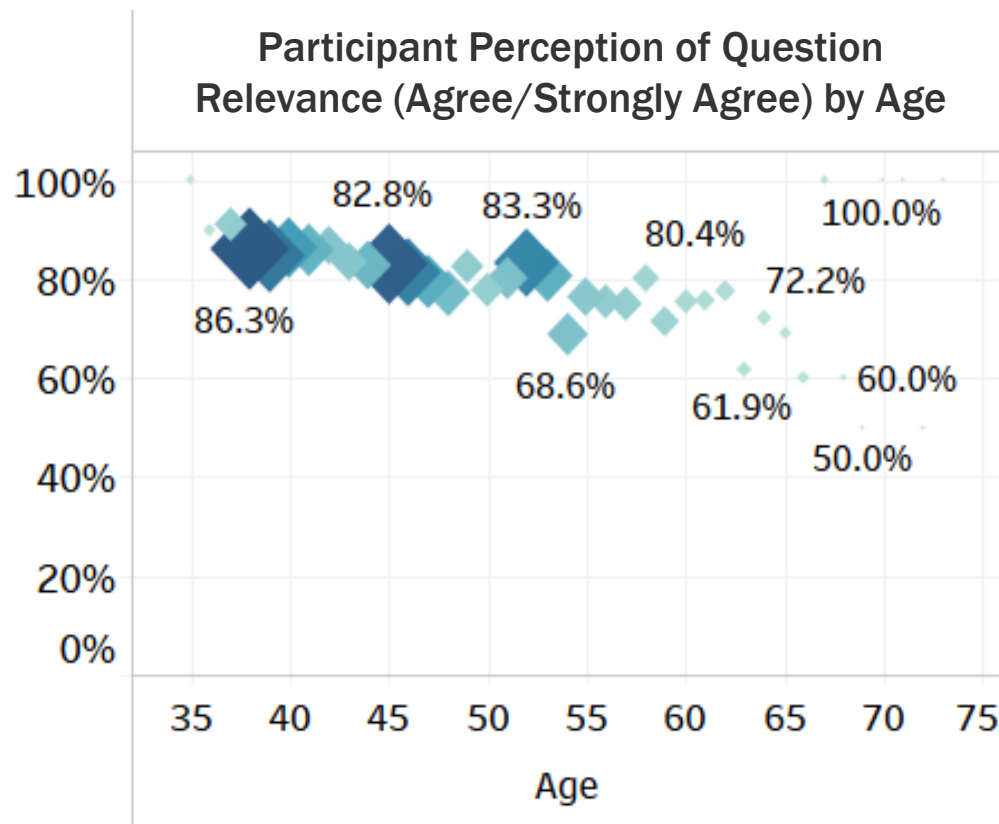
How useful were the feedback components provided?

References

54% of pediatricians rated the references as "Moderately," "Very," or "Extremely Useful."

54%
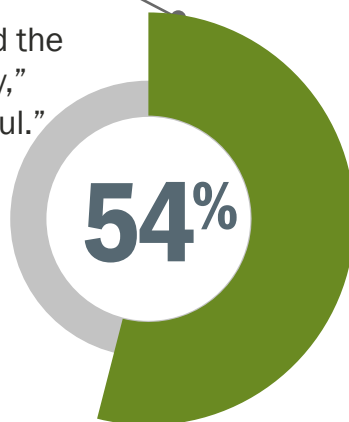
Rationales

93% of pediatricians rated the rationales as "Moderately," "Very," or "Extremely Useful."

93%

66%

Question History Page

66% of pediatricians rated the question history page (accessing prior question and answer feedback) as "Moderately," "Very," or "Extremely Useful."
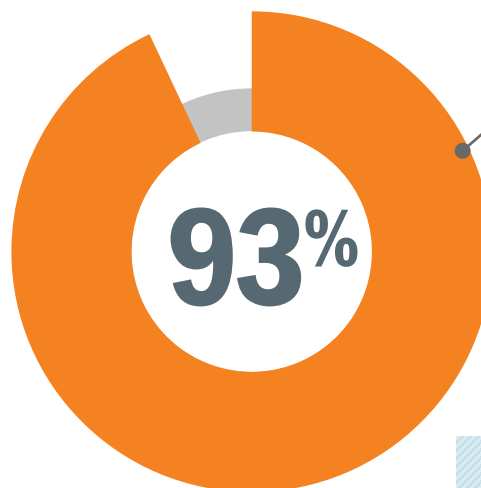
Rationales provided after the question were clearly cited as the most useful component of MOCA-Peds.
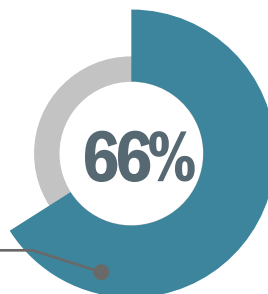
When answering a question incorrectly, 94% said they "Frequently or Very Frequently" read the rationale.

Conversely, when answering correctly, 66% said they "Frequently or Very Frequently" read the rationale.

Data from the 2017–Quarter 4 Survey (n=4,016). Results in the 2018–Quarter 3 Survey were similar to within 1-3% points.

Using Resources

➢ *Use of resources across quarters*

➢ *Most common resources used and reasons for use*

➢ *Clinical guidelines within MOCA-Peds*

04

Were resources (eg, internet, books) used during questions?

Resource Usage During Questions by Quarter

I did NOT use resources during this quarter
- 2017 - Quarter 1: 19.2% (803)
- 2017 - Quarter 3: 15.8% (594)
- 2018 - Quarter 1: 13.6% (579)
- 2018 - Quarter 3: 13.7% (575)

With 1 to 5 questions
- 2017 - Quarter 1: 42.6% (1,782)
- 2017 - Quarter 3: 39.9% (1,499)
- 2018 - Quarter 1: 40.4% (1,722)
- 2018 - Quarter 3: 39.7% (1,668)

With 6 to 10 questions
- 2017 - Quarter 1: 22.2% (928)
- 2017 - Quarter 3: 25.0% (940)
- 2018 - Quarter 1: 25.4% (1,082)
- 2018 - Quarter 3: 26.0% (1,091)

With more than 10 questions
- 2017 - Quarter 1: 16.0% (668)
- 2017 - Quarter 3: 19.4% (728)
- 2018 - Quarter 1: 20.7% (883)
- 2018 - Quarter 3: 20.7% (870)

Following each quarter, the evaluation surveys asked if resources were used *while* answering individual questions.

The majority reported using resources for one or more questions. This percentage increased during the pilot and from 2017 to 2018.

The most popular resources were:
- Search engines (eg, Google, Yahoo)
- UpToDate
- Government websites (eg, CDC, NIH, NICHD)
- Professional sites (eg, AAP)

Data from Quarterly Surveys as indicated (n=varies by quarter). Quarters 1 and 3 are shown for comparison across years.

Why were pediatricians using resources?

Participants' Report of Resource Use in 2017 and 2018
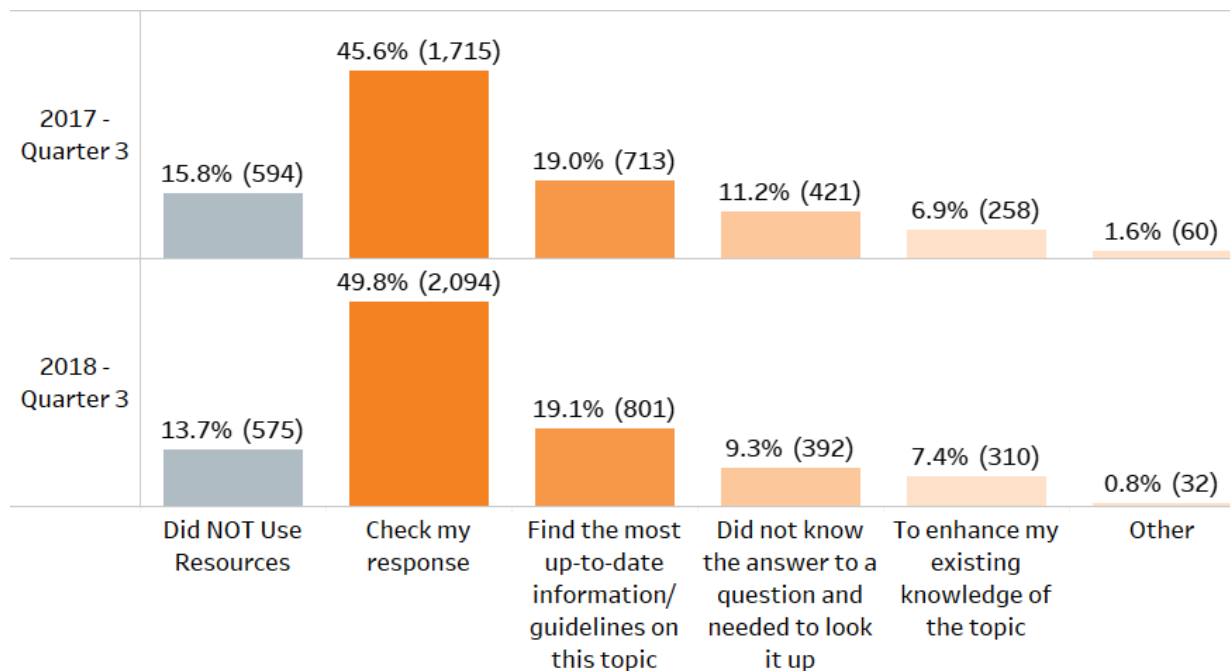
Resource use varied from question to question. When asked, approximately half of participants said they were primarily using resources to "check my response."

Data from 2017–Quarter 3 Survey (n=3,761) and 2018–Quarter 3 Survey (n=4,206).

Why were clinical guidelines implemented and what was the outcome?

Since the beginning of the ABP's efforts to collect feedback from pediatricians in stakeholder meetings, a common request has been to give participants earlier access to resources if possible.

These requests led the ABP to pilot test the inclusion of clinical guidelines in 2018, particularly for relatively new information where a guideline was applicable.

In 2018, the two guidelines were included with the learning objectives and could be accessed throughout the year. Each participant received about two questions per guideline, delivered randomly in quarters 2-4.

By the Numbers:

- 27.3% were unaware that they could access guidelines on the platform.
- Of those who did know about the guidelines in advance:
  - 72.0% read them prior to taking questions.
  - 88.0% thought the time for reading the articles was feasible for their schedule.
  - 93.2% agreed that it helped them stay current in general pediatrics.

Based on these and other positive responses, guidelines and articles will be included in future iterations.

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Time

Several perspectives on participants' "time" in the pilot (eg, average time per question, time in preparation, total time spent)

➤ *Quarterly participation*

➤ *Weekly participation*

➤ *Time taken to answer questions*

➤ *Time spent preparing*

➤ *Time spent on MOCA-Peds overall*

05

When did participants complete their quarterly questions?

Participants Completing Each Quarter by Weeks Remaining

Legend: 2018–Q1, 2018–Q2, 2018–Q3, 2018–Q4, 2017

Y-axis: Proportion of Quarterly Participants
X-axis: Weeks Remaining in Quarter
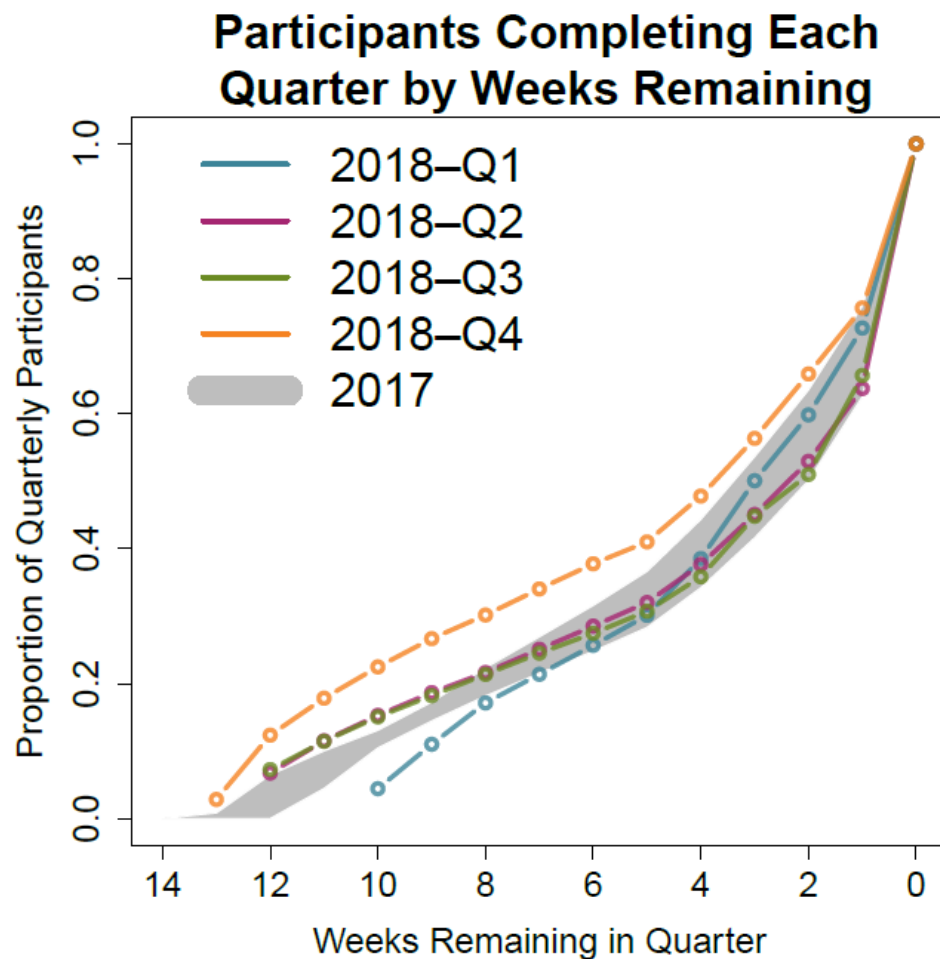
Participants could complete their questions any time during the quarter, which typically aligned with calendar quarters. They could also answer questions across the quarter in any way that worked best for them (eg, doing several questions a week or doing all at one time).

This graph shows the number of participants completing questions by the weeks remaining in the quarter for each quarter. The quarter's deadline is week 0. The gray region represents quarterly completion in 2017.

Other data not displayed on this graph showed that **many participants completed their 20 questions in batches** (eg, in one sitting). For example, when comparing start and stop times in 2017–Quarter 4, 62% answered all 20 questions in one batch, within 2 hours. This includes untimed portions such as reading answer rationales.

Completion dates for Quarters 1–4 of 2017 and 2018 taken from MOCA-Peds system.

How long did it take to answer MOCA-Peds questions?

While 5 minutes were available to answer each individual question, the average time spent reading the question and submitting an answer was 1 minute, 54 seconds (114s). This decreased slightly in 2018 to 1 minute, 48 seconds (108s).

Although a large percentage of questions were answered within 1 or 2 minutes (about 62% in 2017 and 70% in 2018), the response times varied per pediatrician by question.

This did not include time spent answering confidence and relevance prompts, nor reading the answer's rationale and other materials.

2017 and 2018 Median Item Response Times

2017 Median Item Response Time Distribution (Line)

2018 Median Item Response Time Distribution (Bar)

Percentage of Items — Time in Minutes
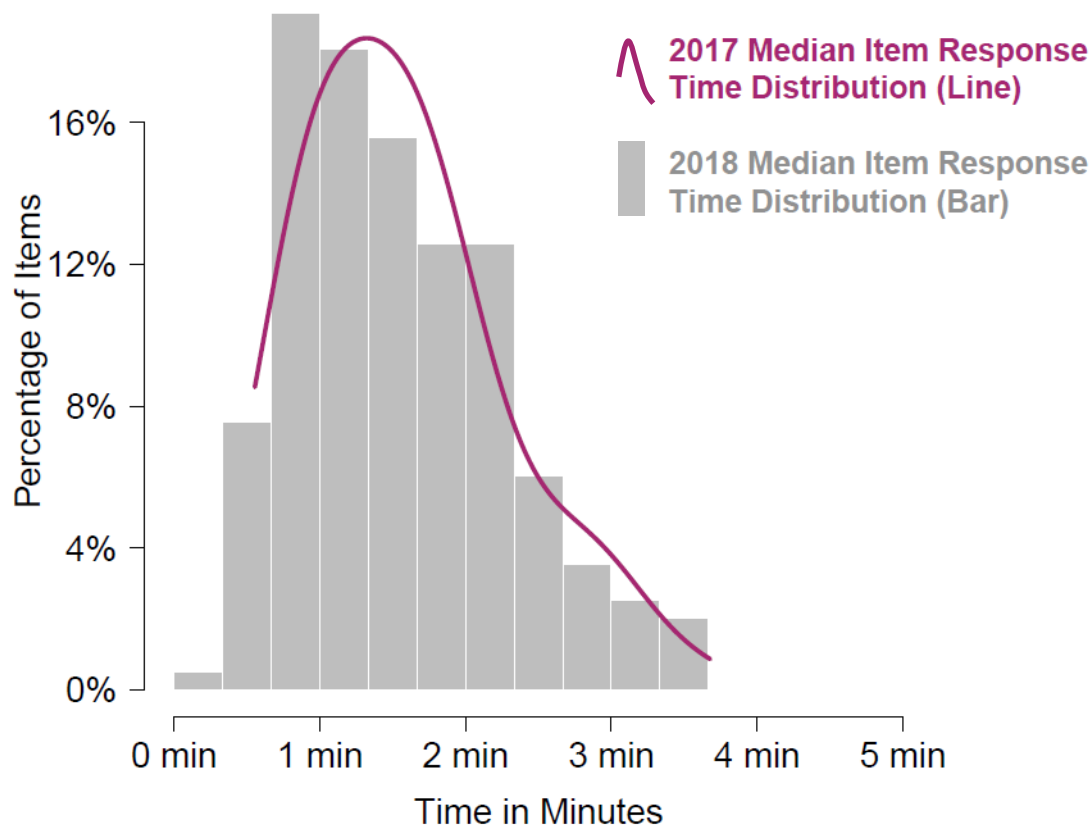
Is there enough time to answer questions?

Although the average time to answer a question was under 2 minutes, data on the previous graph showed that some questions took longer. On the evaluation surveys, some pediatricians asked for more time per question.

To better understand whether there was sufficient time to answer the questions, the ABP asked two related questions in the Quarter 3 Evaluation Survey:

Survey Question 1) "I had enough time to answer each question."
In 2017–Quarter 3, **78.8% of participants answered "Agreed or Strongly Agreed."**

Survey Question 2) "How often did you feel the 5-minute time limit was too short for questions within each quarter (20 questions)?" Combined 2017-2018 results shown in the graph to the right indicate **that 64% felt this was true for two or fewer questions. About 13% felt this was true for six or more questions.**

Participant Perceptions of 5-Minute Time Limit

N/A, 5 minutes was enough for all questions — 29.9% (2,383)

Too short for 1 to 2 questions — 34.3% (2,735)

Too short for 3 to 5 questions — 22.3% (1,775)

Too short for 6 to 10 questions — 8.8% (704)

Too short for 11 or more questions — 4.6% (368)

Data from 2017–Quarter 3 Survey (n=3,761) and 2018–Quarter 3 Survey (n=4,206).
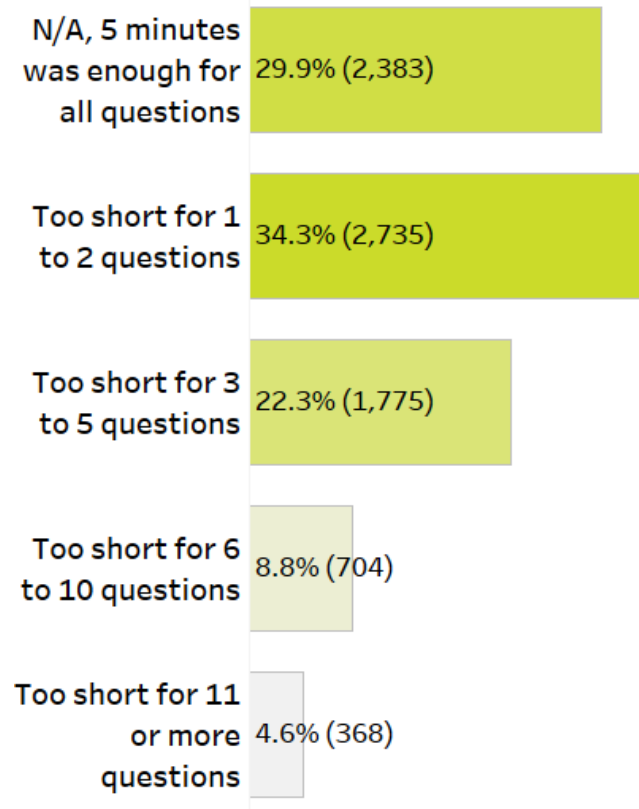
Before starting, how much time did pediatricians study?

Preparation Time Before Starting Questions by Quarter

I did not prepare in advance	2017 - Quarter 1	54.7% (2,285)
	2017 - Quarter 3	55.4% (2,084)
	2018 - Quarter 1	49.6% (2,118)
	2018 - Quarter 3	55.0% (2,314)
< 2 hours	2017 - Quarter 1	14.1% (591)
	2017 - Quarter 3	18.1% (679)
	2018 - Quarter 1	17.4% (744)
	2018 - Quarter 3	18.1% (760)
2 to < 10 hours	2017 - Quarter 1	17.2% (718)
	2017 - Quarter 3	18.7% (702)
	2018 - Quarter 1	18.4% (783)
	2018 - Quarter 3	17.5% (736)
10 to < 20 hours	2017 - Quarter 1	7.1% (297)
	2017 - Quarter 3	4.6% (172)
	2018 - Quarter 1	6.7% (287)
	2018 - Quarter 3	5.3% (221)
> 20 hours	2017 - Quarter 1	6.9% (290)
	2017 - Quarter 3	3.3% (124)
	2018 - Quarter 1	7.8% (334)
	2018 - Quarter 3	4.1% (173)

Participants varied greatly in their preparation habits. About half of those participating in MOCA-Peds did not prepare before taking questions.

There were no significant differences by quarter. Across the quarters, however, preparation time appears to decrease minimally for those participating.

The most popular preparation resources were:
- UpToDate
- AAP's PREP® The Curriculum
- Search engines (eg, Google, Yahoo)
- Professional sites (eg, AAP)

Data from Quarterly Surveys as indicated (n=varies by quarter). Quarters 1 and 3 are shown for comparison across years.

How much time was spent preparing for and participating in MOCA-Peds overall?

In the 2017–End-of-Pilot Survey, pediatricians self-reported on the overall time spent on the pilot, including all facets (eg, studying, taking questions, reading rationales, and reviewing question histories). 2018 data were not collected as no survey was given after full pilot completion.

A large number (~50%) of participants reported no preparation for MOCA-Peds before taking questions.

For example, in 2017–Quarter 4, about 61% of participants reported the usefulness of the learning objectives, offered at the beginning of the year. This increased to 66% in 2018–Quarter 3.

Hours Spent Overall	% Responding
< 5 hours	26.6%
5 to < 10 hours	26.5%
10 to < 20 hours	22.7%
20 to < 40 hours	15.8%
> 40 hours	8.4%

Data from the 2017–End-of-Pilot Survey (n=2,856) and 2017–Quarter 4 Survey (n=4,016).

Scoring Results
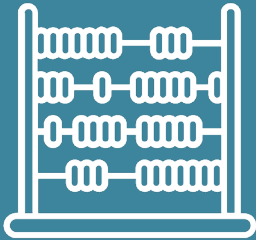
- ➤ *Standard setting*

- ➤ *Scaled scoring*

- ➤ *Passing rate for the pilot*

- ➤ *Implications for 2019 and beyond*

- ➤ *Comparison to proctored exam*

06

How was the passing score determined for the pilot?

Standard Setting and Equating

For all of its assessments (including MOCA-Peds), the ABP brings in practicing pediatricians to participate in a well-established psychometric process known as "standard setting" that is used to determine the "passing score" or "cut score."

For the 2017 pilot, a panel of pediatricians, both MOCA-Peds participants and non-participants, were brought to the ABP to help set the passing score.

This passing score was then carried forward into 2018 via a process known as equating. Equating accounts for differences in exam form difficulty to ensure all pediatricians are held to the same standard, regardless of the difficulty of their individual questions.

What is a scaled score and how is it used?

Scaled Scoring

The ABP reports each individual pediatrician's performance using "scaled scores," which are simply **scores reported on a consistent scale (for the ABP, 1-300) which are adjusted to account for the difficulty of the questions a pediatrician receives (equated).**

Because pediatricians are randomly assigned a set of questions from a larger pool of available questions, the equating and scaling processes help to ensure that scores are comparable between participants over time, and that a participant is neither advantaged nor disadvantaged by receiving a slightly easier or harder set of questions.

In the 2017 and 2018 pilot, a final scaled score of 1 corresponded to about 5%-10% correct or fewer, and a scaled score of 300 corresponded to approximately 95% correct or greater.

After calculating scaled scores at the end of the year, individual score reports were made available in mid-January 2019. See the sample report to the right.

End-of-Year Score Report

MOCA-Peds: General Pediatrics Pilot
2018 Score Report

Name: XXXXXXX, XXXXXXX   Scaled Score: 252
ABP ID#: ########   Pilot Result: Pass

To account for the pilot status of the MOCA-Peds program, the passing score for 2018 has been set at 160. Beginning in 2019, the passing score will be 180, consistent with all other ABP exams. The graph below shows your score relative to the pilot passing score and the distribution of scaled scores for all 2018 pilot participants.

2018 MOCA-Peds Pilot Score Distribution

Pilot Passing Score 160
Your Score 252
All Participants
N = 5967
Mean = 225
SD = 32

If you have questions regarding the content of this report, please contact the ABP at scoring@abpeds.org.

THE AMERICAN BOARD of PEDIATRICS

What was the MOCA-Peds passing rate in 2017?

Prior to starting the pilot, the ABP decided to set the MOCA-Peds *pilot passing standard score at 160 for the 2017 and 2018 pilot years.* This is slightly lower than the 180 standard score used for all other ABP examinations.

This was to take into account any issues related to the pilot year as the web-based platform was tested and revised

Passing Rate

With the **passing standard set at 160, 96% of all registered participants in the 2017 pilot passed.** This includes individuals who registered but did not complete any MOCA-Peds questions. If we limit the analysis to **those who completed 60 questions or more, 98% passed** (average scaled score of 223 on a scale of 1 to 300).

2017 MOCA−Peds Pilot Score Distribution

Pilot Passing Standard 160

2019 Passing Standard 180

All Participants
N = 5071
Mean = 221
SD = 34

Percentage of Participants at that Scaled Score

Scaled Score

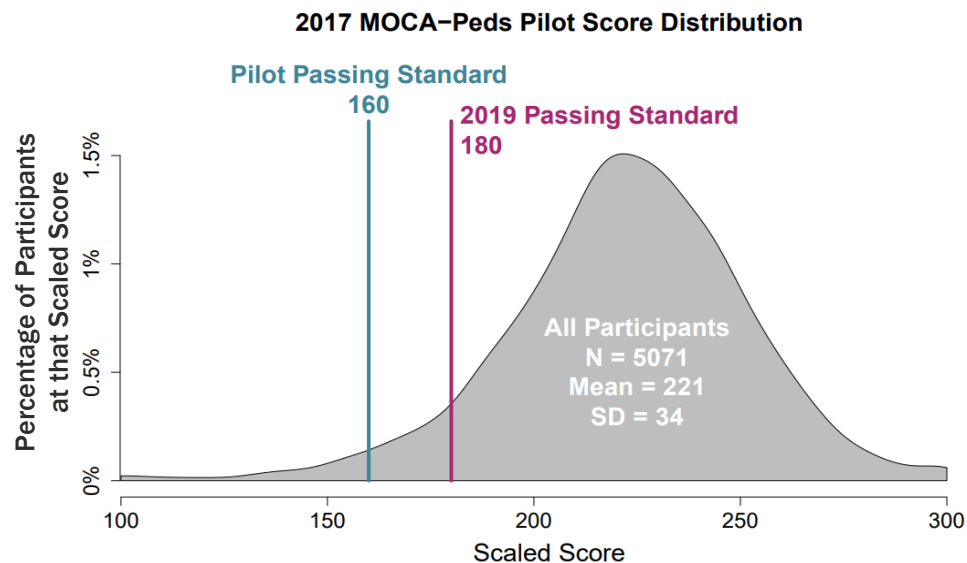*Accounts only for those that did not opt out during the 2017 pilot from the 5,081 that started.

What was the MOCA-Peds passing rate in 2018?

Passing Rate

With the **passing standard set at 160, 96% of newly registered participants in the 2018 pilot passed.** This includes individuals who registered but did not complete any MOCA-Peds questions. If we limit the analysis to **those who answered at least one question, 97% passed** (average scaled score of 224 on a scale of 1 to 300). **Those answering all 80 questions had a passing rate of 99.7%.**

The passing rates in 2017 and 2018 were very similar. Additionally, participants who met the standard in 2017 had the option of continuing to participate in 2018 for Part 2 credit. Their passing rates were similar.

Percent Pass Rate % (N)

	New participants in 2018
All who registered for MOCA-Peds	96% (5,967*)
Answered at least one question	97% (5,894)
Answered all 80 questions	99.7% (5,644)

*Accounts only for those that did not opt-out during the 2018 pilot from the 6,025 that started. Those who opted out were not scored.

What is the projected passing rate once the pilot is complete?

Starting in 2019, the passing standard score will be set at 180, consistent with all other ABP examinations.

97% of the participants in the 2018 pilot who completed all 80 questions would have passed if the passing standard had been set to 180 instead of 160. This is a 1% increase from 96% in 2017.

This passing rate is consistent with the passing rate for the proctored MOC exam in 2018 and 2017.

Based on these data, the ABP anticipates that the majority of pediatricians who actively participate in MOCA-Peds will meet the passing standard.

2018 MOCA−Peds Pilot Score Distribution

Pilot Passing Standard 160

2019 Passing Standard 180

N = 5967
Mean = 221
SD = 42

Percentage of Participants at the Scaled Score

Scaled Score

*Accounts only for those that did not opt out during the 2018 pilot from the 6,025 that started.
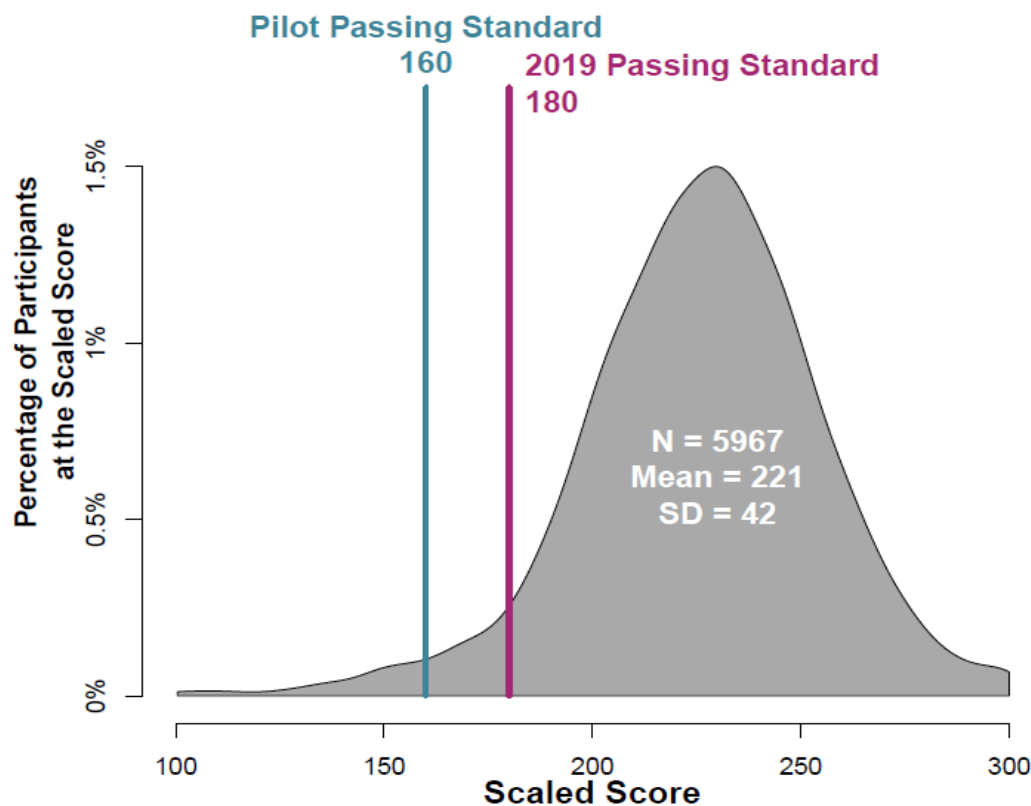
How did MOCA-Peds compare to the proctored exam?

Using Item Difficulty to Assess the Validity of MOCA-Peds
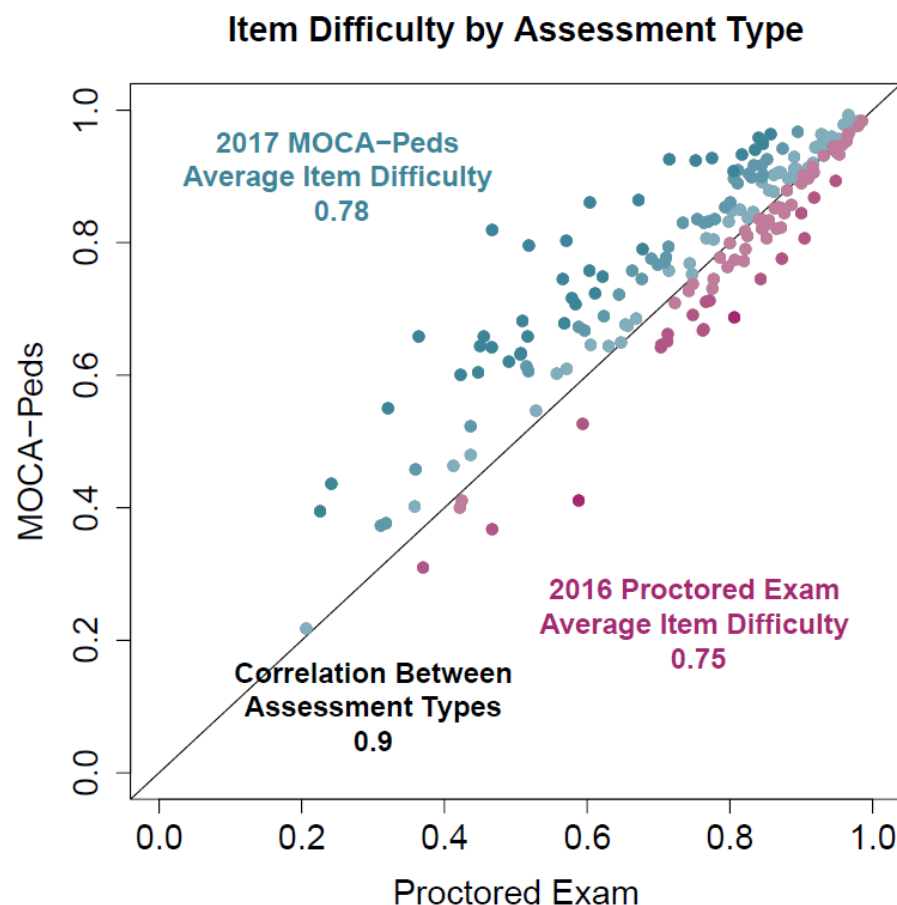
To help validate the assessment properties of MOCA-Peds, questions asked in the MOCA-Peds pilot were administered on the MOC proctored exam.

ABP staff then looked at the item difficulty for each question. The item difficulty describes the proportion of test takers who answered that particular question correctly. Item difficulty ratings for MOCA-Peds were compared to the 2016 proctored exam.

Sample Results from 2016-17

The 2017 MOCA-Peds and 2016 proctored exam item difficulties are shown in the accompanying figure. There was a strong, positive correlation between item difficulties on the 2017 pilot and the 2016 proctored exam, showing that items performed similarly between the two testing modalities. The mean difference in item difficulties of 0.03 shows that test takers performed slightly better on the items, on average, when they had access to resources of their choice.

Item Difficulty by Assessment Type

2017 MOCA−Peds Average Item Difficulty 0.78

2016 Proctored Exam Average Item Difficulty 0.75

Correlation Between Assessment Types 0.9

MOCA−Peds (y-axis) · Proctored Exam (x-axis)

Learning

➢ *Proctored exam versus MOCA-Peds*

➢ *Learning from participation*

➢ *Learning and practice change*

07

How do learning opportunities compare between MOCA-Peds and the proctored exam?

MOCA-Peds

One of the primary reasons the ABP chose to pilot MOCA-Peds was to increase the available learning opportunities for pediatricians while still providing an assessment of medical knowledge and clinical judgement.

Learning opportunities in the MOCA-Peds pilot include:

- Opportunity to review 40 learning objectives prior to completing any questions, as opposed to the proctored exam where questions may be on any topic in the content outline
- Opportunity to use resources while answering questions
- Inclusion of rationale and references following each question
- Opportunity to complete another question on the same learning objective, later in the year, to reinforce previously reviewed material
- Inclusion of question history page to review past questions and answers
- Inclusion of peer benchmarking for each question

Proctored Exam

Focus groups were held with practicing pediatricians in 2016 to provide input on the development of MOCA-Peds. The two most common statements about the proctored exam were:

- "I cram for the exam and forget everything after the fact."
- "No feedback is given on how I did on the exam except a score."

Focus group participants were generally excited about the anticipated learning opportunities in the pilot.

How did MOCA-Peds effect learning and practice change?

Respondent Self-Report of Learning and Clinical Practice Change, 2017-18

In both pilot years, the ABP asked whether participants had learned new information and if they were able to apply any of that information to practice change. In 2017, the survey questions came after pilot completion and in 2018, it came after Quarter 3.

In both instances, over 97% (6,885) of participants surveyed said they had learned, refreshed, or enhanced their medical knowledge through participation in MOCA-Peds.

Those who answered "Yes" were then asked, "**Were you able to apply any of what you learned to your clinical practice?**"

Yes, I have already	2017 - End-of-Year	62.0% (1,727)
	2018 - Quarter 3	56.8% (2,327)
No, but I plan to moving forward	2017 - End-of-Year	16.8% (468)
	2018 - Quarter 3	23.5% (965)
No, because my practice area is not general pediatrics focused	2017 - End-of-Year	16.2% (451)
	2018 - Quarter 3	16.5% (676)
No, for any other reason	2017 - End-of-Year	5.1% (141)
	2018 - Quarter 3	3.2% (130)

Data from the 2017–End-of-Pilot Survey (n=2,856) and 2018–Quarter 3 Survey (n=4,206).

What are examples of pediatrician practice change?

In 2017, over 1,400 responded to "What was the most significant practice change(s) you made as a result of participation in the 2017 pilot?" Many commented that they were conducting a more thorough patient history or reading new guidelines.

Over 800 pediatricians mentioned a specific practice change. Many noted a specific clinical area matching to one of the pilot's learning objectives. A preliminary analysis for 2017 is below. 2018 results are currently under analysis.

Number of Pediatricians in 2017 Mentioning a Specific Learning Objective in Their Practice Change or Knowledge Update (the Top Ten)

Learning Objective	Number
Plan the management of a child with otitis media.	109
Manage a child with an acute asthma exacerbation.	47
Plan the management of a child with influenza.	44
Plan the evaluation of a child with hypertension.	37
Distinguish between causes of short stature.	34
Evaluate and manage a child with proteinuria.	33
Plan immunizations for a patient with egg allergy.	25
Evaluate and manage a child with a corneal abrasion.	18
Recognize the morbidities commonly associated with ADHD.	15
Distinguish normal and abnormal speech development and…	13

Data from the 2017–End-of-Pilot Survey data (preliminary analysis of the 1,464 responses to the "most significant practice change" question).

What are specific examples of pediatrician practice change?

Some quotes from "<u>What was the most significant practice change(s)</u> **you made as a result of participation in the 2017 pilot?"**

"I identified a Kawasaki pt based on review - not common in our practice – potentially life saving; that is just one instance…"

"1. I became aware of my deficiency in acute drug intoxication 2. Honestly, I thought I was better at behavioral pediatrics than this assessment indicated; I will work on that 3. Excellent review of allergies"

"The pilot helped me see where my deficiencies were in evaluating developmental milestones in well child care."

"Started to pay attention to features of Autism."

"I'm a neonatologist with a follow-up clinic for babies discharged from the NICU. In many areas I realized that some of my practice in the clinic might have been dated. I now have far more frequent discussions with both my general and subspecialty peds colleagues regarding the outpatient care of my former patients seen in their clinics. Having to go read up on the topics I got wrong in my answers was also enlightening […] I truly believe that this should be the way of the future to ensure practitioners keep up to date."

Data from the 2017–End-of-Pilot Survey (1,464 response to the "most significant practice change" question).
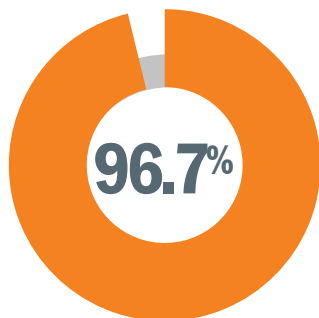
Conclusions

➢ *Pediatricians' choices about MOCA-Peds versus the proctored exam*

➢ *Feasibility of MOCA-Peds*

➢ *ABP's decisions about MOCA-Peds*

08

Will participants choose MOCA-Peds in the future?

The majority of pilot participants in 2017-18 prefer MOCA-Peds for their General Pediatrics certification over a proctored exam.

96.7%

Of all participants responding to the 2017–End-of-Pilot Survey and the 2018–Quarter 3 Survey, **96.7% (n=6,830) said they would rather use the operational version of MOCA-Peds (starting in 2019) to maintain** their General Pediatrics certification than the proctored exam. This included both general pediatricians and subspecialists.

1.0% (n=73) preferred the proctored exam and 2.2% (n=157) were not going to continue to maintain their general pediatrics certification.

The majority of subspecialty pilot participants in 2017-18 prefer MOCA-Peds for their subspecialty certification over a proctored exam.

96.1%
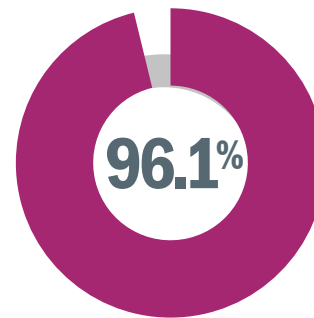
Of the 1,851 subspecialists responding to the 2017–End-of-Pilot Survey and the 2018–Quarter 3 Survey, **96.1% (n=1,778) said they would rather participate in the operational version of MOCA-Peds (once available in their subspecialty) to maintain their subspecialty certification** than the proctored exam.

1.7% (n=31) would prefer the proctored exam and 2.3% (n=42) were not going to continue to maintain their subspecialty certification.

Data from the 2017–End-of-Pilot Survey (n=2,856) and 2018–Quarter 3 Survey (n=4,206).

Is MOCA-Peds feasible for pediatricians?

The data below explore pediatricians' attitudes toward participating in MOCA-Peds on a regular basis beyond a 1-year pilot. Please continue to the "What's Next" section for a more in-depth explanation of the operational version of MOCA-Peds starting in 2019.

In 2017-18, participants read a description of how the ABP planned to implement the operational version of MOCA-Peds in 2019. They were then asked to rate its feasibility.

The MOCA-Peds requirement to complete 20 questions per quarter over the course of an MOC cycle will be feasible for my schedule.	Agree and Strongly Agree	2017 - End-of-Year	82.9% (2,368)
		2018 - Quarter 3	80.4% (3,380)
	Neutral	2017 - End-of-Year	7.2% (207)
		2018 - Quarter 3	9.1% (383)
	Disagree and Strongly Disagree	2017 - End-of-Year	9.8% (281)
		2018 - Quarter 3	10.5% (441)
Automatically dropping the four lowest quarters during participation in years 1-4 AND taking year 5 off will be adequate to account for life events.	Agree and Strongly Agree	2017 - End-of-Year	85.4% (2,439)
		2018 - Quarter 3	82.5% (3,470)
	Neutral	2017 - End-of-Year	8.2% (233)
		2018 - Quarter 3	10.6% (447)
	Disagree and Strongly Disagree	2017 - End-of-Year	6.4% (184)
		2018 - Quarter 3	6.8% (287)

Data from the 2017–End-of-Pilot Survey (n=2,856) and 2018–Quarter 3 Survey (n=4,206).

Based on positive feedback from the 2017-18 MOCA-Peds pilot, those of us serving on the ABP's Board of Directors approved MOCA-Peds as an alternative for meeting the assessment requirement in continuing certification.

While most participants preferred MOCA-Peds, the ABP Board of Directors is committed to providing choice and feasibility for pediatricians maintaining their certification. Therefore, the proctored exam will continue to be an option for those who prefer it over MOCA-Peds.

All of us on the ABP Board of Directors hope that MOCA-Peds helps pediatricians to identify their personal knowledge gaps, learn new information as it becomes available, and continue applying what they learn to improve care to their patients.

Thank you to all the pilot participants for your openness to trying a new ABP program and for your honest feedback. Together, we can continue to improve the ABP's continuous certification program and help children and families.

Ann E. Burke, MD

2018 Chair, ABP Board of Directors

Wright State University Boonshoft School of Medicine
Professor of Pediatrics
Director, Pediatric Residency Training Program

What's Next

➔

➢ *2019 launch for General Pediatrics*

➢ *Subspecialty certificates launching in 2019 and after*

➢ *Changes to MOCA-Peds starting in 2019*

➢ *Personalizing MOCA-Peds*

09

1 Pilot Overview
2 Participants
3 Pilot Q&A
4 Resources
5 Time
6 Scoring
7 Learning
8 Conclusions
9 What's Next
10 Sources

What is happening in 2019?

If you are a pediatrician and want to learn about your options, please log in to your ABP Portfolio.

To learn more about MOCA-Peds, please visit our website.

General Pediatrics

Starting in January 2019, those scheduled to start MOCA-Peds will transition into the operational version of MOCA-Peds instead of the pilot version.

Pediatric Subspecialties *in* 2019

Also starting in January 2019, the ABP has launched operational versions of MOCA-Peds for three pediatric subspecialties:

- *Child Abuse Pediatrics*
- *Pediatric Gastroenterology*
- *Pediatric Infectious Diseases*

Pediatric Subspecialties *after* 2019

The ABP plans to make MOCA-Peds available to several subspecialties each year through 2022. Launch dates have been planned for the remaining pediatric subspecialties. Those anticipated dates can be found on our website.

For now, the Part 3 proctored exam requirement for subspecialties has been postponed until MOCA-Peds is available for that subspecialty.

What changes are coming in 2019 and beyond?

For those participating in 2019, *the operational version of MOCA-Peds will look slightly different than the 2017-18 pilots*. Many of these changes are based on pediatrician feedback received during the pilot.

Questions/Repeat Questions

In the pilot, each of the 40 learning objectives had two related questions on that topic area (80 total questions).

Starting in 2019, 45 learning objectives will be provided each year. There will be at least one question per learning objective with some of the questions being repeated based on whether the question was answered correctly and ratings on confidence and relevance.

Featured Readings

Additionally, MOCA-Peds will include questions on recently published articles and/or guidelines. These will be provided for early review prior to the assessment start each year.

The ABP's article selection criteria require that articles:

- Have been recently published
- Define/reshape standard of care
- Are either a systematic review or meta-analysis
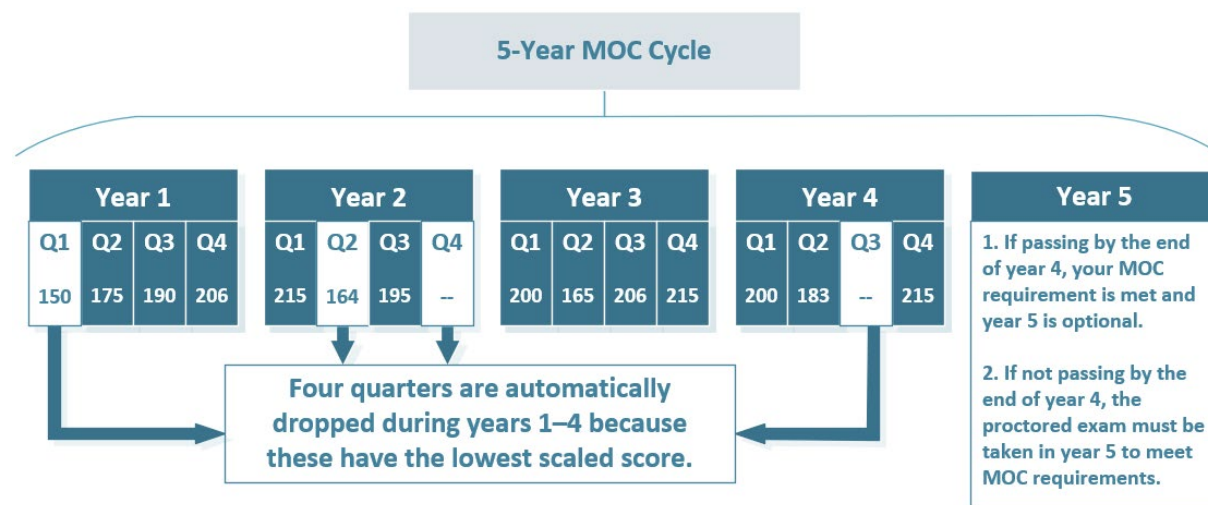- Include new evidence or have important clinical implications

Altogether, a pediatrician will receive around 60–72 questions per year starting in 2019.
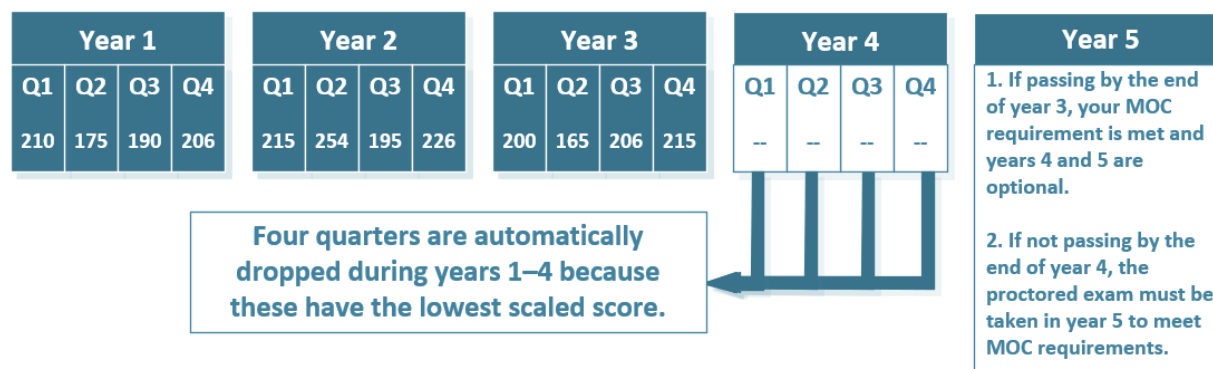
What changes are coming in 2019 and beyond?

Beginning in 2019, MOCA-Peds will run through an entire MOC Cycle, but...

- Year 5 is optional if one meets the passing standard across years 1–4.
- If a pediatrician does not meet the passing standard, he or she will need to take the proctored exam in year 5 to meet MOC requirements.
- To increase flexibility and account for life circumstances, each pediatrician's lowest-scoring four quarters will be dropped in years 1–4.

Example 1. MOCA-Peds with four dropped quarters throughout years 1–4

5-Year MOC Cycle

	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	150	175	190	206	215	164	195	--	200	165	206	215	200	183	--	215

Year 5
1. If passing by the end of year 4, your MOC requirement is met and year 5 is optional.
2. If not passing by the end of year 4, the proctored exam must be taken in year 5 to meet MOC requirements.

Four quarters are automatically dropped during years 1–4 because these have the lowest scaled score.

Example 2. MOCA-Peds with four dropped quarters in year 4

	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	210	175	190	206	215	254	195	226	200	165	206	215	--	--	--	--

Year 5
1. If passing by the end of year 3, your MOC requirement is met and years 4 and 5 are optional.
2. If not passing by the end of year 4, the proctored exam must be taken in year 5 to meet MOC requirements.

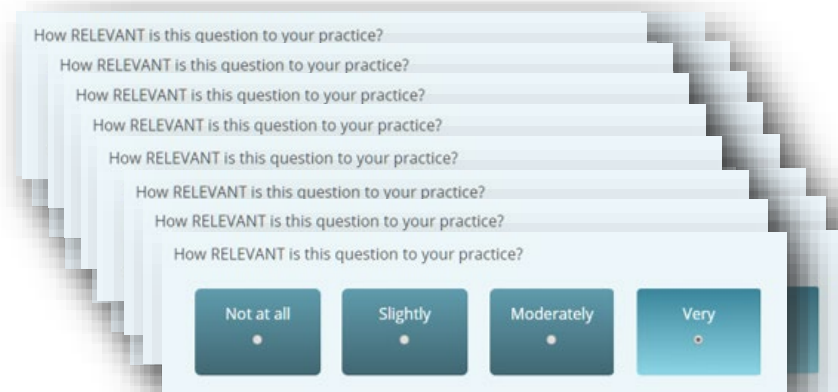Four quarters are automatically dropped during years 1–4 because these have the lowest scaled score.

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How are we personalizing MOCA-Peds for your practice?

The ABP assess a wide variety of knowledge for each certificate; however, we recognize that pediatricians practice in a variety of settings and there will be differences in relevance across topic areas for individual pediatricians. To improve the MOCA-Peds experience, we aim to personalize the assessment where possible.

When you give a relevance rating after you answer each MOCA-Peds questions, we use your ratings to train a predictive model. **This machine–learning algorithm predicts how relevant future questions will be for you.** MOCA-Peds uses those predictions to serve you the most relevant item possible on a given topic.

The system is limited only in that the MOCA-Peds assessment must cover all the required material within general pediatrics or the subspecialty area being assessed; however, we attempt to deliver the most relevant question possible to you within the required areas.

Sources/Info

➢ *Survey data sources*

➢ *Other data sources*

➢ *Thank you*

10

What survey data sources were used?

Pilot participants were invited to share their perspectives in numerous surveys. All surveys were administered by RTI International and responses were anonymized before any results were shared with ABP staff.

Registration Surveys

These were delivered prior to MOCA-Peds in the fall of 2016 and 2017. Each functioned to register participants for the pilot and to collect basic demographic information.

Quarterly Evaluation Surveys

*Each of these surveys were sent via email within 1–3 weeks of a participant completing 20 quarterly questions and only if they completed that quarter's questions.

End-of-Year Survey

**This survey was sent *only* to those participants in 2017 who met the passing standard for the pilot. Participation was not required.

Survey Type	Eligibility to Participate	Invited to Participate	Completed Survey	Participation Rate
2017–Registration	Proctored exam due in 2017	6,814	5,081	74.6%
2017–Quarter 1	Completed Quarter 1, 2017	5,015*	4,181	83.4%
2017–Quarter 2	Completed Quarter 2, 2017	4,913*	3,773	76.8%
2017–Quarter 3	Completed Quarter 3, 2017	4,923*	3,761	76.4%
2017–Quarter 4	Completed Quarter 4, 2017	4,936*	4,016	81.4%
2017–End-of-Year	Met 2017 pilot passing standard	4,855**	2,856	58.8%
2018–Registration	Proctored exam due in 2018	7,562	6,025	79.7%
2018–Quarter 1	Completed Quarter 1, 2018	5,686*	4,266	75.0%
2018–Quarter 3	Completed Quarter 3, 2017	5,788*	4,206	72.7%

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Other data sources

Google Analytics

The MOCA-Peds system is linked into the free Google Analytics site. Google Analytics anonymously captures key statistics (eg, web access counts, site navigation patterns, time on page).

MOCA-Peds System

When participants log in to MOCA-Peds, the IT system captures a number of data points such as "time spent per question" and "start/stop times for each MOCA-Peds quarter."

Focus Groups and User Panels

Although not discussed in detail, more than 25 focus groups and user panels were held between 2016–18. The groups reviewed survey responses, provided feedback on MOCA-Peds questions and online platform, and provided input about communication materials to pediatricians.

THANK YOU

Thank you to the 5,000+ pediatricians who participated in MOCA-Peds in 2017. MOCA-Peds would not have been possible without your willingness to try something new and your commitment to lifelong learning.

Thank you to ABP staff who worked on developing, designing, coding, making decisions on, and supporting MOCA-Peds.

Thank you to the 200+ pediatricians who met with us for focus groups and user panels in 2016-17. Your time was invaluable in developing MOCA-Peds.

Thank you to the MOCA-Peds Task Force, General Pediatrics Committee, Content Development Teams, and subspecialty Subject Matter Experts for taking dedicated time out of your practice to help write new questions and rationales for the 2017 and 2018 pilots, the 2019 subspecialty launches, and MOCA-Peds going forward.