

Current Practice in End-of-Residency Handoffs: A Survey of Internal Medicine–Pediatrics Program Directors

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Abstract

Background End-of-residency outpatient handoffs affect at least 1 million patients per year, yet there is no consensus on best practices.

Objective To explore the use of formal systems for end-of-residency clinic handoffs in internal medicine–pediatrics residency (Med-Peds) programs, and their associated categorical internal medicine and pediatrics programs.

Methods We surveyed Med-Peds program directors about their programs' system for handing off ambulatory continuity patients.

Results Our response rate was 85% (67 of 79 programs). Thirty-one programs (46%) reported having a system for end-of-residency handoffs. Of the 30 that offered detailed information, 22 (73%) formally introduced the program to residents, 12 (40%) standardized the handoff,

and 14 (47%) used multiple methods for information exchange, with the electronic health record and oral transfer of information (15 of 30, 50%) the most common. Six programs (20%) indicated they did not offer residents protected time to complete end-of-residency handoffs, and 13 programs (43%) did not identify a specific postgraduate year level for residents to whom patients were handed off. Programs were more likely to have a system for end-of-residency handoffs if another categorical program at their institution also had one ($P < .001$).

Conclusions Fewer than half of responding Med-Peds programs have outpatient handoff systems in place. Inclusion of end-of-residency handoff information in the electronic health record may represent a best practice that has the potential of enhancing continuity and safety of care for patients in resident continuity clinics.

Editor's Note: The online version of this article contains the outpatient handoff survey instrument used in this study.

Introduction

End-of-residency handoffs of residents' continuity clinic patients have been identified as an unaddressed patient safety concern.^{1,2} In 2011, an estimated 15 300 internal medicine, pediatrics, family medicine, psychiatry, and

internal medicine–pediatrics (Med-Peds) residents finished residency³ and turned over the care of their ambulatory continuity clinic patients to another resident, accounting for an estimated 1 million patient transfers of care in the United States.

During the handoffs of their ambulatory patients, residents need to convey concerns about social and family issues, and longer-term follow-up management of health concerns, in addition to the standard content of handoffs. These handoffs often are made from more experienced senior residents to a less experienced junior resident and there may be a significant time lag between the handoff and the patient's next visit to the clinic. In addition, between 19% and 46% of internal medicine clinic patients identified as high risk also failed to follow up with a provider within a reasonable time frame.^{4,5}

Handoff training is a component of the Accreditation Council for Graduate Medical Education requirements,⁶ yet consensus for best practice recommendations has not been reached for assessing or training residents in end-of-residency clinic handoffs. Studies of efforts to improve the end-of-residency handoff have focused on advance notice of the change in provider,^{7,8} improving patient follow-up and

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outcomes through multifaceted approaches,^{5,9} and recording of handoff information in the electronic health record (EHR).¹⁰ Recent best practice suggestions include formally orienting the patient to the handoff process, standardizing data entry, prioritizing scheduling, and conducting face-to-face oral handoffs.^{2,5,9}

Our pilot work identified 3 key features of handoffs to consider in developing best practices: (1) introduce residents to a formal handoff system, (2) set expectations for performing handoffs, and (3) provide residents with protected time to perform end-of-residency handoffs.¹⁰

We created a survey to assess the characteristics of end-of-residency handoffs in Med-Peds programs, including the 3 attributes of effective handoffs identified through our pilot. Med-Peds programs are a good target for this type of study because of their focus on primary care, their connection to categorical medicine and pediatrics programs, and because the fourth year of residency in the specialty lends itself to a longer resident-patient continuity relationship. Med-Peds programs exist in community and academic centers, and in 2011, 41% of categorical pediatrics programs and 20% of internal medicine programs had an attached Med-Peds program.¹¹

Methods

Survey Design

We developed a survey to assess continuity clinic handoffs in Med-Peds residencies across the nation. A literature search in Medline (US National Library of Medicine) and Google Scholar yielded no validated surveys on outpatient handoff systems, and we developed our own instrument by using factors identified as important in our pilot study.¹⁰ We also reviewed the recent literature on handoffs and important features and safety considerations in academic year-end transfers of care¹²; we examined inpatient handoff survey instruments^{12,13} and consulted with experts in handoffs. We piloted the survey with the program directors of the categorical internal medicine and the Med-Peds program at our institution. Twelve survey items captured features of outpatient handoff systems and any relevant training residents received (the survey is provided as online supplemental material). The survey included free text fields that allowed respondents to describe their procedures or elaborate on prior answers. The survey also assessed program director attitudes regarding the importance of handoffs, and barriers to systemic implementation. In this article we focus on the use and characteristics of end-of-residency handoff programs.

Setting, Administration, and Analysis

We surveyed program directors or assistant program directors at the 2011 meeting of the Medicine-Pediatrics

What was known

Relatively little attention has been given to end-of-residency handoffs of residents' ambulatory continuity patients as these residents graduate.

What is new

A survey assessed the characteristics of the transfers of graduating residents' patients in internal medicine-pediatrics programs.

Limitations

Use of nonvalidated survey instrument; single site and small sample size limit generalizability.

Bottom line

There is considerable variability in systems for handing off graduating residents' continuity patients. Including end-of-residency handoff information in the electronic health record may have the largest positive effect for safety and continuity of care.

Program Directors Association, using a paper survey. Program names were recorded to prevent duplicate responses. We used FREIDA Online (American Medical Association, Chicago, IL)¹⁴ to identify the 79 Med-Peds residency programs and classify them by academic versus community setting, and the Association of American Medical Colleges (AAMC) database to assign programs to 4 geographic regions.¹⁵ Programs that did not complete a survey at the meeting (N = 48) were e-mailed a link to an identical online survey (SurveyMonkey.com, Palo Alto, CA). We collected data from April to October 2011. All data were combined into a spreadsheet by the first author (M.J.D.) for analysis by the study statistician (R.E.T.), who had no knowledge of the programs, respondents, or their settings.

We analyzed the data by using statistical software (Graphpad Software Inc, La Jolla, CA; www.graphpad.com). We used χ^2 or Fisher exact test where appropriate to compare different regions and university settings versus community setting for variations in end-of-residency handoff systems.

The study received approval from the Georgetown University Institutional Review Board.

Results

Response Rate

Our response rate was 85% (67 of 79 Med-Peds programs). Thirty-one programs responded via the initial paper survey, and 36 responded via the online survey. Not all respondents answered all questions, so we analyzed the subset of programs that provided complete data on their system.

Handoff System Prevalence

Forty-six percent (31 of 67) of respondents reported they used a handoff system in their Med-Peds program. Thirty

TABLE FEATURES OF HANDOFF SYSTEMS

	Characteristic of Those With a System, No. (%)
Is the handoff system formally introduced? ^a	
Yes	22/30 (73)
Is a standardized handoff shown? ^a	
Yes	12/30 (40)
Do you give protected time? ^a	
Yes	6/30 (20)
Average No. of handoffs per graduating resident ^a (2 program directors skipped this question)	
1–5	2/28 (7)
5–10	3/28 (11)
10–20	11/28 (39)
20–50	11/28 (39)
>50	1/28 (4)
To whom are handoffs made? ^a	
Incoming PGY-1	6/30 (20)
Rising PGY-2	5/30 (17)
Varies/>1 level	19/30 (63)

Abbreviation: PGY, postgraduate year.

^a For each item in the table, we computed the Fisher exact test statistic on the 2×2 contingency of community versus university settings. For all questions in this table, none of the statistics (uncorrected for multiple comparisons) achieved a *P* value <.10.

programs (45%) indicated their institutions did not have formal end-of-residency handoff programs in their categorical internal medicine or pediatrics programs; 20 respondents (30%) reported there was a handoff system only in their internal medicine program; 14 programs (20%) had a formal system in their pediatrics program; and 6 respondents (9%) indicated they did not know whether their institutions had handoff systems in these or other residency programs.

Programs were more likely to have a handoff system if another categorical program at their institution also had one ($P < .001$). Of the 31 Med-Peds programs that indicated they had a system in place, 19 (61%) reported that 1 program had handoff systems and 8 (26%) reported that both categorical programs had handoff systems. Only 3 (10%) Med-Peds programs reported they had handoff systems while neither categorical program had one, and 6 programs (19%) did not know if their categorical programs had formal handoffs systems. The prevalence of outpatient handoff systems, based on academic or community setting and AAMC region, showed no significant differences by academic versus community setting or geographic region (Fisher exact test statistic, uncorrected for multiple comparisons, all $P > .30$).

Handoff System Characteristics

We analyzed the 30 programs that provided complete responses to the questions on characteristics (TABLE).

Of the 6 programs that reported offering protected time for end-of-residency handoffs, 3 provided 4 hours, 2 programs allowed 2 full clinic sessions, and 1 program did not identify how many protected hours were allocated. In response to the question about how end-of-residency handoffs were conducted, almost half of programs (14 of 30, 47%) indicated that a variety of communication methods were used. Inclusion of handoff information in the EHR was the most commonly identified medium (17 of 30, 57%), followed by oral handoffs (15 of 30, 50%). Common methods for end-of-residency handoffs are presented in the FIGURE.

Twenty-eight respondents answered an open-ended question about the characteristics of their end-of-residency handoffs. One of these programs had not reported use of a formal system for this type of handoff. Respondents from 13 of the 28 programs indicated that graduating residents self-identify patients with complex conditions. However, methods to deal with these patients varied among programs. Approaches to distributing these patients ranged

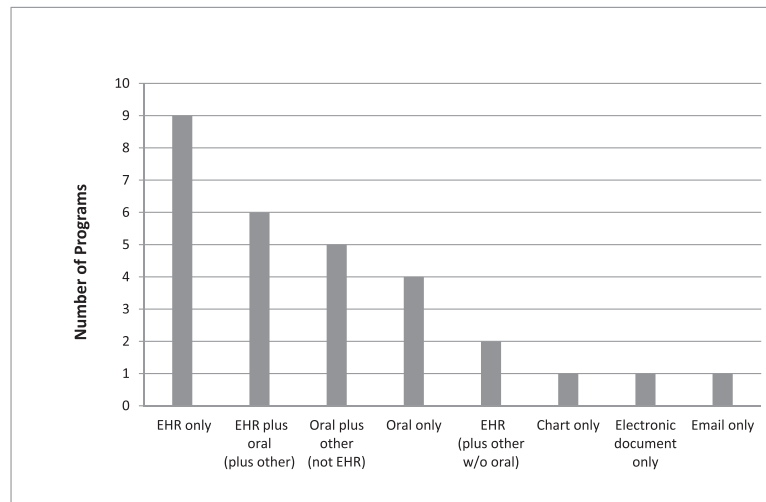


FIGURE | FREQUENCY OF PROGRAMS USING HANDOFF MEDIA COMBINATIONS

Abbreviation: EHR, electronic health record.

from a lower-level resident accepting all patients of a graduating resident to a “conscription” process in which graduating residents’ cases were distributed according to patient complexity and the accepting residents’ level. In programs in which graduating residents did not identify patients with complex conditions, respondents reported that faculty decided the allocation of residents’ patients. Two programs stated they attempt to balance the caseload of residents receiving these handoffs, and 7 respondents indicated that the new provider receives a face-to-face introduction to the patient before the change in provider.

Discussion

This is the first study to assess the use and characteristics of end-of-residency handoff systems for the ambulatory patient of graduating residents. Fewer than half of the Med-Peds residency programs responding to our survey reported having an outpatient handoff system, and the characteristics of those systems are highly variable. Institutional culture appears to play a role, since programs were more likely to have a system in place if their parent categorical programs had one, although only 12% of institutions had handoff systems in all 3 programs (categorical internal medicine, pediatrics, and Med-Peds).

Our results have several implications. High-risk patients often do not receive any follow-up with their newly assigned providers (66%–91% in the studies of Pincavage et al⁵ and also of M.J.D, J.M.C., R.E.T., unpublished data, July 2012) or within a reasonable time frame.^{4,5} In many programs there is an absence of efforts to balance the distribution of patients who have complex conditions to

their new resident providers, which makes it difficult to rebalance caseloads, a method used in ambulatory psychiatry.¹⁶ Recording end-of-residency handoff information in the EHR has the advantage that all the handoff information is retained until the patient presents for follow-up, and that the information is accessible to all providers. Although oral handoffs were the second most commonly reported approach, information transferred in this fashion may be lost unless the patient follows up with the identified provider in a reasonable time frame. Thus, if residency programs initiate efforts to focus on just 1 formal aspect of the outpatient handoff, emphasizing the importance of using EHR might have the biggest impact.

Our study has several limitations. First, our survey was not validated. Second, Med-Peds programs are small, and findings may not be generalizable to other programs. Some programs are also dependent on their parent categorical programs, particularly if their continuity clinic is not a dedicated Med-Peds clinic. Third, underreporting error could have occurred if program directors were not aware of handoff processes, and they may not have had as much authority to make changes regarding outpatient handoffs. Fourth, nonresponse bias could have affected our survey response rate. We also did not define key terms such as *system*, *formal introduction*, and other key descriptors that could have strengthened our ability to draw firmer and more generalizable conclusions. Finally, our study did not examine the role of continuity of attending physicians. It is possible that outpatient handoffs are viewed as less critical from a patient safety point of view and there may be less of a focus on continuity of care at the attending level.

Conclusion

While fewer than half of responding Med-Peds programs have outpatient handoff systems in place, incorporation of formal end-of-residency handoffs in residency training, and offering protected time for these handoffs, puts an emphasis on the handoff as a formal part of physicians' work and reinforces the importance of communication. Inclusion of end-of-residency handoff information in the EHR, where it is retained until the patient's next visit and visible to all providers, may represent a best practice that has the potential of enhancing continuity and safety of care for patients in resident continuity clinics.

Future studies should focus on achieving added consensus on best practices for resident training in outpatient handoffs, as well as formal efforts at evaluating handoff quality, and the effect of these handoffs on patient outcomes.

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