

Effect of longitudinal clerkship model and preceptor continuity on student learning and skills in obstetrics and gynecology

Brooke E Schroeder¹, Jessie Li-Barton², Jennifer Howell³, Melody Baldwin⁴, Jordan Schaumberg⁵, Tracey Reynolds⁶, Sarah Wright⁷, Poonam Sharma⁸, and Sarah K Dotters-Katz⁹

¹BS, Medical Student, Duke University School of Medicine, Durham, United States

²MD, Resident physician, Department of Obstetrics and Gynecology, Duke University Medical Center, Durham, United States

³MD, Professor, Department of Obstetrics and Gynecology, Duke University Medical Center, Durham, United States

⁴MD, MPH, Assistant Professor, Department of Obstetrics and Gynecology, Duke University Medical Center, Durham, United States

⁵MD, Assistant Professor, Department of Obstetrics and Gynecology, Duke University Medical Center, Durham, United States

⁶BA, PIONEER Program Coordinator, Duke University School of Medicine, Durham, United States

⁷BA, Undergraduate Medical Education Program Coordinator, Duke University Medical Center, Durham, United States

⁸MD, Associate Professor, Department of Medicine, Duke University Medical Center, Durham, United States

⁹MD, MMHPE, Professor, Department of Obstetrics and Gynecology, Duke University Medical Center, Durham, United States

Abstract

Background: Longitudinal and amalgamative clerkship models enhance medical education through faculty continuity, mentorship, and targeted feedback. A United States allopathic medical school piloted a 16-week longitudinal clerkship (PIONEER), including one half-day of obstetrics and gynecology (OB/GYN) clinic per week. This study assessed the impact of preceptor continuity on student knowledge and procedural experience during the OB/GYN portion of PIONEER. **Methods:** This cross-sectional study (August 2023–July 2024) surveyed PIONEER students on OB/GYN knowledge, procedural experience, and preceptor continuity. Students were categorized into “high” or “low” continuity experiences based on Likert responses. Outcomes included changes in knowledge and procedural exposure, with secondary analyses comparing procedural opportunities across the academic year and to the OB/GYN traditional block clerkship. **Results:** Among 83 respondents (76.1% response rate),

71.1% reported low continuity with OB/GYN preceptors. Knowledge and procedural experience did not differ between continuity groups (all $p > 0.05$). PIONEER students’ procedural opportunities remained consistent across the year and exceeded those of traditional clerkship students (e.g., 25.7-fold increase in students performing >10 breast exams; 1.6-fold increase for pelvic exams). **Discussion:** These exploratory findings suggest that meaningful educational experiences can occur in OB/GYN amalgamative longitudinal clerkships even with variable preceptor continuity. Importantly, PIONEER preserved a core benefit of longitudinal models—greater procedural exposure—while highlighting the need for future research to more comprehensively evaluate the contributions of preceptor, patient, and location continuity to student learning.

Keywords: clinical education, obstetrics and gynecology, longitudinal integrated clerkship

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Email: Brooke E Schroeder (brooke.schroeder@duke.edu)

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Background

Longitudinal integrated clerkship (LIC) models and their adaptations, such as amalgamative clerkships, enhance medical student education by promoting stronger faculty mentorship, clinical autonomy, and

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efficacy in patient-centered care compared to traditional clerkship models.¹⁻⁵ These benefits have been largely attributed to the continuity with preceptors and clinical space, which allow for more personalized teaching and feedback, as well as

integration into clinic workflow.⁶⁻¹⁰ There also appear to be educational advantages, as students in longitudinal clerkships have demonstrated comparable or superior performance on standardized shelf and board examinations.¹¹ Beyond academic and clinical gains, longitudinal clerkships have been shown to influence students' career choices, particularly by increasing interest in primary care and rural medicine—fields facing ongoing workforce shortages.¹¹⁻¹³ Historically, these longitudinal programs have focused on specialties such as family medicine, pediatrics, and internal medicine. Although Ford et al. included obstetrics and gynecology (OB/GYN) in its longitudinal model, the study did not examine OB/GYN-specific learning or procedural experience.¹² Similarly, Beattie et al., based in Australia, noted that general practice obstetrics was an option within their longitudinal clerkship, but only described increased interest in the field, rather than detailing OB/GYN-specific educational outcomes.¹³

Despite their success in primary care and rural medicine, the effect of longitudinal clerkship models remains underexplored in OB/GYN. Continuity-based clinical experiences in OB/GYN may provide additional opportunities for procedural experience, as preceptors gain more confidence with student capabilities.¹⁴ Like in primary care, longitudinal OB/GYN clerkships may improve clinical education, increase student satisfaction, and influence specialty choice.^{15,16} However, longitudinal preceptorship in OB/GYN presents challenges due to the varied schedules of OB/GYN clinicians, who divide their time between clinic, the operating room, and labor and delivery (including overnight call), and may not be able to precept a student at the same time each week. These barriers highlight the need to examine how different longitudinal clerkship structures function when integrating specialties like OB/GYN.

There have been multiple frameworks proposed for classifying longitudinal clerkships and their adaptations. One widely cited typology by Worley and colleagues outlines three main types:¹⁷ First, comprehensive LICs, the most common in the literature, are year-long experiences in which students are paired with specific preceptors and follow a patient panel across settings; these models maximize continuity but are resource-intensive and challenging to implement at scale. Secondly, blended or hybrid LICs combine traditional block rotations with longitudinal experiences for a majority of the year, offering breadth and flexibility

but typically reduced continuity.¹⁸ Finally, amalgamative clerkships, by contrast, integrate multiple specialties and occupy less than half of the academic year, making them more feasible for institutions but often providing weaker longitudinal relationships. Within these adaptations, continuity may occur at the level of patients, teachers, or location. Continuity-of-location models—where students rotate in the same clinical environment but with different preceptors—have been described as a “stabilizing factor” for learners.¹⁹ However, some argue that without sustained student-preceptor relationships, such models may be neither fully integrated nor longitudinal, and it is unclear whether these models can replicate the benefits of more traditional, comprehensive LICs.

This study investigates this question in the context of OB/GYN, a specialty with scheduling challenges, by examining whether continuity-of-location models can still yield meaningful longitudinal and educational benefits. It evaluates how student-perceived preceptor continuity within an amalgamative longitudinal OB/GYN clerkship shapes student learning and procedural experience. Despite the growing interest in longitudinal clerkship models, there is a paucity of literature on how preceptor continuity affects learning experiences in OB/GYN. This study had two aims: (1) to evaluate whether student-perceived preceptor continuity influenced knowledge and procedural experience in an amalgamative OB/GYN clerkship; and (2) to compare student procedural experiences across trimesters and with the traditional OB/GYN clerkship model. In doing so, we seek to better understand how continuity models can be adapted to meet the challenges of OB/GYN education, while preserving the established benefits of comprehensive LICs.

Methods

Subjects and setting

During the 2023–2024 academic year, a United States allopathic medical school introduced PIONEER, a 16-week outpatient **amalgamative clerkship** model. Because it spans multiple specialties yet occupies less than half of the academic year, the model fits what the literature describes as an “amalgamative clerkship,” an LIC-inspired approach that lengthens each rotation beyond the usual block.¹⁷ This structure was selected to ensure every student could participate within a single academic year (one-third of the class rotated in each trimester). Students spent one half-day each week in OB/GYN clinic while

simultaneously engaging in several other outpatient disciplines over the full 16 weeks.

Medical students still completed a four-week inpatient OB/GYN clerkship separately from the outpatient portion. After Institutional Review Board (IRB) approval and exemption (Pro00111517), this cross-sectional study was conducted from August 2023 to July 2024 to evaluate students' OB/GYN outpatient experiences during the first year of the PIONEER curriculum. Participants were asked to complete a voluntary, anonymous survey, and students were informed that responses would be kept confidential and would not affect their grades or clerkship evaluations. The study sample included all medical students who participated in the 16-week PIONEER outpatient OB/GYN clerkship during the 2023–2024 academic year and completed the end-of-course survey. The study population therefore represents students enrolled in the PIONEER curriculum at our institution, while the target population includes medical students participating in longitudinal or amalgamative OB/GYN clerkships more broadly, for whom these findings may provide preliminary insights.

Data collection

A 13-item e-survey was developed to assess comfort with OB/GYN-specific topics and common office procedures, as well as perceived preceptor continuity (concepts and skills evaluated are summarized in Table 1). The survey was piloted for clarity and reviewed by subject matter experts. Then, all clerkship students were asked to complete

the anonymous 13-item e-survey at the end of their PIONEER clerkship, with two reminder emails. The change in skill comfort and knowledge was defined as the difference between Likert-scale responses, using a retrospective pre/post survey design. Students were also asked to estimate how many procedures they personally observed and how many they performed (defined as “hands-on”) during their 16-week PIONEER block. Total procedural participation was defined as the number of observed plus “hands-on” procedures.

For the primary aim of the study, students were divided into “high continuity” and “low continuity” OB/GYN experiences based on predefined response groupings to distinguish differences in perceived preceptor consistency. Given the lack of established thresholds in the literature, these groupings were determined based on face validity, with responses reflecting the student's perception of consistent preceptor exposure classified as “high continuity” (e.g. “I had good continuity, AND it was better than other specialties”) and those indicating limited continuity classified as “low continuity” (e.g. “I did not have good continuity in OB/GYN”). This approach allowed for a practical comparison of student experiences within the continuity-of-location model.

For the secondary aim, we examined whether the timing of PIONEER within the academic year influenced observed and hands-on procedural experiences. We also compared students' observed and hands-on procedural experiences in PIONEER

Table 1: Core OB/GYN concepts and skills. Metrics assessed in the end-of-clerkship survey administered to longitudinal clerkship students, based on APGO Medical Student Educational Objectives. Students rated their comfort with each concept or skill before and after PIONEER on a scale from 1 (Extremely uncomfortable) to 5 (Extremely comfortable).

Core OB/GYN concepts	Core OB/GYN skills
Contraception	
Prenatal care	
Abnormal uterine bleeding	
Pelvic pain	
Menopause	
Pregnancy of unknown location	
Infertility	
Vaginal discharge	
	Speculum exam
	Bimanual exam
	Breast exam
	Fundal height
	Fetal heart tone
	Point-of-care ultrasound (POCUS)

to those of traditional clerkship students from the prior academic year (2022–2023). For the former clerkship model, the data was collected from an end of the clerkship feedback survey (100% response rate), which asked students to report their estimated number of procedures in a categorical fashion (none, 1-5, 6-10, >10).

Data analysis

Data were analyzed using **descriptive statistics** and **bivariate analyses** (Mann-Whitney U tests for pairwise comparisons, Kruskal-Wallis tests for multi-group comparisons, and Fisher's exact test for categorical comparisons), chosen due to the non-parametric nature of the data. Statistical significance was set at **p<0.05**. Analyses were conducted using **Python 3.12.7** with relevant libraries (e.g., SciPy, Pandas).

Results

Respondent characteristics

In total, 89 of 109 (81.6%) medical students responded to the survey, with response rates of 80.5% (n = 29/36, 1st), 81.1% (n = 30/37, 2nd), and 66.7% (n = 24/36, 3rd) per trimester. Of these students, six were missing responses (by trimester: n=2 from 1st, n=1 from 2nd, and n=3 from 3rd) about perceived continuity and were excluded (total included n = 83). Nearly three-quarters of students (n = 59/83, 71.1%) reported that they perceived a lack of continuity with their OB/GYN preceptors.

Effect of preceptor continuity on student knowledge and procedural experience

All skills and knowledge improved over the rotation for both groups (Table 2). The only significant difference in student comfort between groups was for menopause-related concepts (p=0.01). No

Table 2: Change in knowledge and comfort for OB/GYN concepts and skills based on student-perceived preceptor continuity. Measure is the difference between Likert scale* pre- and post-PIONEER (values expressed as means (+/- standard deviations))

	High continuity (N = 24)		Low continuity (N = 59)		Difference in post- PIONEER knowledge (high – low)	P-value
	Post- PIONEER knowledge	Increase in knowledge	Post- PIONEER knowledge	Increase in knowledge		
Contraception	4.29 (+/- 0.46)	1.3 (+/- 1.0)	4.1 (+/- 0.74)	1.4 (+/- 1.0)	0.19	0.96
Prenatal care	4.17 (+/- 0.7)	2.0 (+/- 1.0)	3.8 (+/- 0.89)	1.7 (+/- 1.2)	0.37	0.24
Abnormal uterine bleeding	4.12 (+/- 0.61)	1.8 (+/- 1.3)	3.9 (+/- 0.8)	1.5 (+/- 1.0)	0.23	0.27
Pelvic pain	4.0 (+/- 0.78)	1.7 (+/- 1.2)	3.68 (+/- 0.88)	1.3 (+/- 1.0)	0.32	0.17
Menopause	4.33 (+/- 0.48)	2.1 (+/- 1.1)	3.83 (+/- 0.85)	1.4 (+/- 1.0)	0.50	0.01**
Pregnancy of unknown location	3.5 (+/- 1.02)	1.3 (+/- 1.1)	2.88 (+/- 1.08)	0.8 (+/- 0.9)	0.62	0.06
Infertility	3.29 (+/- 1.04)	1.2 (+/- 1.0)	2.9 (+/- 1.09)	0.9 (+/- 1.0)	0.39	0.17
Vaginal discharge	4.46 (+/- 0.51)	1.5 (+/- 1.3)	4.14 (+/- 0.74)	1.2 (+/- 1.3)	0.32	0.49
Speculum exam	4.17 (0.7)	2.2 1.2)	4.0 (0.85)	1.1)	0.17	0.47
Bimanual exam	2.88 (+/- 1.26)	1.3 (+/- 1.0)	2.95 (+/- 1.22)	1.2 (+/- 1.1)	-0.07	0.82
Breast exam	4.0 (+/- 0.98)	1.5 (+/- 1.0)	4.24 (+/- 0.88)	1.6 (+/- 1.0)	-0.24	0.59
Fundal height	4.58 (+/- 0.72)	2.5 (+/- 1.1)	4.41 (+/- 0.81)	2.5 (+/- 1.1)	0.18	0.98
Fetal heart tone	4.62 (+/- 0.77)	2.3 (+/- 1.2)	4.51 (+/- 0.84)	2.6 (+/- 1.0)	0.12	0.31
POCUS	3.54 (+/- 1.06)	0.7 (+/- 0.8)	3.12 (+/- 1.08)	0.8 (+/- 0.8)	0.42	0.84

*1 = Extremely uncomfortable, 2 = Somewhat uncomfortable, 3 = Neither comfortable nor uncomfortable, 4 = Somewhat comfortable, 5 = Extremely comfortable

**indicates statistical significance

POCUS = Point of care ultrasound

significant differences were observed in other knowledge areas or comfort with procedures (Table 2). Additionally, the differences in OB/GYN conceptual knowledge and procedural comfort between the two groups are unlikely to be educationally significant, as all group means remained within one Likert scale point of each other.

For procedural experience, students in the high continuity group tended to perform more fetal heart tone assessments compared to the low continuity group (16 vs. 13, $p=0.05$). No other statistically significant differences were found in the number of procedures students observed, performed, or participated in, based on perceived preceptor continuity (Table 3). While students in the high continuity group performed more procedures on

average for most skills ($n = 15/24$, 62.5%), these differences were not statistically significant and are unlikely to be of educational importance, with the largest difference being five fetal heart tone assessments (Table 3).

Student procedural experience across trimesters

Across trimesters, students observed an average of 14 pelvic exams, 14 bimanual exams, 11 breast exams, 10 fetal heart tones, and 11 fundal heights. Additionally, they reported performing 11 pelvic exams, 4 bimanual exams, 9 breast exams, and 14 fetal heart tones/fundal heights. The only statistically significant difference across trimesters was for observed and performed gynecologic point of care ultrasound, with the third trimester reporting the least (Table 4). However, students rarely had the opportunity to observe (mean 2.79, range 0-20) or

Table 3: Number of observed and performed procedures based on student-perceived preceptor continuity (values expressed as means (rounded to the nearest whole number) (+/- standard deviations))

	High continuity (N = 24)	Low continuity (N = 59)	Difference (high - low)	P-value
Speculum exams - total	25 (+/- 10.2)	24 (+/- 9.4)	+1	0.92
Speculum exams - observed	13 (+/- 6.5)	14 (+/- 5.7)	-1	0.65
Speculum exams - performed	12 (+/- 5.6)	11 (+/- 4.9)	+1	0.39
Bimanual exams - total	16 (+/- 8.5)	16 (+/- 9.2)	0	0.67
Bimanual exams - observed	13 (+/- 6.1)	14 (+/- 6.1)	-1	0.87
Bimanual exams - performed	3 (+/- 4.7)	4 (+/- 5.3)	-1	0.21
Fetal heart tones - total	27 (+/- 12.4)	22 (+/- 11.4)	+5	0.12
Fetal heart tones - observed	12 (+/- 8.0)	10 (+/- 7.1)	+2	0.46
Fetal heart tones - performed	16 (+/- 6.3)	14 (+/- 6.3)	+2	0.05*
Fundal heights - total	27 (+/- 12.3)	23 (+/- 11.4)	+4	0.16
Fundal heights - observed	12 (+/- 7.8)	10 (+/- 7.0)	+2	0.35
Fundal heights - performed	16 (+/- 6.5)	13 (+/- 6.4)	+3	0.09
Obstetric POCUS - total	8 (+/- 8.2)	5 (+/- 6.7)	+3	0.07
Obstetric POCUS - observed	5 (+/- 5.1)	4 (+/- 4.5)	+1	0.28
Obstetric POCUS - performed	3 (+/- 4.4)	2 (+/- 3.5)	+1	0.09
Gynecologic POCUS - total	3 (+/- 3.5)	3 (+/- 4.7)	0	0.28
Gynecologic POCUS - observed	3 (+/- 2.7)	3 (+/- 4.2)	0	0.09
Gynecologic POCUS - performed	1 (+/- 1.4)	1 (+/- 2.1)	0	0.41
Breast exams - total	20 (+/- 13.9)	20 (+/- 11.7)	0	0.91
Breast exams - observed	12 (+/- 7.2)	11 (+/- 6.8)	+1	0.34
Breast exams - performed	9 (+/- 6.9)	10 (+/- 6.3)	-1	0.73
Pap / STI testing / wet preps - total	22 (+/- 9.9)	18 (+/- 9.5)	+4	0.16
Pap / STI testing / wet preps - observed	12 (+/- 6.7)	11 (+/- 5.7)	+1	0.38
Pap / STI testing / wet preps - performed	10 (+/- 5.1)	9 (+/- 5.5)	+1	0.24

POCUS = Point of care ultrasound

STI = Sexually transmitted infection

*indicates statistical significance (p -value < 0.05)

Table 4: Number of observed and performed procedures compared across trimesters (values expressed as means (rounded to the nearest whole number) (+/- standard deviations))

	1 st trimester (N = 29)	2 nd trimester (N = 30)	3 rd trimester (N = 24)	P-value
Speculum exams				
Observed	15 (+/- 5.5)	14 (+/- 6.0)	12 (+/- 6.2)	0.44
Performed	12 (+/- 5.2)	11 (+/- 4.6)	10 (+/- 5.6)	0.35
Bimanual exams				
Observed	15 (+/- 5.2)	14 (+/- 6.3)	11 (+/- 6.5)	0.11
Performed	5 (+/- 6.6)	4 (+/- 3.6)	3 (+/- 4.6)	0.78
Fetal heart tones				
Observed	11 (+/- 7.0)	10 (+/- 7.5)	9 (+/- 7.9)	0.79
Performed	15 (+/- 6.2)	14 (+/- 6.6)	14 (+/- 6.6)	0.75
Fundal heights				
Observed	10 (+/- 7.2)	11 (+/- 7.3)	11 (+/- 7.5)	0.76
Performed	15 (+/- 6.4)	14 (+/- 6.5)	12 (+/- 6.4)	0.33
Obstetric POCUS				
Observed	3 (+/- 3.6)	5 (+/- 5.8)	4 (+/- 4.2)	0.51
Performed	1 (+/- 1.6)	3 (+/- 4.1)	3 (+/- 5.0)	0.32
Gynecologic POCUS				
Observed	3 (+/- 4.0)	3 (+/- 4.4)	1 (+/- 1.5)	0.02*
Performed	0 (+/- 0.4)	1 (+/- 2.0)	1 (+/- 2.5)	0.03*
Breast exams				
Observed	11 (+/- 7.2)	11 (+/- 6.8)	10 (+/- 6.9)	0.76
Performed	10 (+/- 6.7)	10 (+/- 6.5)	8 (+/- 6.0)	0.64
Pap / STI testing / wet preps				
Observed	12 (+/- 6.4)	12 (+/- 6.0)	9 (+/- 4.7)	0.06
Performed	10 (+/- 5.3)	9 (+/- 5.3)	7 (+/- 5.3)	0.15

POCUS = Point of care ultrasound

STI = Sexually transmitted infection

*indicates statistical significance (p-value < 0.05)

perform (mean 0.82, range 0-10) these procedures, with high variability in opportunity. Otherwise, there was no significant difference in procedural opportunities based on which trimester the student rotated in (all $p > 0.05$).

Student procedural experiences compared to traditional clerkship

Because PIONEER students also completed the standard 4-week inpatient OB/GYN block, the analyses below isolate *only the procedures they logged during their weekly outpatient PIONEER sessions* and compare them with the *total* (inpatient + outpatient) procedures reported by students in the traditional clerkship. This framing highlights the increased outpatient experience provided by the PIONEER model while acknowledging that differences in reporting periods temper the strength of conclusions.

PIONEER outpatient time alone yielded significantly higher numbers of breast exams than the traditional clerkship ($p < 0.01$, Table 5). In 2022-23, 39.8% ($n = 43/108$) of traditional clerkship students reported not performing any breast examinations, while only 1.8% ($n = 2/108$) performed 10 or more. In contrast, among PIONEER students, only 3.8% ($n = 3/80$) had no opportunity to perform a breast exam, and nearly half ($n = 37/80$, 46.2%) performed 10 or more.

Pelvic examinations in 2022-23 were assessed using a combined estimate of speculum and bimanual exams, limiting direct statistical comparisons. In the traditional model, 42.6% ($n = 46/108$) of students reported performing greater than 10 pelvic examinations (either speculum or bimanual). Among PIONEER students, 68.2% ($n = 56/82$) performed more than 10 speculum exams. However, PIONEER students reported far less

experience with bimanual exams, with just 13.6% performing more than 10 exams ($n = 9/66$).

When considering outpatient PIONEER encounters alone, students logged fewer obstetric ultrasounds than peers in the traditional clerkship's full curriculum ($p < 0.01$, Table 5). Additional details are provided in Table 5.

Discussion

Longitudinal integrated clerkships have been shown to enhance student clinical experience, increase standardized test scores, and influence career choices.^{1,11-13} However, preceptor continuity, a presumed contributor to these benefits, can be difficult to maintain in OB/GYN, particularly in clinical schedules that rely on fixed rotation days. Our study examines an **amalgamative clerkship model in OB/GYN**—inspired by LIC principles but not a traditional LIC—and compares student educational experiences and procedural opportunities based on student-perceived continuity

with preceptors. We found no significant differences in student knowledge or procedural experience based on perceived preceptor continuity. However, these results are limited in power by the low number of students with high perceived preceptor continuity. PIONEER students reported significantly greater experience with breast examinations compared to those in the traditional clerkship model, and more PIONEER students reported performing greater than 10 speculum examinations. **In contrast, traditional clerkship students performed a higher volume of obstetric ultrasounds, likely reflecting differences in clinic placement and access to ultrasound-heavy settings such as labor and delivery.** This suggests that procedural opportunities for students may vary not only by curriculum structure but also by clinical site characteristics and the types of patients encountered.

Our findings provide new insight into the implications of differential preceptor continuity

Table 5: Number of observed and performed procedures compared to traditional clerkship model (values expressed as N (%))

		Longitudinal integrated clerkship (N = 83)		Traditional clerkship (N = 108)		P-value
		None	>10	None	>10	
Pelvic exams*						
Speculum Observed	-	0 (0%)	65 (80.2%)	0 (0%)	98 (90.7%)	1.00
Bimanual Observed	-	2 (2.5%)	62 (77.5%)			0.15
Speculum Performed	-	0 (0%)	56 (68.2%)	0 (0%)	46 (42.6%)	1.00
Bimanual Performed	-	16 (24.2%)	9 (13.6%)			<0.01**
Breast exams						
Observed		2 (2.5%)	45 (57.0%)	21 (19.4%)	8 (7.4%)	<0.01**
Performed		3 (3.8%)	37 (46.2%)	43 (39.8%)	2 (1.8%)	<0.01**
Obstetric ultrasounds						
Observed		12 (15.6%)	11 (14.3%)	0 (0%)	48 (44.4%)	<0.01**
Performed		25 (36.2%)	3 (4.3%)	3 (2.8%)	10 (9.3%)	<0.01**

*in the 2022–23 academic year, students were asked to combine the speculum and bimanual examinations in their survey response

**indicates statistical significance

Due to missing data, the total N for PIONEER procedures were the following: Speculum: observed (81), performed (82); Bimanual: observed (80), performed (66); Breast exams: observed (79), performed (80); Obstetric ultrasounds: observed (77), performed (69).

within an LIC-type model. A large majority of students in our cohort reported perceiving “low continuity” with their OB/GYN preceptors, suggesting that a model emphasizing continuity of location (e.g., the same clinical placement at the same time each week) may not effectively facilitate preceptor consistency with OB/GYN generalists’ varied schedules. Despite this, we found no significant differences in student educational growth or procedural opportunities based on preceptor continuity, a novel finding that, to our knowledge, has not been previously explored.

PIONEER students logged more procedures than peers in the traditional 4-week clerkship, reflecting an established advantage of longitudinal clerkships: extended exposure over time allows for greater hands-on experience and familiarity with clinic workflow. Most existing literature on longitudinal integrated clerkship (LIC) models highlights the benefits of increased clinical autonomy compared to traditional block rotations—a trend supported by our findings—even though prior studies have rarely addressed OB/GYN specifically.²⁰⁻²² Beyond autonomy, our results also align with previous work showing that longitudinal OB/GYN clerkships provide students with greater procedural exposure than traditional models.¹⁴ This finding suggests that the benefits commonly associated with comprehensive LICs, such as increased procedural engagement, can be preserved in a shorter, amalgamative clerkship model.

Additionally, while patient continuity was not assessed in our study, our findings suggest that other features of continuity—such as becoming familiar with clinic workflow and forming relationships with the broader care team—may explain why students still experienced educational benefits within a continuity-of-location model, even without consistent preceptor pairings.¹⁹ This represents an important consideration for the design of longitudinal clinical curricula for specialties such as OB/GYN, where physicians frequently divide their time across multiple settings—outpatient clinic, labor and delivery, and the operating room. In contrast to family and internal medicine, where LICs are often designed around fixed clinic days, OB/GYN schedules are less predictable, complicating efforts to achieve sustained preceptor continuity. Yet, these preliminary findings suggest that longitudinal placements may still provide meaningful learning experiences.

Our data also demonstrate that procedural experience and autonomy did not vary based on trimester of the academic year, despite the fact students are expected to have more clinical experience and efficiency as the year continues.²³ This contrasts with prior literature that have suggested student hands-on experience increase during mid- and late-year clerkship rotations.^{24, 25} However, these studies primarily focused on traditional block OB/GYN clerkships, whereas ours examines a longitudinal outpatient model and its associated procedures. This suggests that either the lower-acuity outpatient setting, the longitudinal structure, or a combination of both may help mitigate the seasonal differences in student procedural experience observed in block rotations.

Limitations

This study is subject to several limitations that warrant consideration. First, as a single-center study, the generalizability of our findings to other academic clinical settings may be limited. Second, the small sample size of the high-continuity group and lower response rate of the third trimester students limits statistical comparisons. Additionally, the measure of “perceived continuity” relied on students’ subjective impressions rather than a documented count of how many times they worked with the same preceptor, making it an imprecise metric. The lack of a clear definition for “performed” and “observed” procedures may have introduced variability in the data collection process, potentially affecting the accuracy and consistency of these results. Because PIONEER does not meet the strict definition of an LIC (e.g., consistent preceptor-patient continuity across the year), our findings may be more applicable to amalgamative clerkship structures rather than classic LICs. Lastly, we were unable to examine the effect of continuity on other proposed benefits of longitudinal clerkships such as preceptor recommendation letters, exam scores, and patient-centered care, which should be explored in future research.

Conclusion

In summary, this study describes educational outcomes from an amalgamative clerkship model in OB/GYN and provides exploratory insight into how perceived preceptor continuity shapes student learning. While many of the findings were expected—such as greater procedural exposure with more outpatient time—our results also suggest that meaningful clinical learning and procedural experience can occur in an amalgamative structure

even when preceptor continuity is inconsistent, underscoring the results that other factors such as clinic workflow familiarity and longitudinal patient exposure may also contribute to student growth.

Because this was a single-institution study with limited power, the findings should be interpreted as a foundation for future work. Nonetheless, the PIONEER model illustrates how amalgamative

clerkships can still provide benefits similar to traditional LIC models, despite challenges achieving high continuity with preceptors. Importantly, these results provide a basis for multi-institutional studies to more rigorously evaluate the educational value of amalgamative clerkship models and to guide the extension of longitudinal clerkship models in OB/GYN.

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