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Prepared for Practice: The Impact of Authentic Clinical Responsibilities and Graduated Autonomy in Fellowship Training

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Research Article

Keywords: Pediatric gastroenterology fellowship, graduate medical education, competency-based medical education, entrustable professional activities, workplace-based learning, experiential learning, graduated autonomy

Posted Date: November 18th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11322549/v1

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Additional Declarations: No competing interests reported.

Abstract

Background

Fellowship programs must balance graduated autonomy with appropriate supervision while preparing trainees for independent practice. Evidence regarding educational models promoting autonomy during pediatric subspecialty training remains limited.

Objective

To evaluate fellowship graduates' and faculty members' perceptions of learning experiences designed to promote graduated autonomy and preparedness for independent practice.

Methods

A pediatric gastroenterology fellowship implemented two educational innovations: a continuity clinic in which fellows functioned as the primary longitudinal provider and a senior fellow "junior attending" inpatient rotation with expanded leadership responsibilities under faculty supervision. In Fall 2024, fellowship graduates and faculty completed surveys assessing perceived patient ownership and preparedness for independent practice using 10-point scales. Groups were compared using Student's t-tests.

Results

Twenty of 30 fellowship graduates (67%) and 11 of 15 faculty (73%) completed surveys. Fellows who participated in the junior attending rotation reported greater preparedness for independent practice than those trained in the traditional model (mean[SD], 8.5[1.3] vs 7.3[0.5]; *P*=.009). Fellows trained in the redesigned continuity clinic model reported higher overall ratings of the experience (7.8[1.2] vs 5.6[1.5]; *P*=.002), greater ownership of patient care (8.4[1.9] vs 3.6[2.7]; *P*=.0002), and greater preparedness for independent practice (8.1[1.4] vs 5.1[2.9]; *P*=.007) than fellows trained in the prior model. Faculty similarly perceived greater fellow ownership in the redesigned continuity clinic model (8.9[1.1] vs 2.0[1.4]; *P*=.0001)

Conclusion

Training experiences providing authentic clinical responsibilities and graduated autonomy were associated with greater perceived ownership of patient care and preparedness for independent practice, supporting incorporation of structured workplace-based learning experiences within subspecialty fellowship training.

BACKGROUND

Subspecialty fellowship training is intended to prepare physicians for independent practice; however, creating meaningful opportunities for graduated autonomy while maintaining appropriate supervision remains a persistent challenge. Competency-based medical education emphasizes demonstration of competence in authentic clinical settings and preparedness for independent practice. Within this framework, trainees should assume progressively greater responsibility for patient care while receiving appropriate guidance and feedback.

Adult learning theory suggests that learners develop expertise most effectively when educational experiences real-world practice.[1] Authentic workplace-based learning environments allow trainees to participate directly in clinical decision making, longitudinal patient management, and interprofessional collaboration, promoting development of professional identity, ownership of patient care, and confidence in independent clinical practice.[2] However, limited evidence describes how fellowship programs can intentionally structure clinical experiences to support graduated autonomy and preparedness for practice.

Pediatric gastroenterology fellowship programs are expected to provide progressive responsibility throughout training. National training guidelines emphasize development of clinical competence, independent judgment, and preparedness for independent practice.[3] Entrustable professional activities (EPAs) provide a framework for determining whether trainees can safely perform critical professional responsibilities with decreasing supervision.[4–6] However, few studies have examined educational models specifically designed to promote entrustment and autonomy during subspecialty fellowship training.

The University of California San Diego/Rady Children's Hospital Pediatric Gastroenterology Fellowship Program implemented two curricular innovations intended to provide authentic clinical responsibilities while maintaining faculty oversight: (1) a continuity clinic model in which fellows function as primary longitudinal providers and (2) a senior fellow "junior attending" inpatient rotation that allows fellows to lead clinical teams and assume expanded responsibility for patient management under supervision. The objective of this program evaluation was to assess perceptions of training experiences designed to promote graduated autonomy and preparedness for independent practice.

METHODS

Study Design and Setting

We conducted a retrospective cross-sectional program evaluation of fellowship graduates and faculty members in Fall 2024 to examine perceptions of educational experiences designed to promote graduated autonomy and preparedness for independent practice. The fellowship program was

established in 1997 and includes both inpatient and ambulatory clinical experiences. Educational innovations were introduced in the inpatient setting in 2010 and the continuity clinic setting in 2014.

Educational Interventions

Educational Interventions

The educational interventions were informed by principles of experiential learning, competency-based medical education, and entrustment theory. Kolb's experiential learning theory proposes that learning occurs through a cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation.[7] Authentic clinical experiences that allow trainees to assume meaningful responsibility for patient care provide opportunities to move through this learning cycle and apply knowledge in the context in which it will ultimately be used. Experiential learning approaches have been widely applied within medical education to strengthen clinical reasoning, skill development, and preparedness for independent practice.[7,8]

The interventions were also designed to align with principles of competency-based medical education, which emphasize demonstration of competence in real clinical settings rather than completion of prescribed educational experiences alone.[9] Entrustable Professional Activities (EPAs) provide a framework for assessing whether trainees can be trusted to perform professional tasks with decreasing levels of supervision as competence develops.[4–6] Entrustment depends on progressive opportunities for responsibility, supervision, and independent decision-making within authentic clinical environments.

Accordingly, the continuity clinic and junior attending rotations were designed to provide graduated autonomy, increase ownership of patient care, and facilitate the transition to independent clinical practice while maintaining faculty oversight.

Junior Attending Rotation

Prior to 2010, inpatient teaching followed a traditional model in which faculty members led rounds and directed patient management decisions.

In 2010, a "junior attending" rotation was introduced for second- and third-year fellows. During this rotation, senior fellows led rounds, supervising junior trainees, coordinating patient management, and functioning as team leaders under faculty supervision. Supervising faculty members were available for consultation and oversight and met with fellows after rounds to review clinical decisions and provide teaching. Senior fellows completed two 1-week junior attending rotations annually during both the second and third years of training.

The junior attending model was designed to operationalize graduated autonomy by allowing fellows to lead clinical teams and make management decisions while retaining faculty oversight and feedback.

Continuity Clinic Model

Continuity clinic is a longitudinal ambulatory experience that occurs throughout fellowship training. Prior to 2014, patients were scheduled under attending physicians' names, and attendings assumed primary responsibility for follow-up communication, review of results, and ongoing patient management.

In 2014, the clinic model was redesigned to increase fellows' participation in authentic clinical practice activities. Patients were scheduled under the fellow's name, fellows served as the primary point of contact for patient follow-up, and faculty functioned in supervisory and backup roles. Fellows worked longitudinally with a clinic nurse and trainees from other levels to mirror independent clinical practice. Billing and coding instruction was incorporated into the experience to provide exposure to practical aspects of outpatient practice.

This structure was intended to provide fellows with authentic longitudinal responsibility for patient care, thereby creating opportunities for experiential learning and progressive entrustment within a supervised environment.

Survey Development and Distribution

A 26-item graduate survey and an 8-item faculty survey were developed by the study team to evaluate perceptions of the educational interventions (Supplemental Material). Survey items assessed ownership, autonomy, continuity of care, educational value, and preparedness for independent practice. In addition to structured rating-scale items, respondents were invited to provide open-ended comments regarding strengths of the continuity clinic model and opportunities for improvement in the continuity clinic and inpatient training models. Surveys underwent pilot testing for content clarity, readability, and functionality before distribution. Formal psychometric validation was not performed.

Surveys were distributed electronically using REDCap in 2024 to all eligible fellowship graduates and faculty members. Respondents rated training experiences using 10-point scales. For all items, higher scores reflected more favorable evaluations of the construct being assessed, including ownership of patient care, preparedness for independent practice, autonomy, and overall experience.

Outcome Measures

The primary outcomes were perceived ownership of patient care and preparedness for independent clinical practice. Secondary outcomes included overall ratings of the continuity clinic training experience and faculty perceptions of fellow autonomy and ownership. Outcomes were compared between graduates and faculty who participated in the redesigned training models and those who trained in or supervised earlier models.

Statistical Analysis

Survey responses are reported as means and standard deviations (SDs). Because several faculty members supervised fellows under both traditional and redesigned models, faculty respondents could contribute evaluations to more than one training model. Ratings collected on 10-point scales were analyzed as continuous variables. Comparisons between groups were performed using independent Student's *t* tests. Given the exploratory nature of the evaluation and small sample sizes in some comparison groups, findings should be interpreted cautiously. A 2-sided *P* value < .05 was considered statistically significant.

Qualitative Analysis

Open-ended survey responses were reviewed descriptively to identify recurring concepts and illustrative quotations related to ownership, autonomy, continuity, and preparedness for independent practice. Because this was not a formal qualitative study, responses were not subjected to formal coding or thematic saturation analysis.

Ethical Considerations

The University of California San Diego Institutional Review Board reviewed the evaluation and determined that it was exempt from informed consent and human subjects' review and deemed unnecessary according to national regulations (Supplemental Material).

RESULTS

Participant Characteristics

Since the fellowship program's inception, 30 fellows have completed training. Twenty fellowship graduates (67%) and 11 out of 15 faculty members (73%) participated in the evaluation. Participant demographics are presented in Table 1. Among responding graduates, 16 had participated in the junior attending rotations and 13 had trained in the redesigned continuity clinic model. Faculty exposure varied because some faculty supervised fellows under both traditional and redesigned training models. Most graduates practiced in academic settings (65%), and 80% reported involvement in training residents and/or fellows. Faculty respondents represented a broad range of clinical experience, from early-career faculty to physicians with more than 20 years in practice, and 45% had completed fellowship training at our institution.

Table 1
Faculty and Fellow Demographics

Faculty Demographics (n = 11)	
Years in Practice (n (%))	
0–5	4 (36.4)
6–10	3 (27.3)
11–15	0
16–20	3 (27.3)
20+	1 (9.0)
Fellowship Training at Program (n (%))	
Yes	5 (45.5)
No	6 (54.5)
Fellow Demographics (n = 20)	
Year of Graduation (n (%))	
2005–2009	3 (15.0)
2010–2014	6 (30.0)
2015–2019	7 (35.0)
2020–2024	4 (20.0)
Practice Environment (n (%))	
Academic Institution	13 (65.0)
Private Practice	5 (25.0)
Industry	2 (10.0)
Do you train fellows/residents? (n (%))	
Yes	16 (80.0)
No	4 (20.0)

Perceptions of Authentic Clinical Learning Experiences

Both fellows and faculty reported favorable perceptions of the redesigned training models (Table 2). Fellows who participated in the junior attending rotation reported greater preparedness for independent practice than fellows trained in the traditional inpatient model (mean [SD], 8.5 [1.3] vs 7.3 [0.5], on a 10-point scale, *P*=.009). Faculty also reported high levels of comfort with fellow autonomy during the junior attending experience (mean [SD]: 7.8 [0.8]).

Similarly, fellows who trained in the redesigned continuity clinic model reported higher overall ratings of the experience (mean [SD], 7.8 [1.2] vs 5.6 [1.5], *P*=.002), greater ownership of patient care (8.4 [1.9] vs 3.6 [2.7], *P*=.0002), and greater preparedness for independent practice (8.1 [1.4] vs 5.1 [2.9], *P*=.007) than fellows trained in the traditional continuity clinic model. Faculty members also perceived greater fellow ownership of patient care within the redesigned continuity clinic model compared with the traditional model (8.9 [1.1] vs 2.0 [1.4], *P*=.0001).

Table 2
Fellow and Faculty Assessments of Junior Attending and Continuity Clinic Rotations

FELLOW ASSESSMENTS (N = 20)			
Variable	Redesigned Model	Traditional Model	*P*-value
JUNIOR ATTENDING			
Respondents (N)	16	4	
Ownership of Patient Care Ratings	8.6 [1.4]	7.0 [1.6]	0.15
Preparedness for Independent Practice Ratings	8.5 [1.3]	7.3 [0.5]	0.009*
CONTINUITY CLINIC			
Respondents (N)	13	7	
Overall Rating	7.8 [1.2]	5.6 [1.5]	0.002*
Ownership of Patient Care Ratings	8.4 [1.9]	3.6 [2.7]	0.0002*
Preparedness for Independent Practice Ratings	8.1 [1.4]	5.1 [2.9]	0.007*
FACULTY ASSESSMENTS (N = 11) [#]			
Variable	Redesigned Model	Traditional Model	*P*-value
JUNIOR ATTENDING			
Respondents (N)	9	3	
Ownership of Patient Care Ratings	7.8 [1.0]	6.3 [2.1]	0.12
Comfort with Fellow Autonomy Ratings	7.8 [0.8]	N/A	
CONTINUITY CLINIC			
Respondents (N)	7	2	
Fellow Ownership of Patient Care Ratings	8.9 [1.1]	2.0 [1.4] Individual scores 1 and 3	0.0001*
Comfort with Fellow Autonomy Ratings	8.6 [1.3]	9.0 [1.4] Individual scores 8 and 10	0.69

Ratings on a 10-point scale reported as mean [standard deviation]. Higher scores indicate more favorable evaluations of the construct assessed, including ownership of patient care, preparedness for independent practice, autonomy, and overall experience. Comparisons were performed using independent Student's *t* tests.

*$P < 0.05$

[#]Some faculty supervised fellows under both redesigned and traditional models.

Qualitative Findings

Open-ended responses supported the quantitative findings. Fellows who trained in the redesigned continuity clinic model frequently described a sense of ownership associated with having patients scheduled under their names and maintaining responsibility for longitudinal management. One fellow noted:

I truly felt ownership of my patients, which helped build confidence for life as an attending and taught me the skills needed to follow complex patients long term.

Responses also highlighted the value of continuity, consistent supervision, and opportunities for autonomous clinical decision-making within a supportive learning environment. Several fellows described the continuity clinic as promoting longitudinal responsibility for patient care while maintaining access to faculty guidance.

Several respondents spontaneously highlighted the educational value of the junior attending rotation despite not being specifically asked to describe its strengths. One fellow described the experience as:

The Junior attending rotations might be one of the most helpful parts of the inpatient training and I felt really prepared me for being an attending and running an inpatient service. This was one of my favorite parts of fellowship. I appreciated the opportunity to run rounds on my own and discuss with the attending after (or meet before to discuss thoughts on patients for that day).

Collectively, these comments suggest that both educational interventions fostered ownership of patient care, graduated autonomy, and confidence in managing patients independently.

DISCUSSION

In this evaluation, we examined fellows' and faculty members' perceptions of educational experiences designed to provide authentic clinical responsibilities and graduated autonomy within a pediatric gastroenterology fellowship program. Fellows who participated in the continuity clinic and junior attending models reported greater preparedness for independent practice than graduates trained in previous models, while faculty perceived greater fellow ownership of patient care within the redesigned clinical experiences. These educational interventions were intentionally designed to promote experiential learning through authentic workplace-based clinical responsibilities and graduated autonomy. These

findings suggest that educational experiences intentionally structured around authentic workplace responsibilities may enhance trainees' perceptions of preparedness for independent practice.

The findings align with experiential learning and competency-based education. By placing fellows in authentic clinical roles with meaningful responsibility for patient outcomes, the redesigned rotations provided concrete experiences that required learners to integrate clinical knowledge, exercise judgment, reflect on decision-making, and apply lessons learned to subsequent patient encounters. These elements closely align with Kolb's experiential learning cycle[7] and contemporary models of workplace-based learning.[10–13] Similarly, the interventions also created opportunities for entrustment by increasing responsibility while maintaining faculty supervision, a core principle of competency-based education.

Our findings align with prior studies demonstrating that graduated responsibility and authentic clinical participation contribute to learner engagement, autonomy, and professional identity formation.[10–12] Sawatsky and colleagues demonstrated that autonomy plays a central role in professional identity formation among trainees,[2] while competency-based educational frameworks emphasize assessment of performance in authentic clinical environments rather than reliance on knowledge acquisition alone.[4–6,9] Studies of longitudinal clinical experiences and graduated responsibility models have demonstrated that learners value opportunities to function in authentic clinical roles while receiving structured supervision.[14] Our findings extend this literature into pediatric subspecialty fellowship training, where published evaluations of intentionally designed entrustment experiences remain limited.

The junior attending rotation is a distinctive component of the curriculum. Fellows temporarily assumed attending-level responsibilities while remaining under supervision. This model intentionally creates opportunities for fellows to bridge the gap between supervised training and independent practice. Notably, fellows who participated in this experience reported significantly greater preparedness for independent practice than those trained in the previous inpatient model. Qualitative comments further reinforced this finding, with fellows describing the junior attending rotation as one of the most valuable components of training for preparing them to independently lead an inpatient service. Although subjective, these findings suggest that authentic leadership experiences may represent an important component of fellowship education.

Similarly, the redesigned continuity clinic sought to shift fellows from participants in attending-led clinics to primary providers responsible for longitudinal patient management. Fellows scheduled patients under their own names, managed follow-up communication, and assumed greater responsibility for ongoing care. This structure was associated with higher ratings of ownership and preparedness compared with the previous clinic model. Ownership of patient care is an important developmental step in professional identity formation and may facilitate the transition from supervised trainee to independent practitioner. Longitudinal responsibility for patient care also reflects core EPA concepts by providing opportunities for trainees to demonstrate clinical decision-making, communication skills, and accountability with progressively decreasing levels of supervision.[4–6]

These findings should be interpreted in the context of several limitations. This was a single-institution study involving a relatively small number of fellows and faculty, particularly within the historical comparison groups. Several comparisons involved small sample sizes, making estimates potentially sensitive to the experiences of individual participants. The study also relied on retrospective self-report, introducing recall bias and response bias. Graduates from earlier training eras may have remembered experiences differently than more recent graduates. Because comparison groups represented different training eras rather than contemporaneous cohorts, observed differences may reflect secular changes in medical education or healthcare delivery in addition to the educational interventions themselves. Response bias is also possible, as graduates with particularly positive or negative experiences may have been more likely to participate. Additionally, the survey instrument was developed for this evaluation and underwent pilot testing for clarity and usability, but formal psychometric validation was not performed. Finally, outcomes measured perceptions of preparedness and ownership rather than objective indicators of competence, entrustment, or clinical performance.

Despite these limitations, this study offers a practical model for how fellowship programs may intentionally design authentic workplace-based learning experiences to promote graduated autonomy. The consistency of findings across fellows and faculty suggests that providing meaningful clinical responsibility within a structured supervisory environment is valued by both learners and educators. Future studies should evaluate objective educational outcomes, including milestone progression, EPA attainment, workplace-based assessments, and early career performance, to better understand the impact of authentic clinical learning experiences on preparedness for independent practice.

CONCLUSION

Educational experiences that provide fellows with authentic clinical responsibilities and graduated autonomy were associated with higher perceived ownership of patient care and greater perceived preparedness for independent practice. Purposeful incorporation of workplace-based learning experiences that allow progressive entrustment may help bridge the transition from fellowship training to independent subspecialty practice. Further studies using objective educational outcomes are needed to evaluate the impact of these models on learner performance and patient care.

Declarations

Ethics approval and consent to participate

The University of California San Diego Institutional Review Board reviewed the evaluation and determined that it was exempt from human subjects' review and deemed unnecessary according to national regulations – please see attached E-QUAL form submitted in supplemental material. Our Study adhered to and was in compliance with the Helsinki Declaration.

Consent for publication

N/A

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests

Funding

No funding sources used

Authors' contributions

NG and JH conception, design of the work; acquisition, analysis, interpretation of data; and have drafted the work or substantively revised it.

MS and EY conception and design of the work

All authors have approved the submitted version

Acknowledgements

N/A

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Supplementary Files

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