Comparing resident–patient encounters and case presentations in a family medicine clinic

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OBJECTIVES Oral case presentations following resident–patient interactions provide the primary mechanism by which faculty supervisors assess resident competence. However, the extent to which these presentations capture the content and quality of resident–patient communication during the encounter remains unknown. We aimed to determine whether: (i) the resident–patient encounter content matched information conveyed in the case presentation; (ii) the quality of resident–patient communication was accurately conveyed, and (iii) supervisors addressed effective and ineffective communication processes.

METHODS A total of 22 pairs of resident–patient encounters and family medicine resident case presentations were video- or audiorecorded, transcribed and compared for content. Resident–patient communication was assessed using adapted versions of the Calgary–Cambridge Guide to the Medical Interview and Explanation and Planning Scale.

RESULTS Interviews and presentations contained largely congruent content, but social history and the patient's perspective were consistently excluded from case presentations. Although six of 19 specific communication skills were used in over 80% of resident encounters, the effective use of communication skills was widely variable. In most presentations, the quality of resident–patient communication was not explicitly conveyed to the supervisor. Although resident presentations provided 'cues' about communication issues, supervisors rarely responded.

CONCLUSIONS This study lends support to direct observation in workplace-based learning of communication skills. When content areas such as the patient's perspective and education are excluded, supervisors cannot address them. In addition, presentations provided minimal insight about the quality of resident–patient encounters and limited the ability to address communication skills. These skills could be enhanced by attending to communication cues during case presentations, making increased use of direct observation and feedback, and promoting faculty development to address these missed teaching opportunities.

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INTRODUCTION

The purpose of graduate medical education is to ensure that residents will deliver competent patient care. The Accreditation Council for Graduate Medical Education (ACGME) has listed six core competencies: (i) practice-based learning and improvement; (ii) patient care and procedural skills; (iii) systems-based practice; (iv) medical knowledge; (v) interpersonal and communication skills, and (vi) professionalism.[1] The bulk of residency education occurs in the realm of what is often referred to as workplace-based learning, in which residents learn from the experience of working in a clinical practice environment. Research on workplace learning focuses on opportunities and factors that influence workplace learning, including the importance of interaction or 'shared moments' between residents and supervisors.[2–4] Billett and others identify that learning in the workplace can be significantly enhanced through guided learning opportunities such as those that allow the asking of questions, problem solving and role modelling.[2,5] Oral case presentations following resident–patient interactions are often the main educational interaction between residents and supervising physicians in the workplace and provide the primary mechanism by which individual faculty supervisors can assess and address resident competence in patient care.

The benefits of this oral case presentation have been detailed for many years as providing information to attending physicians to guide resident physicians' delivery of patient care.[6–8] However, little is known about the extent to which oral case presentations accurately convey the content and quality of resident–patient communication during learner encounters with patients.

Some studies have identified the misinformation that is included or the pertinent information that is excluded in learner case presentations.[9,10] For example, these studies found that, most commonly, psychosocial data, including information on details such as the patient's occupation, living arrangements and illicit drug use, were consistently left out of oral presentations. Although these studies describe the content of resident case presentations, they do not compare the information. Observational studies have examined types of information typically not collected by resident physicians during interviews with patients.[10–12] These studies report that residents consistently failed to collect information related to emotional and psychosocial factors and patient perspectives on the impact of health problems on daily life, and they rarely identified and outlined an agenda for the visit.

A number of observational studies have identified weaknesses in communication skills amongst residents during the patient interview.[9,10,13–15] Because supervising physicians rarely observe residents during patient encounters, the main insight a clinical teacher has into a resident's communication skills is limited to the content and quality of the oral case presentation following the patient interview.[16] We were unable to find previous studies examining the accuracy of case presentations compared with patient encounters.

The purpose of this study was to determine whether the case presentation gives a picture of the patient encounter that is sufficiently realistic to enable the supervisor to guide the workplace-based learning process of the resident and to ensure good patient care. This study sought to compare the content and process of resident–patient interactions with subsequent oral case presentations. More specifically, the study aimed to determine: (i) whether the type of information exchanged in the resident–patient encounter matches the information conveyed in the case presentation of the clinical encounter; (ii) whether the quality of resident–patient communication is accurately conveyed in the case presentation, and (iii) whether supervisors address both effective and ineffective resident–patient communication processes identified in resident case presentations.

METHODS

This observational study compared videotaped resident–patient interactions with audiotaped case presentations in a family medicine residency (also known as a postgraduate training programme) clinic on campus in a tertiary academic medical centre. The residents see their own patients and the majority of teaching is based on case presentations made to supervisors. There is no specific goal for these teaching encounters beyond a standard approach for the supervised guidance of patient care. With regard to learning communication skills, although there is no formal communication

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curriculum, some communication skills are addressed intermittently in interactive resident conference sessions. Family medicine resident–patient encounters were video-recorded and, immediately after the patient encounter, the subsequent case presentation of patient information delivered by the resident to the supervising physician was audiorecorded. Case presentations were delivered in a conference room and typically lasted 10–15 minutes. Video-recording was chosen for patient encounters and audiorecording for case presentations due to the location and availability of the recording equipment. All supervisors and 14 residents working in an ambulatory family medicine clinic were invited to participate in the study during June–August 2015 (Table 1). An e-mail was sent to all supervisors and residents explaining the process. It was also discussed in faculty meetings and resident meetings by the principal investigator and attendees were given the opportunity to ask questions. Residents were told they could refuse. Patients seeing clinic residents were invited to consent to video-recording as a standard part of educational practice in the residency. Patients were not informed or asked for consent for this specific study. For the study, after video-recording consent had been obtained, resident physicians were informed that patients had agreed to be video-recorded and that the investigator would audiorecord subsequent resident case presentations to supervisors. The study was determined to be exempt from the need for human subjects approval by the University of Iowa Institutional Review Board.

Table 1 Demographic characteristics of resident and supervisor participants

Demographic	Participants, *n* (%)
Resident training year	
R1	4 (29%)
R2	6 (43%)
R3	4 (29%)
Resident sex	
Male	5 (36%)
Female	9 (64%)
Supervisor sex	
Male	12 (55%)
Female	10 (46%)
Supervisor years in current job	
1–5 years	8 (36%)
6–10 years	3 (14%)
11–15 years	5 (23%)
16–20 years	2 (9%)
21–25 years	2 (9%)
>25 years	2 (9%)

R1 = 11–12 months into training; R2 = 23–24 months into training; R3 = 35–36 months into training.

Content analysis

The video- and audiorecordings were transcribed verbatim by a medical student (GP) engaged in a summer research fellowship. The authors (KS, MR, PB and GP) developed a rubric based on the standard content of the medical interview which identifies main categories of information (i.e. chief complaint, history of the present illness, family history, social history). Using this rubric, three reviewers (KS, MR and GP) independently compared the content of the resident interview and case presentation transcripts. This content analysis allowed the investigators to identify congruent information between interviews and case presentations, interview content missing from the presentation, and extra information not collected during the interview but included in the case presentation. The three reviewers (KS, MR and GP) then compared their analyses of each case to reach consensus on the presence or absence of information collected in the interview and information conveyed during the case presentation. If analyses were incongruent between reviewers, the transcripts were closely re-reviewed to reach consensus.

Communication skills analysis

Video transcripts and recordings were analysed independently by two raters (KS and MR) using an adapted Calgary–Cambridge Guide to the Medical Interview and Explanation and Planning Scale (CCG-EPSCALE) tool to assess resident communication skills developed by the authors (KS, MR, PB and GP) (Fig. 1). Although we used all the items from the EPSCALE, we added relevant items from the CCG in order to capture relevant information-gathering and relationship-building skills.[16–18] The raters (KS and MR) then compared scores to reach consensus for each scale item. In the analysis of results, if the resident did not demonstrate the specific skill or used it only in a cursory fashion, it was scored as 'omitted or ineffectively used'. For example, if the resident used a closed opening question with little room for response, the resident was scored as having 'ineffectively used' the appropriate opening

EPSCALE	0	1	2	3
Building the relationship				
Respects patient	Shows no interest or concern OR is overtly offensive	Little interest and concern for patient's well-being	Some interest and concern for patient	Clear interest and concern for patient as a person
Empathy	Ignores patient's feelings and predicament	Minimal (only non-verbal) response to patient's feelings and predicament	Some verbal response to patient's feelings and predicament	Sensitive verbal and non-verbal response to patient's feelings and predicament
Uses appropriate non-verbal behaviour	No eye contact OR inappropriate non-verbal behaviour	Little eye contact OR some inappropriate non-verbal behaviour	Good eye contact, generally appropriate non-verbal behaviour	Good eye contact, substantial and appropriate non-verbal behaviour
Providing the correct amount or type of information for the individual patient				
Chunks and checks, using patient's response to guide next steps	Gives long, uninterrupted speech	Occasional pauses but does not elicit patient's response	Pauses, with some effort to gauge patient's response before proceeding	Repeatedly chunks and checks, using patient's response to guide next steps
Assesses the patient's starting point	No attempt to gauge patient's starting point	Attempts to find out starting point but still gives information as prepared	Discovers starting point, some adjustment to information giving	Discovers starting point and patient's preference for amount of information, carefully tailors explanation
Discovers what other information would help patient	No effort to discover what extra information would help	Little effort to discover or respond to patient's information needs	Makes some effort to discover and address patient's information needs	Carefully and repeatedly seeks and addresses patient's needs
Aiding accurate recall and understanding				
Organises explanation	No organisation of explanation	Minimal organisation of explanation	Organises explanation, but no overt signposting or summarising	Organises explanation, with overt signposting or summarising
Checks patient's understanding	Does not check patient understanding	Minimal checking that patient has understood	Carefully checks that patient has understood	Asks patient to restate information given
Uses clear language	Frequent use of unexplained jargon and confusing language	Some unexplained jargon and confusing language	Majority of language used clear (unexplained jargon words only)	Clear language used throughout
Achieving a shared understanding: incorporating the patient's perspective				
Relates explanations to patient's illness framework	No reference at all to patient's ideas, concerns, expectations	Little attempt to relate explanation to patient's ideas, etc.	Makes reasonable attempt to relate explanation to patient's ideas, etc.	Sensitively relates explanation to ideas, etc.
Encourages patient to contribute reactions, feelings and own ideas	No opportunities for patient to contribute	Limited opportunities for patient to contribute but no response	Several opportunities for patient to contribute with some response	Actively encourages patient to contribute and responds well
Picks up and responds to patient's non-verbal and covert verbal cues	No response to patient's non-verbal and covert verbal cues	Minimal response to patient's non-verbal and covert verbal cues	Some response to patient's non-verbal and covert verbal cues	Sensitively responds to patient's non-verbal and covert verbal cues
Planning: shared decision making				
Explores management options with patient	No exploration of available options, only directives given	Offers options in cursory fashion	Carefully explores options with patient	Fully explores options and dilemmas, signposting position of equipoise or own preferences
Involves patient in decision making	No involvement or resists involvement of patient in decision making, directives given	Makes suggestions rather than directives but limits patient involvement in decision making	Actively encourages patient involvement in decision making	Establishes level of involvement patient wishes in decision making: if appropriate, fully encourages patient to make choices and decisions
Appropriately negotiates mutually acceptable action plan	Presents plan without checking with patient	Presents plan with cursory check for patient's approval	Reasonable and appropriate negotiation of plan with patient	Full and appropriate negotiation of plan with patient; final agreement checked

Figure 1 Adapted Calgary–Cambridge Guide to the Medical Interview and Explanation and Planning Scale (CCG-EPSCALE) Tool[16–18]

question. Conversely, if the resident demonstrated the specific skill during the encounter, he or she was scored as having 'effectively used' the skill.

RESULTS

The study included 14 residents, 22 faculty supervisors and 22 patients who agreed to participate. One or two patients per half clinic day per resident were recruited during June–August 2015. Visit types included resident–patient encounters that varied in focus and ranged from an encounter with a new patient to the provision of follow-up care for acute and chronic problems. Prevention-only physical examinations were excluded.

Congruency of content

In the 22 cases analysed, presentations and corresponding patient interviews revealed several categories of content were present in over 50% of cases, including chief complaint, history of the present illness, medications and allergies, past medical and surgical history, family history and relevant review of systems (Table 2).

Several content areas elicited during the interview were shared with faculty supervisors in fewer than half of the case presentations. These areas included additional patient complaints (41%), the patient's perspective (41%), and planning and patient education (18%) (Table 2). Although residents only explicitly and effectively sought the patient's perspective (information about patient ideas, concerns or expectations) in 9% of encounters, they did at times receive the patient's perspective inadvertently through the patient's narrative.

However, even when the patient's perspective was either explicitly or inadvertently elicited during the resident–patient encounter, it was often omitted from

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Table 2 Content congruence between the resident–patient encounter and corresponding case presentation

Encounter content	Cases (n = 22) in which content was presented, %
History of present illness	100%
Chief complaint	95%
Physical examination findings and laboratory or test results	95%
Medications, allergies	68%
Past medical or surgical and family history	63%
Differential and assessment	55%
Review of systems	55%
Social history	50%
Additional patient complaints	41%
Patient perspective (ideas, concerns, expectations, effects)	41%
Planning	22%
Patient education	18%

the case presentation. Further, few to no details regarding the content of discharge planning and patient education from the patient interview were shared with the supervisor during the case presentation. For example, planning details communicated during a clinical encounter for a patient recovering from a *Clostridium difficile* infection included eating probiotic yogurt and ensuring that the patient stayed well hydrated, but none of this was conveyed during the case presentation.

In most of the cases in which patient education information was missing from the case presentation, the content communicated to the patient was factually accurate; however, there were two instances in which the patient education information given in the clinical encounter was erroneous. Because the information was not discussed in the case presentation, the attending physician was unaware that misinformation had been given. These instances are described here:

Case 1.
Information: 'We don't normally do a full 2-week course of metronidazole to treat *C. difficile* infections, but for you, we'll make an exception.'
Error: The duration of treatment for mild to moderate disease is routinely 10–14 days.

Case 2.
Information: 'Trazadone is not a long-term solution for the treatment of insomnia.'
Error: Trazodone is often used in long-term insomnia.

Communication skills

Communication skills used effectively and skills omitted or ineffectively used during resident encounters with patients were identified (Table 3). Specific communication skills used effectively in over 80% of patient encounters included using a warm greeting or introduction respecting the patient, listening attentively to the whole story, utilising clear language without jargon in history taking and information sharing, and giving organised explanations. However, we found variability in the quality of resident communication and effective use of specific communication skills with patients. Communication skills such as establishing rapport, agenda setting, explicitly eliciting the patient's perspective, exploring management options, and checking the patient's understanding were omitted or ineffectively used in more than 50% of total encounters.

Resident cues and supervisor responses

In most case presentations, the quality of communication between residents and patients (either effective or ineffective) was not explicitly conveyed to the supervisor. For example, the video analysis of one case revealed a relatively chaotic and closed-ended resident–patient encounter, but the subsequent case presentation was well organised and appeared to be thorough. Similarly, very effective resident communication in the patient encounter was not explicitly revealed during case presentations. Instead, residents provided indirect 'cues' about communication issues in 16 of 22 (73%) case presentations, but supervisors responded to only four of the cues and only two responses were related to communication. Examples of these cues and responses can be found in Table 4.

DISCUSSION

This study examined the resident–patient encounter and subsequent oral presentation in order to allow the content (what was communicated between the resident and the patient) and process (communication skills during the encounter) to be

Table 3 Resident communication skills EPSCALE data

Communication skill	Encounters, *n* (%)	
	Skill used effectively	Skill omitted or used ineffectively
Building a relationship		
Offers a warm greeting or introduction	20 (91%) +	2 (9%)
Establishes initial rapport	9 (41%)	13 (59%) X
Respects the patient	21 (95%) +	1 (5%)
Demonstrates empathy	15 (68%)	7 (32%)
Uses appropriate non-verbal signals	17 (77%)	5 (23%)
Gathering information		
Uses an appropriate opening question	13 (59%)	9 (41%)
Builds an agenda	1 (5%)	21 (95%) X
Listens attentively to the whole story	18 (82%) +	4 (18%)
Uses open questions	13 (59%)	9 (41%)
Uses clear language and no jargon	20 (91%) +	2 (9%)
Elicits the patient's perspective	2 (9%)	20 (91%) X
Giving information		
Assesses the patient's starting point	13 (59%)	9 (41%)
Organises explanations	20 (91%) +	2 (9%)
Chunks and checks*	14 (64%)	8 (36%)
Uses clear language and no jargon	19 (86%) +	3 (14%)
Explores management options	7 (32%)	15 (68%) X
Involves the patient in decisions	13 (59%)	9 (41%)
Negotiates the plan	10 (45%)	12 (55%) X
Checks the patient's understanding	8 (36%)	14 (64%) X

'+' indicates the skill was used in ≥80% of total encounters; 'X' indicates the skill was omitted or ineffectively used in >50% of total encounters.
* Provides information in manageable parts, and uses the patient's responses to guide next steps.
EPSCALE = Explanation and Planning Scale.

compared with information conveyed during the case presentation. In addition, this study identified cues to resident–patient communication issues conveyed by residents during their case presentations, and investigated if and how supervising faculty staff responded to these cues.

Oral case presentations help faculty supervisors both to ensure good patient care and to educate the resident.[9–11,13–15] This is the first study to comparatively examine the content of resident–patient encounters and subsequent case presentations, and it revealed findings similar to those studies that have examined these two areas separately. Our results demonstrate that although supervisors can gain a clear picture of the medical history from the information conveyed in case presentations as most medical content was congruent, some types of content were consistently omitted. In our study, omission of the patient's perspective was attributable to either a failure to elicit this information from the patient in the first place or to the resident's decision not to convey this content during the case presentation. Cali and Estrada posit that one possible explanation for why the patient's perspective and psychosocial information may not be collected is that the content and focus of clinical interviews often directly mirror what is found in oral case presentations.[19] It is known that eliciting the patient's perspective (ideas, concerns, expectations, effects on life) during both history taking and management discussions has been demonstrated to lead to more accurate and satisfying patient encounters, as well as to better patient understanding and adherence to treatment regimens. This implies that residents may conduct their encounters with patients by focusing solely on the information they believe they will be expected to present to the attending physician, rather than adjusting to the unique context of the physician–patient interaction. Additionally, our study identifies the fact that patient education provided by the resident is not shared during the case presentation. When these content areas are omitted from case presentations, supervisors lack the opportunity to address important history taking and patient education issues with residents that can ultimately affect patient outcomes.

Our analysis identified the effective use of several communication skills during resident–patient encounters. However, we also noted a consistent lack of the effective use of communication skills recommended in the clinical communication literature (e.g. agenda building, developing a non-medical rapport, exploring management options, negotiating treatment plans, checking the patient's

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Table 4 Examples of resident communication cues in case presentations and supervisor reactions

Cues to which supervisors responded	Supervisor response
'Yep he hated Carnation Instant Breakfast. I told him to put like, just make a milkshake and stuff but he couldn't. He didn't like it. So he's having pizza, hot dogs …'	Supervisor elicited: 'So are you having him do extra food?'
'Mom has one concern, do we think his circumcision is done properly? … and I offered to have someone else take a look. And so that's what Mom wanted'	'We'll go ahead and see him'
'We talked about mammograms not being an awesome test'	'She'll probably benefit from some written instructions at the next time'
'Patient did not know if she had tetanus'	Supervisor suggests how to get the information
Cues to which supervisors did not respond	**Potential supervisor response**
'No and he doesn't seem very concerned. I mean he's more concerned about the big picture'	Supervisor could provide skills whereby resident could *get the patient to share ideas, concerns, expectations*
'I kind of had trouble getting him to open up about his diet'	Supervisor could *discuss open-ended questions and ways to get more of the patient story*
'I might try and give her some home videos and exercise …'	Opportunity to discuss *educating the patient with chunks and checks and teach back*
'And I told him he needs to talk to the urologist and oncologist. He's just worried …'	Supervisor could address the *patient's worry and help the resident see this affects the plan*

Italics lettering delineates the potential communication issues or skills that could be addressed in response to the cues given in the resident's statement.

understanding, eliciting the patient's perspective).[9,10,13–15] These findings echo other observational studies of resident communication.[9–11,13–15,20] Our findings demonstrate that the case presentation does not accurately reflect exactly what happens in the examination room. Therefore, faculty supervisors are unaware of the resident communication issues that require to be addressed, either by reinforcing effective behaviours or by providing more effective guidance for enhancing these skill areas.

An important finding in our analysis was that residents at times provided case presentation cues to communication issues that may have affected the resident–patient encounter without conveying them directly. However, supervisors rarely took the opportunity to address these cues. This finding is similar to that in the study by Carrese et al., which demonstrated that faculty supervisors rarely addressed cues explicitly in resident presentations relating to ethical and professionalism issues.[21] These authors posit several explanations for the failure of supervisors to respond to everyday ethics cues, including competition with other precepting tasks within limited time, failure to perceive these issues as priorities in patient management, and lack of recognition of these issues when they arise and, when they are recognised, feeling ill-prepared to teach about them. Rosenbaum and Axelson identify similar reasons why communication cues from learners may not be addressed.[22] Firstly, because so many issues must be addressed in response to case presentations, communication issues may be perceived as lower in priority. However, if faculty supervisors recognise that these skills do need to be addressed in every teaching encounter, they may be able to choose when it is appropriate to address them rather than omitting them altogether. Secondly, clinical teachers may lack effective communication skills themselves, may struggle to articulate what they are and may lack confidence in their ability to teach about them effectively.[22] Institutional support for additional faculty development to allow clinical teachers to learn about effective communication skills and how to

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teach them effectively in the workplace setting could help to address both issues.

Evidence suggests that communication skills and empathy decline during clinical training and during residency[23–30] as residents integrate into the workplace. Existing research, as well as the current study, suggests that the case presentation may be a key opportunity to address these issues.[22] In addition to picking up and responding to presentation cues, a communication issue could be generated by directly asking residents questions about their communication with patients, including what they learned about the patients' agendas, perspectives and understandings of their conditions, what patient education they provided and how, whether they felt the patients comprehended the education, and also about any particular communication challenges they encountered.[23–30] This study adds to the existing research focusing on the complexities of workplace-based learning in resident education. Although we found that the oral case presentation provides an important interaction between resident and supervisor, and a potential opportunity for guiding communication skills learning in the workplace, we identified the limitations of relying on case presentations alone for addressing communication skills. This study also lends support to the importance of direct observation in workplace-based learning of communication skills.[3,4,31] In addition, through the use of observation via video- and audiorecordings, this study addresses what Dornan identified as a significant methodological gap in research on workplace-based learning, which has mainly relied on learner and teacher self-reports through interviews.[3]

Our comparative findings point to the limitations of relying solely on case presentations to assess and address resident communication skills. Particularly striking in our analysis was the incongruity between what was observed in the patient room and the subsequent case presentation, and how little insight overall the case presentation provided about the quality of the resident–patient encounter. Ultimately, this study points to the importance of direct observation of resident–patient encounters by supervising faculty staff, followed by the provision of feedback as a necessary strategy for accurately assessing and addressing resident communication skills in a meaningful way.[32] Feedback based on direct observation (either in person or through video-recording) can reinforce effective communication skills, elicit or convey appropriate content and education, and provide further guidance when opportunities for improvement are present. Again, faculty development may be necessary to enhance supervisors' confidence and ability to use observation and feedback effectively and efficiently.

This study has several limitations. It was conducted in a single academic family medicine residency programme with a limited number of both resident and faculty supervisor participants and therefore may not be generalisable to other types of residency programme. We observed a limited number of resident–patient encounters that varied in focus, which may have affected the content of the encounters, the communication skills used by residents, the issues raised in case presentations, and subsequent supervisor responses. Although at least one interview-based study has examined student perspectives on the extent to which case presentations convey the quality of the learner–patient interaction,[22] future research could ask both residents and teachers about their perspectives on these issues.

CONCLUSIONS

We demonstrated the limitations of relying on case presentations alone. Assessing and addressing both content and communication skills could be enhanced by attending to communication cues during case presentations, making greater use of direct observation and feedback, and providing faculty development to support clinical teachers in addressing these missed teaching opportunities.

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