The Nature of Excellent Clinicians at an Academic Health Science Center: A Qualitative Study

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Abstract

Purpose
To understand the nature of excellent clinicians at an academic health science center by exploring how and why excellent clinicians achieve high performance.

Method
From 2008 to 2010, the authors conducted a qualitative study using a grounded theory approach. Members of the Clinical Advisory Committee in the Department of Pediatrics at the University of Toronto nominated peers whom they saw as excellent clinicians. The authors then conducted in-depth interviews with the most frequently nominated clinicians. They audio-recorded and transcribed the interviews and coded the transcripts to identify emergent themes.

Results
From interviews with 13 peer-nominated, excellent clinicians, a model emerged. Dominant themes fell into three categories: (1) core philosophy, (2) deliberate activities, and (3) everyday practice. Excellent clinicians are driven by a core philosophy defined by high intrinsic motivation and passion for patient care and humility. They refine their clinical skills through two deliberate activities—reflective clinical practice and scholarship. Their high performance in everyday practice is characterized by clinical skills and cognitive ability, people skills, engagement, and adaptability.

Conclusions
A rich theory emerged explaining how excellent clinicians, driven by a core philosophy and engaged in deliberate activities, achieve high performance in everyday practice. This theory of the nature of excellent clinicians provides a holistic perspective of individual performance, informs medical education, supports faculty career development, and promotes clinical excellence in the culture of academic medicine.

The mission of academic health science centers (AHSCs) is to improve the health of society through clinical care, education, and research.[1] The public expects AHSCs to provide the highest quality of patient care, often to the most complex patient populations. New physicians train and learn the practice of medicine from role models at these institutions.[2] High-performing or excellent clinicians are important to these activities; thus, they are important to the vitality of AHSCs.

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Although national societies and educators have developed competency frameworks, listing the categories of behaviors expected of all physicians,[3–5] a rich holistic description of the outlier—the excellent clinician whose performance lies far above and beyond mere competence—is lacking. Decades of research has examined medical expertise from the perspectives of clinical reasoning and cognitive psychology in controlled settings.[6,7] Education researchers have called for the exploration of expert performance using naturalistic inquiry to provide unique insights and alternative constructions of medical expertise.[7]

We believe that exploring the personal experiences and the ethos of excellent clinicians may reveal important insights into what elements make and contribute to their expert performance. Thus, we designed a qualitative study to develop an understanding and a theory of what makes an excellent clinician, by exploring excellent clinicians' notions of expert performance through their lived experiences. Such a theory of the nature of excellent clinicians will inform medical education and faculty career development, organizational quality performance, and the culture of academic medicine.

Method

Study design

We designed and conducted a qualitative study, based on semistructured interviews of excellent clinicians, at a pediatric AHSC from September 2008 to June 2010. We used a grounded theory approach, which employs an inductive strategy whereby researchers use systematically collected data to generate ideas and theories.[8] We chose this research design for several reasons. First, the concept of excellent clinical performance is not fully understood, and the purpose of our study was to develop theory. Qualitative research is particularly well suited to areas for which limited research exists and to research for which the purpose is theory generation.[9] Second, a clinician's development of medical expertise is a complex construct,[10] and we sought to gain insight into personal experiences and social phenomena, both of which can be revealed by qualitative research.

We conducted our study through the Department of Pediatrics at the University of Toronto and the Hospital for Sick Children. A well-developed program in the Department of Pediatrics promotes career development and

compensation along several career tracks, including scholarly clinical care, education, and research.[11,12] We were specifically interested in expert performance in the context of an AHSC because this is where new physicians train and learn the practice of medicine from role models. Furthermore, we wanted a homogeneous sample as a starting point for our study. Finally, our affiliation with this AHSC facilitated our access to peer nominators and participants and allowed us to effectively probe participants' responses during the interviews.[13]

Our study involved two phases. Phase One included the peer nomination of excellent clinicians, and Phase Two included in-depth interviews of those excellent clinicians. We obtained ethical approval for our study from the research ethics board at the Hospital for Sick Children.

Study sample and data collection

In Phase One, we conducted a nominating process to generate a list of excellent clinicians from which we could recruit participants for Phase Two. To explore the construct of the excellent clinician from the broadest perspective, we did not limit the nominating physicians to any criteria, nor did we restrict the number of excellent clinicians each could nominate. Through an electronic survey, we asked members of the Department of Pediatrics Clinical Advisory Committee (CAC) to nominate physicians who they felt were excellent clinicians. The CAC includes 12 physicians, who are chosen by the chair of pediatrics on the basis of their strong interest and recognized expertise in clinical medicine. The mandate of the CAC is to advise the chair on issues pertinent to clinical care. Because of the number of years that each member had been working in the department (all more than five years), the significant amount of time each had spent in clinical care activities, their diverse clinical environments, and their role in the yearly assessments of physicians' clinical dossiers,[12] which include domains such as bedside clinical performance, the CAC members had a good understanding of the breadth of their faculties' skills and expertise. In addition, the CAC requires its members to reflect on both clinical excellence and individual clinical performance, often resulting in debate and active discussion at meetings. For these reasons, we agreed that the CAC members were well suited to nominate excellent clinicians from the department.

In Phase Two, we interviewed the most frequently nominated excellent clinicians, ensuring that we had diversity in pediatric specialties, academic job profiles, years on faculty, and academic rank (see Table 1). Two members of our research team conducted each one-hour interview. One of us (S.M.), a clinician with formal training in qualitative research interviewing, led the interviews, and another of us (V.J.), a research assistant with a psychology background, supplemented the probing and took notes. As a faculty member in the Department of Pediatrics, S.M. had an insider's perspective and was familiar with the role of clinicians and the culture in the department and hospital. As a nonclinician new to the department, V.J. had an outsider's perspective. We initially piloted and then adjusted the interview protocol.

We asked questions about the following concepts—the participant's reflections on the practice of others whom he or she sees as excellent clinicians (e.g., Thinking of someone who you consider to be an excellent clinician, what stands out to you about this person? What makes him or her an excellent clinician?); and the participant's reflections on his or her own skills (e.g., As you may know, you were nominated by your colleagues as an excellent clinician. What do you think stands out to them about you?). Our questions also allowed participants to reflect on their own experiences and practice (e.g., Thinking about a diagnostic dilemma you have recently encountered, can you tell me how you approached that? How about a challenging patient encounter you have recently experienced? Can you tell me how you approached that?).

Finally, we audio-recorded and transcribed the interviews verbatim without identifying data.

Data analysis

We collected and analyzed our data concurrently, keeping with the grounded theory tradition. We analyzed the interview transcripts for emergent themes using a constant comparative approach. That is, we compared each piece of data with all others to conceptualize possible relationships.[8] We each independently read and analyzed the transcripts for emergent themes and theory. We met after the first and second interviews, then again after every third interview to compare our analysis and refine the coding structure. As a result of these meetings, we periodically refined the interview guide to explore emergent issues in greater depth. We continued to collect data until we achieved saturation of both the themes and theory development, consistent with a theoretical sampling approach,[14] which occurred after 13 interviews. To verify the trustworthiness of our results, we conducted a return of findings in the form of two focus groups, in which we presented the results of our study to 7 of the 13 participants. In this member checking exercise, many participants expressed a resonance with the developed theory and felt that it represented characteristics and attributes of themselves and of the excellent clinicians with whom they have worked.[15]

Table 1

Characteristics of the 13 Peer-Nominated Excellent Clinicians Interviewed, Department of Pediatrics, University of Toronto, 2008–2010

Characteristic	No. (% of 13)
Female	7 (54)
Generalist pediatrician	2 (15)
Subspecialist pediatrician	11 (85)
Endocrinology	1 (8)
Gastroenterology	1 (8)
Infectious diseases	1 (8)
Neonatal intensive care	1 (8)
Nephrology	2 (15)
Neurology	2 (15)
Oncology	1 (8)
Rheumatology	2 (15)
Academic job profile	
Clinician investigator	4 (31)
Clinician educator	7 (54)
Clinician administrator	2 (15)
Academic rank	
Assistant or associate professor	7 (54)
Years on faculty	
>15 years	8 (62)

Results

We developed a rich model of the excellent clinician. Dominant themes fell

into three categories: (1) core philosophy, (2) deliberate activities, and (3) everyday practice (see Tables 2 and 3). *Core philosophy* included the personal values and beliefs that were important drivers of excellent clinical performance. *Deliberate activities* included the activities that were purposefully sought and performed to maintain and refine clinical performance. *Everyday practice* included the qualities that characterize high performance in daily clinical practice. We combined these themes into our theory of the excellent clinician—together, the core philosophy of these clinicians and their involvement in deliberate activities explained their high performance in everyday practice. We further elaborate on this theory and these themes below using representative quotes from the participants' interviews.

Table 2

Summary of the Themes and Subthemes From Interviews With 13 Peer-Nominated Excellent Clinicians, Department of Pediatrics, University of Toronto, 2008–2010

Theme	Description
Core philosophy	Personal values, beliefs, approach, or ethos
Intrinsic motivation	Motivation that comes from within the individual, also referred to as drive or passion for patient care
Humility	Open stance, open-mindedness, willingness to consider alternate views, keenness to learn from others
Deliberate activities	Activities that are purposefully sought and performed to maintain and refine clinical performance
Reflective practice	Act of approaching clinical practice with self-awareness, attention to performance, and learning from practice
Scholarship	Broad range of activities including research, knowledge synthesis, dissemination, application, and teaching
Everyday practice	Qualities that characterize high performance in daily clinical practice
Clinical skills and cognitive ability	Clinical reasoning, knowledge integration and distillation, approach to problems and challenges
People skills	Skills employed when interacting with patients, families, colleagues, trainees, and other health care workers
Engagement	Enthusiasm and commitment to be involved in patient care
Adaptability	Ability to recruit and employ necessary skills to match each unique situation

Core philosophy

We identified two major themes that characterized the core personal philosophy and approach of these excellent clinicians—high *intrinsic motivation* for patient care and *humility*.

Intrinsic motivation. Participants consistently described high intrinsic motivation for clinical care as a critical factor for achieving excellence. Other words that they used to describe this internal desire for clinical care were "passion" and "drive." One participant described her approach to her work as "You have to put passion first … your patients have to come first … the well-being of your patients and the care you give has to be first and foremost as to what you do."

Participants did not feel that external recognition was a primary motivator. Their intrinsic motivation manifested as a commitment and enthusiasm for clinical care that many commented was easily felt by colleagues and, at times, also by patients.

Excellent clinicians' intrinsic motivation stems from multiple sources. When asked what fueled his motivation, one participant explained:

> The best clinicians love to solve problems … they are really curious … the piece about curiosity extends well beyond just the diagnostic reasoning … curiosity means that these people want to be involved, and love actually [all aspects of] the patient's care.

Participants often cited intellectual curiosity as a source of motivation and referred to it as a strong desire to solve clinical problems or dilemmas and also as a way to understand health and disease processes.

Other sources of excellent clinicians' intrinsic motivation include a desire to build relationships with patients, colleagues, and other professionals. In addition, participants emphasized ensuring that their patients achieved the best outcome and the satisfaction of doing good:

> I really absolutely love doing [patient care], and nothing that I do in terms of research or any of the other things I'm involved in gives me the same satisfaction … that extra effort and commitment brought to the child's care, is something I've always felt personally very rewarding.

In fact, participants described intrinsic motivation as being critical to sustaining high performance over time. They felt that a loss in one's motivation or drive would compromise one's level of performance. In contrast, several participants also described when that motivation was taken to the other extreme (i.e., when motivation was too intense it was not healthy): "Everything one did was focused on doing nothing but that," which sometimes led clinicians to "get caught up in the emotions."

Humility. The other dominant theme that characterized the core philosophy of the excellent clinicians is humility, and it too is critical to achieving high performance. The concept of humility emerged as participants described an open stance or open-mindedness, a willingness to consider alternate views, and a keenness to learn from other perspectives. Their humility, however, was not characterized by being timid or self-denigrating but, rather, by a healthy sense of self-confidence: "You obviously have to have a certain amount of confidence … otherwise you're totally ineffectual…. That's a fine balance."

Participants felt strongly about the virtue of humility: "There is no place for arrogance in clinical care. The person who thinks they know it all … you're dangerous. It's time for you to retire."

Participants described humility as a key approach to several qualities of everyday practice. For example, they emphasized the importance of understanding one's abilities and limitations and how this insight influenced their attitudes and behavior. They therefore saw humility as a virtue that enhanced one's people skills:

Table 3

Qualities of High Performance in Everyday Practice, From Interviews With 13 Peer-Nominated Excellent Clinicians, Department of Pediatrics, University of Toronto, 2008–2010

Qualities	Concepts	Description	Representative quotes
Clinical skills and cognitive ability	• Clinical reasoning based in history and physical exam • Ability to integrate knowledge • Ability to distill complex issues • Pragmatic approach • Manages uncertainty well	• Values the importance of clinical skills in practice • Diagnosis and management strongly based in history and physical exam • High diagnostic acumen • Breadth and depth to knowledge base and overall broad thinking • Able to take knowledge from various domains (e.g., evidence, experience, ethics) and put it all together • Enters a complex or ambiguous clinical situation and is able to identify the key issue(s) • Ability to perceive nuances in clinical situations that are important for clinical reasoning and also learn from them • Well-developed, structured approach to clinical problems, yet does not practice "cookbook" medicine • Uses common sense and is practical in diagnostic and management approach • In situations of uncertainty can problem solve and/or think out of the box • In situations of uncertainty is able to access or mobilize expertise of others and resources effectively	I always like to make my own assessment of the patient…. We're second and third tier in an institution like this where you're receiving information from individuals and you're hooked in automatically into their way of thinking because they presume a certain pathway…. So independently I have to go and make my own assessment…. I have to see the patient, I have to see the parent to actually see am I thinking the same way? It's the ability to hone in on the problem not just having a cookbook approach to every single patient but to be able to really adjust to the context to what the problem is, and what the setting is … with a very insightful kind of approach to taking the history, opportunistic way of doing the physical exam, and then, you know, putting the case together. Whatever abnormality you find needs to be cohesive and synthesized, you want to make it into a rational whole kind of thing rather than just pieces…. It's the knowledge, it's the clinical skills, it's being able to incorporate that into clinical judgment. And people sort of denigrate clinical judgment…. We've become so focused on tests, and on imaging as though that's the absolute answer to everything, because if you can't see it you can't believe it. I still would hold on to the value of clinical judgment. You've got to apply common sense…. I always used to make people say don't tell me the 6,000 things that this kid could have, all the way from bizarre and rare things. I said tell me the three things that this child is likely to have. And then we'll look at it, and then we'll figure it out. So I think common sense is terribly, terribly important. And we lose that sometimes in academics. The clinicians I admire most are the experts who still question their own expertise and still go back and say of all the things I've learned this doesn't fit and I'm not comfortable just making the assumption…. I'm going to go and do whatever it is that needs to be done.
People skills	• Communication • Collaboration • Humanism • Inspires confidence	• Listens well, communicates respectfully, allows adequate time for communication, makes a point of communicating in person • Works well with and respects all members of the health care team, collegial • Breaks down hierarchical barriers in social environment • Engages people and builds relationships well • Draws on expertise of others • People and trainees want to work with them • Empowers families through communication and education • Never talks down to patients, families, or others • Takes strong interest in knowing who patients and their families are as people • Compassionate, empathetic, and professional in their conduct • Caring, but keeps a healthy emotional distance in relationships with patients and their families • Conducts self in a way that inspires confidence in patients and colleagues	They know how to explain things to other people so that everybody feels informed rather than foolish. They communicate with families in a way that makes families feel that they've been, I keep using the word empowered, but knowledge is empowering…. They have a family leave the room with the feeling that…. I've just actually met somebody who really cares about my child and is really going to be committed. They all are people that are good at working in teams and value other people's contributions and expertise…. I think they all recognize that other people have contributions to make or are experts in areas that they might not be. And they're able to draw on those people. I think they are good at not getting caught up sometimes into the emotion of it. They have a lot of confidence so they don't get defensive really … and able to step back and separate themselves and really identify with what needs to be done. They also inspire confidence in the people around them, including the patient and the other members of the team.

(*Continues*)

Table 3

(*Continued*)

Qualities	Concepts	Description	Representative quotes
Engagement	• Enthusiasm for patient care • Commitment to be involved	• Enjoys and is excited by patient care • Patients and colleagues sense enthusiasm • Allots appropriate time to conduct clinical care, available and responsive, takes the extra "steps" to provide excellent care	The clinicians I admire most still have that internal drive to look for the one rare patient case report that might articulate what's right or wrong about that particular patient in terms of why they fit a diagnosis or they don't. Or looking to see if there's any new therapies that might just be better tolerated, or the better choice, or a little bit more effective. Are willing to pick up the phone and call five or six other people in order to be sure that what they're recommending is a consensus approach of other people's opinion they value…. They come back every time … with the scholarly, informed, enthused, educated approach to what they do.
Adaptability	• Ability to recruit and employ necessary skills to match each unique situation	• Strong core foundation that allows him or her to function at a high level in a variety of situations • Recognizes own limits and draws on expertise of others when necessary • Able to problem solve and to think creatively in new situations	The excellent clinician is someone who can adapt fairly quickly and figure out what they need to know to be able to accommodate a different kind of patient. I think you've got to be able to maybe have enough confidence to say listen, I do not know that and I have to look it up, I have to go to somebody else. Be willing to ask other people, be willing to write around, to ask.

"People who are truly good clinicians, never make a family, or a colleague feel that they are somehow beneath them."

Not only did humility enhance one's people skills but it also contributed to strong clinical reasoning and cognitive abilities: "You have to be very humble … in the diagnostic work-up, if you pursue a certain pathway and you stick to it, you don't remain open and flexible, that's where you're going to make mistakes."

Also of interest, participants often downplayed their personal role in their achievements and attributed success to their colleagues, circumstances, and environment, personifying the humility that they described in others.

Deliberate activities

Participants described the deliberate activities that they pursued to continually improve their performance. These activities fell into two broad themes—*reflective clinical practice* and *scholarship*.

Reflective clinical practice. Although a high volume of patient cases and extensive time spent in clinical practice was very important, many participants explained that it was not sufficient for high clinical performance:

> Don't think there's an automatic relationship between experience and an excellent clinician … you can make the same errors … numerous times, so just having the experience doesn't make for excellence … it's how you have used that experience and learned from that experience that makes a difference.

Participants described using self-awareness, attention to one's performance, and learning from one's mistakes as methods to improve in their daily clinical practice.

Scholarship. Scholarship had a broad meaning beyond research; it included activities involving knowledge synthesis, dissemination, application, and teaching. Participants saw scholarship as a vehicle that improved clinical performance by stimulating insight and reflection on practice. One participant described the intellectual process and impact of developing a clinical practice guideline or a lecture:

> It's really being thoughtful and reflective … when you go into something in any detail then you start realizing the layers of it … and every nuance has been dissected out … we need to try to advance thinking [and practice] about a topic.

Participants consistently described the value of scholarship from the perspective of patient care: "And you bring that new knowledge to every patient you see … from that perspective I think [scholarship is] important."

Participants also felt that engaging in scholarship had a direct impact on their practice of patient care and was particularly effective when it was integrated with their specific area of clinical practice.

Interestingly, participants saw scholarship as more than a means to improve clinical performance. Some spoke to the notion that scholarship helps develop one's reputation and academic career. In this context, participants commented on the tensions between scholarship and clinical care in academia:

> Scholarship may in fact be seen as more important than providing the clinical care itself, and that's when big tensions will occur because then … it is more important to write papers or guidelines … or be able to get your patients into a study versus really looking after the patients.

Everyday practice

The key qualities that characterized high performance in daily clinical practice were *clinical skills and cognitive ability*, *people skills*, *engagement*, and *adaptability* (see Table 3). Participants perceived excellent clinicians to possess multidimensional qualities and felt that high performance on all were necessary. Possessing outstanding clinical skills and cognitive ability or people skills was not sufficient alone. Both a high level of engagement in clinical care and adaptability ensured that the excellent clinician was able to apply these core skills in everyday practice. Participants also described the excellent clinician as one who could employ these multidimensional skills to function well

in a wide variety of situations within his or her domain of practice. Thus, the way in which their skills work together, and as a whole, is much more impactful than merely possessing any individual quality.

Discussion

Our study provides a holistic model of the nature of expert performance from the insights of excellent clinicians at an AHSC. Central to understanding how excellent clinicians achieve and maintain excellence in clinical care was a core personal philosophy driven by high intrinsic motivation for patient care and humility for the practice of medicine. These excellent clinicians also engaged in deliberate activities—reflective practice and scholarship—that they believed were critical for high performance. Many of the characteristics of daily practice catalogued in our study (clinical skills, cognitive ability, people skills) have been identified in models of professional medical competence.[3–5] However, our findings also illuminate further dimensions, such as adaptability and engagement. Together, these findings provide a rich picture of the nature of excellence beyond descriptions of competence.

Our findings build on and provide authentic representations of existing theories on the acquisition of expertise. Deliberate practice, for example, refers to a method of achieving high performance by repeatedly and actively participating in specific activities, with opportunities to problem solve, combined with performance feedback from a coach.[16] Similarly, the clinicians in our study described the importance of practice in a challenging environment, coupled with an approach to practice where one constantly learns from each clinical encounter. Participants obtained feedback from their peers and from reflecting on the outcomes and errors of their decisions. Adaptive expertise refers to an approach to performance characterized by flexibility, a desire to understand the nature of problems in one's domain, innovation, and an approach to practice in which one believes that learning is never complete.[7] Themes within our model of the excellent clinician—namely, intrinsic motivation, humility, scholarship, and adaptability—provide an illustration of adaptive expertise in practice.

We also found that high motivation for clinical care was key to high performance. Similarly, the business leadership literature describes the fierce resolve common to highly successful leaders.[17] We found the excellent clinician to be motivated by internal factors from multiple sources. Work in other fields found that intrinsic motivation, in contrast to extrinsic motivation, is a key factor to individual creativity and excellence.[18] In addition, little research exists on the importance of humility in medical practice.[19] Several thought pieces, including one by Osler in 1892, described the importance of humility in knowledge building, learning, and caring.[20–22] Our study provides evidence of the importance of this quality. Participants described the importance of humility in communication, clinical skills, clinical reasoning, and developing relationships with patients, colleagues, and health care professionals.

Several issues should be considered when interpreting the results of our study. First, we recruited participants from one discipline (i.e., pediatrics) and one AHSC (i.e., the Hospital for Sick Children). The themes that we uncovered must be explored in other contexts to strengthen their transferability. Second, we found our participants through a peer nomination process. Thus, our data may indirectly include the perspectives of the nominators. Third, we explored excellence from the personal insights of high-performing clinicians. Alternate perspectives on what defines high performance, such as from patients and academic leaders, are important to consider as well. Fourth, ideally one would also use quality-of-care performance measures or validated criteria to identify excellent clinicians. However, robust measures to identify such individuals are limited. Fifth, we explored participants' perceptions, because we were primarily interested in their attitudes and philosophy as they related to clinical practice. Other methods such as using field observations and comparative quantitative studies are needed to further understand the distinguishing features of excellent clinicians. Finally, our findings are hypothesis generating only.

Our findings have several implications for researchers, educators, and academic leaders. First, similar studies must be done in different contexts to test the transferability of our findings. Also, it is important to further study the concepts that we identified, such as the deliberate activities and the everyday practices of excellent clinicians, to describe with fidelity the real-world practices and habits of this group.[10] In addition, for training programs, our findings provide an integrated model of clinical excellence that supplements models of competence. It is a starting point for discussions around the attitudes, approaches, and behaviors to achieving excellence that is often lacking. Next, as many academic departments struggle with faculty career development and measurement around clinical excellence, our model could serve as a starting point to inform these goals. Finally, the research activities of academic departments often receive greater value than clinical activities, as reflected in the culture and in the promotions processes. Both are important to the vitality of the academic mission of AHSCs, and our findings underscore the importance of maintaining and fostering the passion and intrinsic motivation of academic faculty interested in scholarly clinical tracks.[17] Academic leaders can play an important role in influencing the culture of academic medicine by promoting and valuing clinical excellence.

Conclusion

To achieve clinical excellence in AHSCs, we must focus not only on systems excellence but also on individual excellence. Our findings add to our understanding of the nature of excellent clinicians in the academic context by providing a holistic perspective of individual expert performance. Educators and AHSC leaders can use this knowledge to foster high-performing clinicians and clinical excellence.

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