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A survey of primary care resident attitudes toward continuity clinic patient handover

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Background: Transfer of clinic patients from graduating residents to interns or junior residents occurs every year, affecting large numbers of patients. Breaches in care continuity may occur, with potential for risk to patient safety. Several guidelines have been developed for implementing standardized inpatient sign-outs, but no specific guidelines exist for outpatient handover.

Methods: Residents in primary care programs – internal medicine, family medicine, and pediatrics – at a US academic medical center were invited to participate in an online survey. The invitation was extended approximately 2 years after electronic medical record (EMR) rollout began at the institution.

Results: Of 71 eligible residents, 22 (31%) responded to the survey. Of these, 18 felt that handover of ambulatory patients was at least moderately important – but only one affirmed the existence of a system for handover. IM residents perceived that they had the highest proportion of high-risk patients ($p = 0.042$); transition-of-care letters were more important to IM residents than other respondents ($p = 0.041$).

Conclusion: There is room for improvement in resident acknowledgement of handover processes in continuity clinics. In this study, IM residents attached greater importance to a specific handover tool than other primary care residents. Thus, the different primary care specialties may need to have different handover tools available to them within a shared EMR system.

Keywords: *post graduate year*; *internal medicine*; *residents*; *ambulatory care*; *graduate medical education*; *patient handoff*

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The Ecological Model for Ambulatory Patient Safety in Chronic Disease suggests that safe provision of chronic disease care requires productive interactions between an informed, activated patient and a prepared, proactive practice team (1). In resident clinics, however, practice teams change when resident physicians graduate and leave their patients to new or junior residents. In one study, 52% of these patients had not re-established care in the same practice after 1 year – including 43% of patients graduating residents felt were high-priority for follow-up within a year (2). When residents who reviewed charts of non-returning patients were surveyed about the adequacy of handover measures taken by residents who graduated the year before, only 48% agreed that appropriate plans had been made (2). The administrative and clinical burdens of coordinating handoff may be a source of stress for residents and clinic directors (3, 4).

In 2014, over 12,000 residents matched to family medicine (FM) and categorical programs in internal medicine (IM), and pediatrics (Peds) nationwide (5). If the same number of residents graduate from these programs annually – and each has an average of 50 continuity patients – at least 600,000 patients are transferred each year (6). Although some analyses of handover of ambulatory patients managed by graduating residents in IM, medicine-Peds, and psychiatry have been reported (2, 7–9), parallels have not been drawn across the primary care specialties. This study aimed to assess resident and faculty perception of the handover process, including the importance of 1) completing various handover activities and 2) considering patient risk. We hypothesized that resident physicians perceive the importance of ambulatory handover differently based on the proportion of high-risk patients affiliated with various specialty clinics.

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Methods

Setting and study design

All 71 residents in the primary care programs – IM, FM, and Peds – of a single academic medical center in the southeastern United States were invited to participate in a secure online survey in May and June of 2012. The survey included Likert-type questions and – consistent with similar surveys (7, 8) – required respondents to use their clinical judgment to estimate the proportion of patients on their panels at high risk for poor outcomes or hospitalization (see Appendix). A modified version of the survey was also administered to the residents' faculty preceptors. Incentives to participate were not offered to residents or faculty.

The host hospital system had begun to provide an electronic medical record (EMR) in resident and faculty clinics in September 2010. Handover tools available in the EMR at the time of the study included 1) transition-of-care letters that could be customized by an EMR user, 2) flags that could be used to identify at-risk patients, and 3) free-form notes.

Data analysis

Analyses were performed using SPSS 21.0. Fisher's exact tests were used to compare discrete variables. Non-parametric (one-sample binomial) testing was used to assess differences in proportions. A p-value of less than 0.05 was considered statistically significant.

Results

Residents

Twenty-two residents (31%) responded to the survey, of whom 11 were IM residents, four were FM residents, and seven were Peds residents. Six were interns, 11 were second-year residents, and five were third-year residents. Eleven of the respondents were male and 11 were international medical graduates. Seven residents expected to complete a fellowship, another four planned to work in private practice, four expected to become hospitalists, four expected to work in academia, and two planned to work for a hospital-owned group. Only one resident, third-year in IM, reported having a system for handover; however, 18 residents (82%) felt that handover of ambulatory patients was at least moderately important (see Fig. 1). Residents reported that EMR notes (84%), flags (76%), and transition-of-care letters (63%) would be appropriate. Area of specialization did not appear to influence preference – except in the case of IM residents who, as a group, preferred transition-of-care letters ($p = 0.041$).

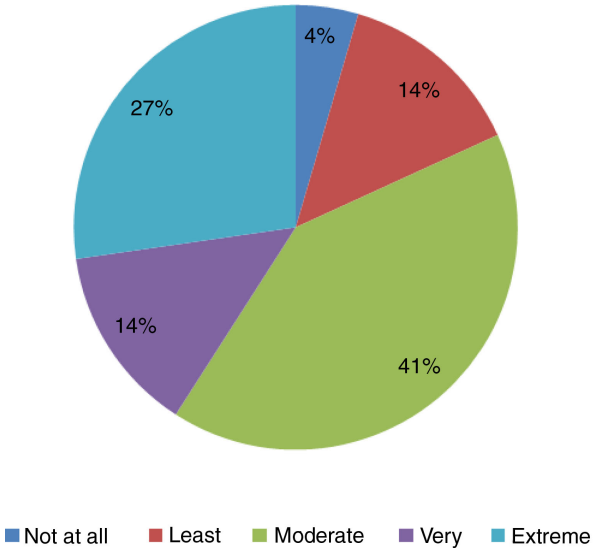

Fig. 1. Level of importance of handover of outpatients as perceived by residents.

Table 1. Proportion of high-risk patients by residency program

	Number of respondents reporting			
Residency program	1–25% High-risk patients	26–50% High-risk patients	51–75% High-risk patients	Total
IM	2	6	3	11
FM	0	4	0	4
Peds	5	1	1	7
Total	7	11	4	22

IM = internal medicine; FM = family medicine; Peds = pediatrics. $P = 0.042$, Fisher's exact test.

IM residents were more likely to classify significant proportions of their patients as high risk (Table 1). All residents found handover at least moderately important for high-risk patients, but only 36% felt the same way about low-risk patients. High-risk patients were most often thought to be those with multiple medical problems, on multiple medications, or having multiple hospital admissions per year (Table 2). Residents also reported prioritizing handover for patients they had difficult

Table 2. Features of high-risk office patients (as reported by 21 residents)

Feature	Frequency	%
Multiple medical problems	20	95.2
Multiple medications	18	85.7
Multiple hospitalizations per year	18	85.7
Multiple emergency department visits per year	16	76.2
Multiple office visits per year	15	71.4
Socioeconomic challenges	15	71.4
Significant time required outside clinic visits for care of the patient	10	47.6

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Table 3. How do residents prepare patients for transition to a new primary care provider (PCP)? ($N = 19$)

Action	Frequency	%
Discuss care plan extensively with patient and family	14	73.7
Close follow-up schedule before and after the resident leaves	10	52.6
Assign the complicated patients to PGY-2 and introduce them to each other	10	52.6
Discuss the care plan extensively with the supervising attending	5	26.3
Help them find another PCP if not interested in follow-up in the clinic	6	31.6
Do not give more than 3 medication refills	4	21.1
Show them the pictures of potential new providers to choose from	4	21.1

relationships with ($p = 0.000$) and for non-adherent patients ($p = 0.001$).

Eleven residents reported having a preference about who received their patients; the majority (eight) preferred to hand patients over to junior residents rather than to new interns. The commonest action residents thought to take at handover time was to discuss care plans extensively with patients and their families (Table 3). Although most residents did not have formal handover systems in place, 18 residents expected that their patients would be successfully transitioned to new primary care providers.

Faculty

Six of an estimated 20 faculty preceptors responded – three in IM and three in FM. Four of the faculty respondents were male. Most faculty respondents were in favor of graduating residents handing patients over to junior residents rather than new interns (83%) and discussing care plans with patients and their families (67%) (Fig. 2). Four faculty members admitted that they did not have a system for handover, though all felt this was at least moderately important. At least moderate importance was attached to the use of EMR flags, notes, and transition-of-care letters by 50, 100, and 67% of faculty, respectively.

Like the resident respondents, faculty attached more priority to handover of patients deemed to have difficult relationships with their physicians than patients with good patient–physician relationships. Faculty seemed also more concerned about handover of non-adherent patients than about adherent ones, and about high-risk patients than low-risk ones. Faculty were almost twice as likely to attach at least moderate importance to handover of low-risk patients than residents were (Fig. 3).

Discussion

Resident and faculty concern with ensuring that patients and their caregivers understand the goals of their care is consistent with the intent of the Ecological Model for Ambulatory Patient Safety in Chronic Disease (1). If this is carried out consistently, the most commonly reported barrier to resumption of care by patients of graduated residents, not perceiving the need for revisits (2), can be addressed. While primary care residents and faculty acknowledge that handover of residents' continuity patients is important, many are unable to identify system supports that facilitate the process. Most resident respondents expected their patients to be transitioned successfully to new residents, even though the majority of these residents could not describe the system for such a transition. This may have been borne from residents' inherent trust that their faculty would ensure successful handover. Alternatively, residents may have been unaware that ambulatory handover has been problematic previously, underscoring the relative paucity of research in this area.

Handing patients of graduating residents off to junior residents, as preferred by many respondents in this study, is a recommended strategy for reducing the caseload of new interns in psychiatry and may prove valuable in other disciplines as well (6). Producing transfer notes that are

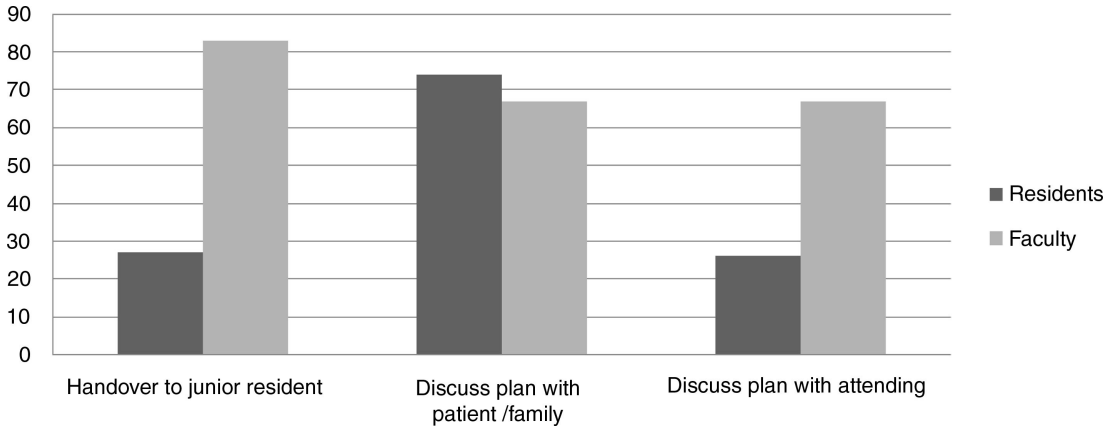

Fig. 2. Percent of resident and faculty respondents choosing selected means for handover.

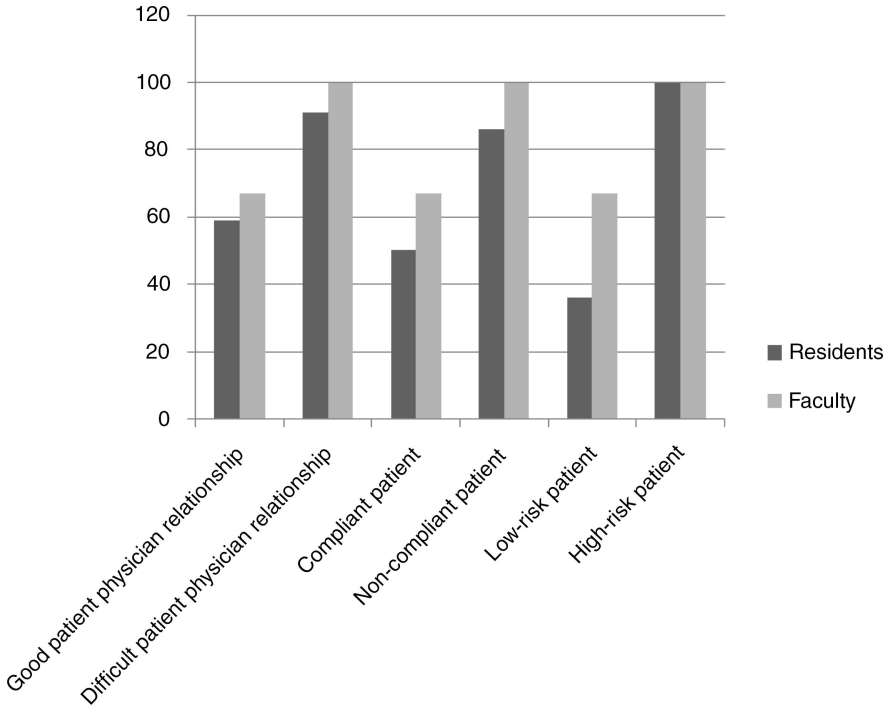

Fig. 3. Resident and faculty perception that certain patient characteristics merited at least moderate importance for handover.

retained in the medical record is another recommended strategy for transition (6). Interestingly, these were valued more by IM residents than by others. This may have been driven by the perception of a greater proportion of high-risk patients in the panels of IM residents.

Residents and faculty reported prioritizing handover of non-adherent patients versus compliant ones. Oddly, most residents did not indicate that non-compliance was a characteristic of the high-risk patient. That residents prioritized handover of patients with whom they had experienced difficult relationships likely ensued from a desire to forewarn the resident about to assume care.

The Accreditation Council for Graduate Medical Education requires residency programs and their sponsoring institutions to provide and monitor handover processes to facilitate continuity of care (10). EMRs provide a means of accomplishing this in the outpatient setting. However, the effect of using a single EMR system in multiple specialties with different handover needs has not been fully explored.

Limitations

This study was conducted in a single center and had a low response rate; thus, the reported associations need to be confirmed in larger samples. The survey instrument had not been validated prior to this study. The characteristics of the 'high-risk patient' were based on survey responses and not pre-defined; however, the features of high-risk patients reported here are similar to those reported by Pincavage et al. (8).

Conclusion

IM residents reported higher proportions of high-risk patients and more interest in using transition-of-care letters; therefore, they may have different needs than other primary care residents as they plan to hand off continuity clinic patients. Studies with larger samples and validated survey instruments are needed to further examine patient handover in all primary care disciplines. The results may be instructive for academic centers and hospitals implementing and fine-tuning EMR systems intended to be shared by different specialties.

Conflicts of interest and funding

The authors have not received any funding or benefits from industry or elsewhere to conduct this study.

References

1. Sarkar U, Wachter RM, Schroeder SA, Schillinger D. Refocusing the lens: Patient safety in ambulatory chronic disease care. Jt Comm J Qual Patient Saf 2009; 35(7): 377–83, 341.
2. Caines LC, Brockmeyer DM, Tess AV, Kim H, Kriegel G, Bates CK. The revolving door of resident continuity practice: Identifying gaps in transitions of care. J Gen Intern Med 2011; 26(9): 995–8.
3. Nadkarni M, Reddy S, Bates CK, Fosburgh B, Babbott S, Holmboe E. Ambulatory-based education in internal medicine: Current organization and implications for transformation. Results of a national survey of resident continuity clinic directors. J Gen Intern Med 2011; 26(1): 16–20.
4. Pincavage AT, Dahlstrom M, Prochaska M, Ratner S, Beiting KJ, Oyler J, et al. Results of an enhanced clinic handoff and

resident education on resident patient ownership and patient safety. Acad Med 2013; 88(6): 795–801.
5. National Resident Matching Program. Results and data: 2014 main residency match. Washington, DC: National Resident Matching Program; 2014. Available from: http://www.nrmp.org/match-data/main-residency-match-data/ [cited 25 September 2014].
6. Young JQ, Wachter RM. Academic year-end transfers of outpatients from outgoing to incoming residents: An unaddressed patient safety issue. JAMA 2009; 302(12): 1327–9.
7. Young JQ, Pringle Z, Wachter RM. Improving follow-up of high-risk psychiatry outpatients at resident year-end transfer. Jt Comm J Qual Patient Saf 2011; 37(7): 300–8.
8. Pincavage AT, Ratner S, Prochaska ML, Prochaska M, Oyler J, Davis AM, et al. Outcomes for resident-identified high-risk patients and resident perspectives of year-end continuity clinic handoffs. J Gen Intern Med 2012; 27(11): 1438–44.
9. Donnelly MJ, Clauser JM, Tractenberg RE. Current practice in end-of-residency handoffs: A survey of internal medicine-pediatrics program directors. J Grad Med Educ 2013; 5(1): 93–7.
10. Accreditation Council for Graduate Medical Education (2011). Common program requirements. Available from: http://www.acgme.org/acgmeweb/Portals/0/dh_dutyhoursCommonPR07012007.pdf [cited 27 November 2012].

Appendix

Outpatient Handover Residents Survey

We would like to invite you to participate in this survey on 'Academic ambulatory clinic patients' handover'. This survey will help to identify appropriate components to be used in building a structured system for outpatient handover in order to improve patient safety.

1. Please select the appropriate option below

- ☐ Please select the appropriate option below. Yes, I am willing to allow my responses to be included in the aggregate data used for the research purposes
- ☐ No, I am not willing to allow my responses to be included in the aggregate data used for the research purposes

2. What is last letter of your first name, last letter of your last name, last two digits of your telephone number?

3. What is your residency program?

- ○ Internal Medicine
- ○ Family Medicine
- ○ Pediatrics

4. What is your post-graduate year?

- ☐ PGY-1
- ☐ PGY-2
- ☐ PGY-3
- ☐ PGY-4

5. Are you an international medical graduate or U.S. medical graduate?

- ☐ USMG
- ☐ IMG

Year of graduation

6. Gender

- ○ Male.
- ○ Female.

7. Do you follow any specific system for outpatient handover by graduating residents in your university clinic?

- ○ Yes
- ○ No

If Yes (please specify)

8. Do you use EMR in your university clinic?

- ○ Yes
- ○ No

9. Do you think outpatient handover at the end of residency is important? Rate 1 to 5

- 1. Not at all important
- 2. Least important
- 3. Moderately important
- 4. Very important
- 5. Extremely important

10. Which of the following tools will be more helpful in outpatient handover process? (Select all answers which apply)

	Not at all important	**Least important**	**Moderately important**	**Very important**	**Extremely important**
EMR template	EMR template Not at all important	EMR template Least important	EMR template Moderately important	EMR template Very important	EMR template Extremely important
EMR flag	EMR flag Not at all important	EMR flag Least important	EMR flag Moderately important	EMR flag Very important	EMR flag Extremely important
EMR note	EMR note Not at all important	EMR note Least important	EMR note Moderately important	EMR note Very important	EMR note Extremely important
Verbal	Verbal Not at all important	Verbal Least important	Verbal Moderately important	Verbal Very important	Verbal Extremely important
Transition of care letter	Transition of care letter Not at all important	Transition of care letter Least important	Transition of care letter Moderately important	Transition of care letter Very important	Transition of care letter Extremely important

Other (please specify)

11. For which group of patients do you feel that handover is necessary?

	Not at all important	**Least important**	**Moderately important**	**Very important**	**Extremely important**
High-risk patient	High-risk patient Not at all important	High-risk patient Least important	High-risk patient Moderately important	High-risk patient Very important	High-risk patient Extremely important
Low-risk patient	Low-risk patient Not at all important	Low-risk patient Least important	Low-risk patient Moderately important	Low-risk patient Very important	Low-risk patient Extremely important
Compliant patient	Compliant patient Not at all important	Compliant patient Least important	Compliant patient Moderately important	Compliant patient Very important	Compliant patient Extremely important
Non-Compliant patient	Non-Compliant patient Not at all important	Non-Compliant patient Least important	Non-Compliant patient Moderately important	Non-Compliant patient Very important	Non-Compliant patient Extremely important
Difficult patient–physician relationship	Difficult patient–physician relationship Not at all important	Difficult patient–physician relationship Least important	Difficult patient–physician relationship Moderately important	Difficult patient–physician relationship Very important	Difficult patient–physician relationship Extremely important
Good patient–physician relationship	Good patient–physician relationship Not at all important	Good patient–physician relationship Least important	Good patient–physician relationship Moderately important	Good patient–physician relationship Very important	Good patient–physician relationship Extremely important

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12. Do you have high-risk patients in your panel?

- ☐ Yes
- ☐ No

13. What proportion of your patients do you believe are high risk?

- ☐ None
- ☐ Less than 25%
- ☐ 25–50%
- ☐ 51–75%
- ☐ More than 75%

14. What are the features of high-risk patients? (Select all answers that apply)

- ☐ Multiple office visits/year
- ☐ Multiple ER visits/year
- ☐ Multiple hospital admissions/year
- ☐ Multiple medical problems
- ☐ Multiple medications
- ☐ Socioeconomic challenges
- ☐ Significant time required outside the clinic visit for patient care
- ☐ Uninsured
- ☐ New diagnoses
- ☐ Psychiatric diagnoses
- ☐ Non-compliant
- ☐ Limited health literacy
- ☐ Language barrier
- ☐ Controlled substance use

Other (please specify) _____

15. Who do you prefer to handover your high-risk patients to?

- ☐ New interns
- ☐ Junior residents
- ☐ No Preference

16. How can graduating residents prepare their patients for the transition to a new provider? (Select all answers that apply)

- ☐ Discuss the care plan extensively with the patient and family
- ☐ Discuss the care plan extensively with the supervising attending
- ☐ Do not give more than 3 medication refills
- ☐ Close follow-up schedule before and after the resident leaves
- ☐ Show them the pictures of new providers to choose
- ☐ Assign the complicated patients to PGY2 and introduce them to each other
- ☐ Help them to find another PCP if they are not interested in continuing follow-up in the clinic

17. How valuable will be to have a transition of care letter in a medical record? Rate 1 to 6

- ○ 1. Not at all valuable
- ○ 2. Least valuable
- ○ 3. Moderately valuable
- ○ 4. Highly valuable
- ○ 5. Extremely valuable

18. What components in the transition of care letter will be helpful? (Select all answers which apply)

- ☐ Active medical problems
- ☐ Past medical problems
- ☐ Pending tasks
- ☐ Preventive measures (screening)
- ☐ Prior failed therapies
- ☐ Short-term goals/plans
- ☐ Long-term goals/plans
- ☐ To do list
- ☐ Allergies

Other (please specify) _____

19. How confident are you that your patients will be effectively transitioned to another resident or fellow after you graduate? Rate 1 to 5

- ☐ 1. Not confident
- ☐ 2. Least confident
- ☐ 3. Moderately confident

- ☐ 4. Very confident
- ☐ 5. Extremely confident

20. Where do you anticipate that you will practice after residency? (select all answers that apply)

- ☐ Academic institution
- ☐ Private office practice
- ☐ Hospital-owned practice
- ☐ Hospitalist
- ☐ Fellowship

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