

Understanding trust as an essential element of trainee supervision and learning in the workplace

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Abstract Clinical supervision requires that supervisors make decisions about how much independence to allow their trainees for patient care tasks. The simultaneous goals of ensuring quality patient care and affording trainees appropriate and progressively greater responsibility require that the supervising physician trusts the trainee. Trust allows the trainee to experience increasing levels of participation and responsibility in the workplace in a way that builds competence for future practice. The factors influencing a supervisor's trust in a trainee are related to the supervisor, trainee, the supervisor–trainee relationship, task, and context. This literature-based overview of these five factors informs design principles for clinical education that support the granting of entrustment. Entrustable professional activities offer promise as an example of a novel supervision and assessment strategy based on trust. Informed by the design principles offered here, entrustment can

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support supervisors' accountability for the outcomes of training by maintaining focus on future patient care outcomes.

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Clinical teachers wrestle daily with how much autonomy to grant trainees for patient care. This challenge stems from the need to ensure quality patient care while also delegating increasing levels of responsibility to learners. One key variable in aligning the goals of patient care and learning is *trust* between the supervising physician and trainee. We argue that trust acts as a gatekeeper to the learner's increasing level of participation and responsibility in the workplace. In this article, we examine the literature on trust and propose a model for how trust modulates clinical participation, learning and autonomy.

For clinical learners to progress, they must earn their supervisors' trust. Learning in the clinical environment occurs through participation, as learners move from novices watching clinical practice to participants assuming limited and then more complex roles in patient care. Understanding trust is essential because meaningful participation in clinical activities requires that trainees be trusted by their supervisors to perform with increasing levels of independence and competence.

Trust entails believing or having confidence in someone or something (Oxford Dictionaries n.d., a). To entrust an individual with something is to "assign a responsibility to or put something into someone's care." (Oxford Dictionaries n.d., b) Trust develops between supervisor and trainee as "an emergent state" influenced by the interactions, context, and situation (Burke et al. 2007), as well as individuals' information processing, thoughts, and motivations. Although medicine as a profession historically has valued individual autonomy in service to one's patients (Cruess and Cruess 1997; Pont 2000), clinical training environments necessitate that supervising physicians share and even relinquish some autonomous responsibility to trainees for patient care activities. Entrustment recognizes not only trainees' competence, but also their habits of mind and professional traits that predict how they will behave in future clinical situations (Dijksterhuis et al. 2009). Trainees experience variation in how they are supervised and the amount of trust their supervisors have in them for unsupervised activities (Kennedy et al. 2007; Wimmers et al. 2006). Without trust, trainees can be perpetually marginalized to an assisting or observational role and left unprepared for eventual unsupervised practice. Over-trust, which occurs when someone trusts an individual more than is appropriate for the situation, can perpetuate inaccurate assessment of trainee ability and risk unsafe patient care (Goel et al. 2005).

The supervisor–trainee dynamic and the trust between them can be productively examined through the theoretical lens of sociocultural theory and legitimate peripheral participation in communities of practice (Lave and Wenger 1991). Workplace learning occurs as learners assume authentic roles that advance patients' care together with other health care team members (Dornan et al. 2007). Participating in the workplace builds knowledge, familiarizes learners with the setting and people involved, and provides exposure to the range of tasks and problems (Billett 2000). As learners acquire workplace knowledge, supervisors can afford them more independent responsibility. Through this evolution of learning and clinical participation, entrustment is engendered.

Recent research in medical education has provided empirical evidence about how supervisors develop trust in trainees. Ginsburg et al. (2010) identified trust as a major theme influencing supervisors' evaluations of residents. Supervisors reported incorporating their

perceptions of residents' credibility and willingness to seek help when determining how much they trusted those residents. Experienced clinicians confirmed that interpersonal and professional characteristics are critically important for entrustment (Wijnen-Meijer et al. 2013). Two studies have independently identified four broad factors that influence supervisors' trust in medical trainees: supervisor, trainee, context, and task (Sterkenburg et al. 2010; Dijksterhuis et al. 2009). For clinical trainees, interactions and relationships with supervisors are critical ingredients for learning, and trust is formed within the context of these workplace relationships. As emphasized in the nursing and psychology/organizational behavior literature, the inherently interpersonal nature of trust highlights the relationship between supervisor and trainee as an additional factor contributing to trust formation, along with supervisor, trainee, context, and task (Burke et al. 2007; Sterkenburg et al. 2010).

We propose a model that explains how trust enables clinical participation through these five factors—supervisor, trainee, supervisor–trainee relationship, context and task (Fig. 1). This conceptual framing can inform understanding of how supervisors reconcile complex information into a judgment to trust a trainee, and how those judgments may be both richly informed and potentially biased. The exploration of each of these five factors and the literature supporting their contributions to trust (Table 1) generate guidance in the form of design principles on how to structure learning and assessment to facilitate entrustment decisions.

We conducted a non-systematic literature search of the English-language literature focused on studies of trust in medical education, nursing, psychology, and business settings. One author (KEH) searched the MEDLINE, PsycINFO, Web of Science, and

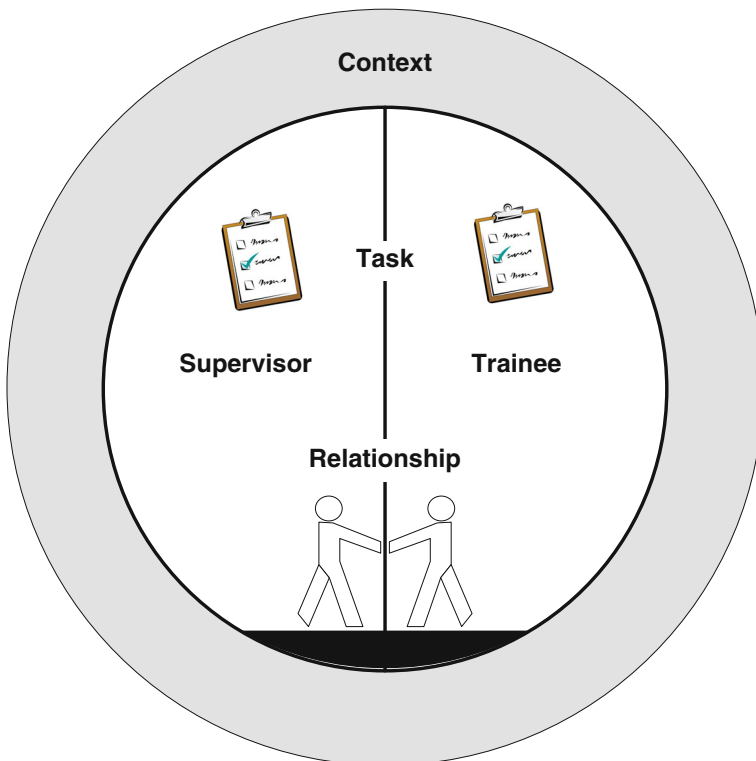


Fig. 1 A model of how trust enables clinical participation through five factors

Table 1 Summary of factors that affect clinical supervisors' trust in medical trainees

Facet and components	Description	Implications for entrustment	Source (Author, Year)
<i>Supervisor</i>			
Clinical competence	Clinical skills expertise	Supervisor's own clinical skills inform approach to supervision of trainee	Kogan et al. (2010)
Assessment expertise	Expertise in judging performance	Experience and expertise in observing, rating performance enhance judgment of entrustment	Govaerts et al. (2011)
Familiarity with clinical context	Knowledge of the people, patterns of interaction, and workflows	Orientation to culture and expectations in the environment for new supervisors informs and calibrates their assessments	Johnson et al. (2001), Sutkin et al. (2008)
Attitudes and propensity to trust	Dispositional characteristic of the supervisor	Certain personality characteristics and sets of experiences influence supervisor's likelihood of trusting a trainee	Costa et al. (2001)
Accountability	Accountability to patients trainee will encounter in the future	Supervisor feels accountable to trainee, patients, and society	Ulmer et al. (2008)
<i>Trainee</i>			
Competence and experience	Trainee's aptitude, experience, clinical skills, clinical reasoning	A trainee earns a supervisor's trust through successful completion of clinical tasks	Brower et al. (2000, 2009), McAllister (1995), Mayer et al. (1995)
Attitudes and habits of mind	Habits of ongoing self-assessment: anticipatory reflection, reflection-in-action and reflection-on-action	Trainee appropriately seeks and incorporates feedback in challenging or unfamiliar situations	Sargeant et al. (2010), Blatt et al. (2007), Mamede et al. (2008), Teunissen et al. (2009)
Insight	Discernment of own limitations and knowing when to ask for help	Trainee demonstrates awareness of own limitations and appropriate use of supervision	Ginsburg et al. (2010), Papadakis et al. (2005)
Self-confidence and willingness to ask for help	Willing to take on new challenges and approach unfamiliar or adverse situations without overconfidence	Trainee advances own learning through new challenges, using resources when needed	Bénabou and Tirele (2003), Grant and Dweck (2003)
<i>Relationship between supervisor and trainee</i>			
Relationship formation	Characteristics of and interactions between supervisor and trainee	Similarity of expectations and approach to clinical practice between supervisor and trainee, and efforts of trainee to work with and align with supervisor, influence relationship formation	Severinsson and Borgenhammar (1997), Hosmer (1995), Chambers and Long (1995)

Table 1 continued

Facet and components	Description	Implications for entrustment	Source (Author, Year)
Relationship interference with assessment	Role ambiguity of supervisor as coach, advocate or evaluator	Supervisor's understanding of role and attachment to trainee affects ratings and willingness to rate	Ginsburg et al. (2010), Deketelaere et al. (2006), Cavalcanti and Detsky (2011), Regehr et al. (2007)
Shared expectations	Defining and communicating expectations for performance, and using expectations to frame feedback to trainee	Common understanding of expectations facilitates trainee's development toward performance that will earn supervisor's trust	Kramer (1998), Landy et al. (1978), Webb (1997)
Amount of contact between supervisor and trainee	Contact ranging from initial impressions to longitudinal interactions	Longitudinal interaction allows supervisor to compare trainee current performance with past performance	Hasnain et al. (2001)
<i>Context</i>			
Affordances in the workplace	Opportunities for trainee's legitimate participation and autonomy in the workplace	Legitimate participation and opportunities to contribute to work allow trainee to demonstrate competence and build skills	Lave and Wenger (1991), Govaerts et al. (2007), Billett (1996), Bandura (2001)
Features of the setting that inform generalizability to other settings	Resources, staffing, support, patterns of interaction	Supervisor assumes some risk in determining boundaries of trust for new and future situations	Tjosvold and Tsao (1989)
Opportunities for familiarity with context	Understanding of the healthcare system	Trainee works collaboratively (teamwork) and effectively within the health care system	Hauer et al. (2009), Hirsh et al. (2007), Young et al. (2011)
Workload	Amount and duration of work and duty hours	Excessive work hours decrease performance and promote trainee burnout, both of which diminish supervisor's trust	Dyrbye et al. (2010), Kashner et al. (2010), Levine et al. (2010)
Timing of observation	Time spent on observation and rating	Supervisors make valid judgments based on frequent observations and timely ratings	Anim et al. (2009)
Workplace culture	Hidden or enacted/observed curriculum of clinical practice	Culture influences supervisor and trainee behaviors, including understanding of the purpose of assessment	Stern and Papadakis (2006), Gaufberg et al. (2010)

Table 1 continued

Facet and components	Description	Implications for entrustment	Source (Author, Year)
<i>Task</i>			
Sequencing	Tasks advance over time based on learner's learning needs	Trainees develop skill to perform increasingly more advanced tasks over time	Dornan et al. (2007), ten Cate (2006)
Task complexity	Task complexity—simple to complex	Complex tasks require more observations and delays judgment of entrustment	Lee and See (2004), Jackson and Kroenke (1999)
Patient complexity and risk	Medical complexity, psychosocial and communication challenges	Patient complexity requires defining entrustment for higher level patient management skills	Quirke et al. (2011), Mulder et al. (2010), Schillinger et al. (2004)

CINAHL databases for citations by using terms related to trust in the context of supervision, evaluation, assessment, and interpersonal relationships. Additionally, authors manually searched the bibliographies of relevant articles and identified articles from personal knowledge of the field. This selective approach yielded a broad range of literature that we synthesized to clarify and expand what has been identified in the medical education literature about supervisors' trust in their trainees to date (Sterkenburg et al. 2010; Dijksterhuis et al. 2009; Wijnen-Meijer et al. 2013). There are situations of trust that we did not include due to their distinctions from trust in the context of supervisory relationships, such as trust within therapeutic counseling relationships and public trust in law enforcement (Anderson 2001; Huq et al. 2011; Figueroa 2012).

Supervisor contributions to trust

The clinical supervisor identifies learning opportunities and empowers the trainee to take on increasing levels of responsibility to enable learning. However, supervising clinicians vary in their threshold for trusting trainees with responsibility for more autonomous practice (Sterkenburg et al. 2010). Clinical supervisors' expertise in clinical practice and learner assessment, their experience, attitudes (reflective behavior, self-confidence, propensity to trust), and perceived accountability all affect judgments about trainees.

Expertise

Supervisors' own clinical competence and experience influence their rating of trainees' clinical skills (Kogan et al. 2010), and in turn their trust in those trainees. Compared with novice supervisors, who focus on reporting rather than interpreting discrete behaviors, experienced supervisors make inferences and incorporate contextual factors into impressions and judgments that can inform entrustment decisions (Govaerts et al. 2011). Supervisors' skill in diagnosing a learner's level of competence is essential for understanding performance and planning next steps in the learner's development (Irby 1994). This ability to interpret the trainee's actions is derived from the supervisor's prior

experience, similar to the process of clinical reasoning (Govaerts et al. 2011). Supervisors observing trainees analyze performance against their own or predetermined and validated expectations (Irby 1992). They use either an analytical, checklist approach [e.g. miniCEX (Holmboe et al. 2003)] or, as described in a review of several studies, a holistic approach based on impressions analogous to pattern recognition in clinical diagnosis and the global impression of expert raters (Norman et al. 2007). Both strategies are used to evaluate trainees just as they are used to evaluate clinical problems (Govaerts et al. 2007; Eva 2005), and both can lead to trust when the supervisor observes desirable performance.

Experience

Supervisors' roles in the educational and health care system also affect their supervisory behaviors and expectations of learners (Biddle 1996). For example, an experienced inpatient supervisor working with a new team of residents and students spends the first days assessing each learner's level and learning needs. The supervisor might review a resident's written orders or recheck portions of the history until confirming that the resident's information and management has been reliable. Supervisors combine this direct knowledge of trainees' performance with their knowledge about graded levels of supervision to adapt learning opportunities to learners' developmental needs (Ashton 2004; Irby 1994). Supervisors ideally identify appropriately challenging tasks to promote learning through work. At times, though, they may feel pressure to prioritize work tasks that help advance patient care but are less optimally suited to learners' developmental needs (Deketelaere et al. 2006; Billett 1996).

Supervisors new to a context need support to gain skill in supervising learners effectively. Novice teachers struggle with self-confidence in their teaching and decisions about how much control to try to exert over their learners (Onafowora 2004). In clinical settings, more junior supervisors may hesitate to relinquish responsibilities to even qualified trainees. The terms 'resintern' (resident doing intern work) or 'resattending' (attending doing resident work) pejoratively describe how more senior physicians can do the work that should be entrusted to more junior team members. New supervisors may benefit from being partnered; for example, collaboration between junior and senior schoolteachers allows for shared goals and expectations for learners, and exchange of feedback among teachers achieves better learner outcomes (Johnson et al. 2001). Clinical supervisors might also be expected to assess more capably trainees' trustworthiness in a work environment where they are familiar with local expectations of learners, patterns of interaction among care providers, and norms around supervision.

Attitude/Habits

Propensity to trust is the willingness to trust, which is largely a dispositional characteristic (Costa et al. 2001). Personality, along with influences of experience and culture, shapes propensity to trust. Supervisors who impart positive attitudes and enthusiasm toward teaching and clinical care create positive learning environments that allow trainees to thrive and develop secure relationships with them (Irby 1978; Skeff et al. 1992; Sutkin et al. 2008). Simultaneously demonstrating their own attitudes toward learning and habits of mind, including processes of reflection and adjustment in their teaching and supervision, allows supervisors to both meet learners' needs and model essential skills (Pinsky and Irby 1997). Demonstrating reflection, awareness of the impact of one's actions, and openness to sharing one's questions can enable trainees to develop similar attitudes and habits that will earn supervisors' trust.

Table 2 Design principles for a learning and assessment system based on entrustment of clinical trainees for unsupervised practice

	“Traditional” structure for supervising trainees that can inhibit entrustment	Design principles for supervision of trainees that support entrustment	Rationale	Main related factor(s)
Training	Supervisors receive no training, or training focused on evaluation without attention to learner assessment and feedback.	Supervisors receive training in clinical supervision, feedback, and assessment of medical trainees.	Supervisors should recognize and be able to articulate appropriate performance expectations for trainees. They need to incorporate performance information into a judgment about trainees’ trustworthiness for unsupervised practice.	Supervisor
Individual tailoring	Trainees are assigned tasks based on year of training or staffing needs without individualization based on learning needs and milestones achieved.	Trainees are intentionally entrusted with designated tasks as they meet milestones and given increased opportunity for the unsupervised practice of those tasks.	As trainees earn greater trust, they should be allowed to practice those tasks in an increasingly independent manner.	Task
Inviting supervision	Trainees feel embarrassed, uncomfortable or unable to seek help from supervisors.	The educational and work climate encourages trainees to seek appropriate requests for supervisory support in unfamiliar clinical situations.	Trainees can be trusted to seek supervision when needed.	Trainee, context
Climate of reflection	The educational and clinical culture rewards clinicians who share knowledge and discourages questioning and uncertainty.	Educational programs and the clinical work environment foster a culture of self-reflection, self-assessment and lifelong learning in trainees and supervisors. Assessment strategies capture these behaviors.	Trainees will seek and incorporate feedback to improve their performance over time and engage in lifelong learning strategies with feedback on their progress in this area.	Trainee, context

Table 2 continued

	“Traditional” structure for supervising trainees that can inhibit entrustment	Design principles for supervision of trainees that support entrustment	Rationale	Main related factor(s)
Longitudinal relationship	Trainees and supervisors work together for brief periods in hospitals and clinics with frequent turnover of team members.	Clinical schedules facilitate longitudinal contact between supervisors and trainees.	Stable, longer term relationships, support entrustment decisions and pacing toward competence. Trainees who are required to adapt constantly to new systems and care teams may not be able to earn or show qualification for unsupervised practice.	Context, trainee–supervisor relationship
Gradual building of responsibility	Trainee assessment uses general end-of-rotation evaluations, sometimes without reference to competencies, milestones, or expected criteria for performance.	Trainee assessment aligns with developmentally sequenced competencies and milestones that ultimately demonstrate that the trainee has achieved competence to deliver safe and effective unsupervised patient care.	Supervisors should assess trainee performance based on developmentally sequenced competencies and milestones. Trainees should have the opportunity to be assessed performing tasks independently to advance their scope of unsupervised practice.	Supervisor, task
Grounded entrustment decisions	Trainee responsibilities are based on workplace needs and year of training, without consideration of appropriate supervision needed for individual trainees.	Entrustment decisions are informed by multiple sources of evidence that are collected in stable learning environments. Entrustment decisions determine trainees’ future clinical responsibilities.	Multiple pieces of evidence bring together aspects of trainee, task, context, supervisor, and trainee–supervisor relationship to inform entrustment decisions.	Overall—interplay of factors

Accountability

Clinical supervisors modulate their entrustment decisions by balancing goals for patient safety with progressively greater learner autonomy (Ulmer et al. 2008). Ultimately, supervisors aim to create a learning environment that does not sacrifice, and ideally enhances, high quality, safe patient care. Guided by a focus on learning through participation, a supervisor may aim to optimize learning activities based on trainees’ readiness to

perform them. As the accountable party for patients' wellbeing and safety, a supervisor shoulders responsibility for an entrustment decision, knowing it will grant that trainee the opportunity to provide future patients' care with progressively decreased levels of supervision. Insufficient appreciation of the implications of entrustment for trainees and patients can diminish a supervisor's motivation to render honest judgments about a trainee's weaknesses (Dudek et al. 2005; Cleland et al. 2008). For instance, a supervisor may find it simpler to 'pass' a trainee than to call out a major performance concern against trainee protests, even though addressing the concern would clearly prepare the trainee to provide better patient care in the future. Supervisors who lack clarity about the tasks the trainee is performing or is capable of performing, and the appropriate level of supervision needed, can hinder learning (Babbott 2010). Conversely, high trust in others with low accountability creates a precarious situation vulnerable to errors (Burke et al. 2007).

In summary, supervisors' clinical and teaching expertise, experience in the context, attitudes, and sense of accountability inform their ongoing observation, assessment and decision-making, which determine their trust in the learner. Appropriate trust enables participation in developmentally appropriate learning opportunities. The supervisor can then iteratively observe and assess to support further learning (Schuwirth and Van der Vleuten 2011) based on anticipating entrustment decisions. Faculty development that articulates expected performance standards can guide faculty members in implementing meaningful assessment of learners' trustworthiness for unsupervised activity (Table 2), which outlines recommendations for learner assessment based on entrustment.

Trainee contributions to trust

Trainees' competence and experience, as well as their attitudes, habits of mind, and self-confidence, all influence their supervisors' trust in them. Through the lens of workplace learning and legitimate peripheral participation, trainees' engagement represents their efforts to participate, and their skills and attitudes earn them additional opportunities for participation (Billett 2001; Lave and Wenger 1991). Ideally, trainees are highly engaged, and their supervisors provide them opportunities to perform clinical tasks aligned with their learning level to enable their development of expertise. Trainees can thus gain knowledge through participation that helps the work of the group and earns them more trust from their supervisors.

Competence

Trainees' competence, which encompasses their aptitude, prior experience, and clinical reasoning, informs entrustment (Kennedy et al. 2008; ten Cate et al. 2010). Trustees' competence has been identified as critical to development of trust from a supervisor across the fields of business and psychology (Brower et al. 2000, 2009; McAllister 1995; Mayer et al. 1995). Trainees' demonstrated ability to act autonomously and successfully engenders trust (Brower et al. 2009, Seppälä et al. 2011). In medical training, trainees develop skill in independently identifying familiar clinical patterns, building elaborate illness scripts, and applying previously learned information to new situations. The trainee who describes how she frames a case or how she sees a current patient as similar or different than a prior similar patient makes these skills transparent for the supervisor. Supervisors can recognize these signs of readiness for entrustment for increasingly less supervised practice (Schmidt and Rikers 2007; Bowen 2006).

Attitudes/habits

Trainees' attitudes and habits of mind are essential elements of professional formation (Cooke et al. 2010) that influence supervisors' willingness to trust them with clinical work. Other professional qualities important for entrustment include self-awareness and habits of lifelong learning. Anticipatory reflection, reflection-in-action and reflection-on-action are habits of self-monitoring that should develop during training and continue into clinical practice (Sargeant et al. 2010). Trainees exhibiting these behaviors perform better with standardized and actual patients (Blatt et al. 2007; Mamede et al. 2008). Trainees who seek feedback perceive that it benefits their learning and are more oriented toward learning than performance goals (Teunissen et al. 2009). Conversely, trainees who avoid feedback and self-reflection and fail to learn from experience are subsequently more likely to lose their license (Papadakis et al. 2005). Supervisors infer that trainees who show insight into personal strengths and limitations will more readily seek help in challenging situations and incorporate feedback (Ginsburg et al. 2010). A review of the literature suggests that, by self-assessing, trainees show their supervisors how they will seek information to fill knowledge and experience gaps and approach future situations (Eva and Regehr 2005). Given trainees' desire to maintain their own credibility, educational climates that engage trainees in appropriate requests for supervisory support may enhance their trustworthiness (Kennedy et al. 2009). The opportunity to earn trust itself motivates desired outcomes of training, including confidence in performing autonomously and professional maturation (Dornan et al. 2007; ten Cate et al. 2011).

Wijnen-Meijer et al. (in press, 2013) asked experienced clinical educators in the Netherlands and Germany which general trainee features lead them to trust trainees to perform critical tasks. Agreement was striking, including an evidence-based approach, discernment of limitations, active personal development, teamwork and collegiality, concise communication, empathy, openness and an active listening attitude toward patients, taking responsibility, coping with mistakes, and showing safe clinical practice and risk management behavior. Many of these represent attitudes and habits that pertain frequently in clinical practice.

Self-confidence

Trainees' self-confidence and self-regulation of their learning motivate them to embrace new challenges and approach unfamiliar or adverse situations with confidence, all of which can earn them supervisors' trust (Bénabou and Tirole 2003; Bandura 2001; Grant and Dweck 2003). Barriers to earning supervisors' trust can stem from trainees' fear and/or overconfidence. Fear of the consequences of assessment or a perception of negative intent of evaluators can prompt trainee suspicion, self-consciousness, and withdrawal, all of which would lead a supervisor to deem the trainee untrustworthy (Kramer 1998). Trainees may worry that constructive feedback will inhibit future opportunities rather than facilitate development (Bing-You and Trowbridge 2009; Mann et al. 2011). A review of the literature shows that over-confident trainees may ignore certain information, fail to seek help, or suffer cognitive biases in clinical diagnosis such as failing to gather or incorporate sufficient information and anchoring, all of which can also diminish trust formation (Croskerry 2003). For instance, trainees may fail to tell their supervisors about complaints from patients, readmissions, or unexpected emergency department visits that could have been avoided, either because they do not appreciate the significance of these events, or because they wish to preserve their reputation rather than learn from new patient information.

In summary, trust is engendered based on both trainees' competence, as manifested by their knowledge and clinical performance, and their attitudes toward learning, interactions, and feedback-seeking. Ideally, their training environment and curriculum support self-regulated learning, including habits of reflection, appropriate help-seeking, and self-improvement (Table 2). In conjunction with supervisors' contributions, trust forms in the context of an emerging supervisory relationship.

Relationship between supervisor and trainee contributions to trust

Trust formation within a relationship reflects an interpersonal dynamic, concordance regarding expectations, and amount of contact. Effective supervision necessarily involves development of a trusting relationship between supervisor and trainee, defined as belief in the other's word and willingness to act based on that individual's words or actions (Severinsson and Borgenhammar 1997; Hosmer 1995; Chambers and Long 1995).

Interpersonal dynamic

The supervisor–trainee relationship can either facilitate or impede entrustment. Relational signaling theory explains how signals (communications and actions) from trainee to supervisor convey a desire to form and sustain a relationship through alignment toward shared goals (Six and Skinner 2010). The shared goal of caring for patients leads supervisor and trainee both to act in the best interest of the patient. Relational signaling also influences the supervisor's and trainee's response to each other, ideally with trust-building behaviors such as appreciating each other's perspectives, showing integrity, and demonstrating flexibility when indicated. Supervisors are more likely to praise, and perhaps trust, trainees who approach clinical medicine in similar fashion to their own (Ginsburg et al. 2010). Trust entails an affective component that can potentially overwhelm the cognitive component of entrustment, as in the situation of intense personal feelings or transference (Lewicki et al. 2006). A strong relationship can also hinder a robust judgment by impeding honest communication or introducing bias (Govaerts et al. 2011; Cavalcanti and Detsky 2011). Ambiguity regarding the supervisor's role as advocate or coach who promotes development of competence versus evaluator who judges performance can influence willingness to predict future performance (Cavalcanti and Detsky 2011; Regehr et al. 2007). Learners are particularly sensitive to this role conflict in their supervisors (Deke-telaere et al. 2006). Supervisors may wish to be viewed favorably by learners and avoid the consequences, both interpersonal and legal, from identification of struggling learners. (Dudek et al. 2005).

Concordance

Shared understanding of expectations between learners and supervisors regarding requirements of the activity being performed and its relevance to patient care establishes a foundation for trust (Kramer 1998; Landy et al. 1978; Webb 1997). As shown in a literature review, supervisors who engage learners in an iterative process of feedback and re-assessment based on those expectations promote learners' development into trustworthy professionals who learn through their experiences (Smith and Irby 1997). Too commonly, though, learners receive vague or insufficient feedback that hinders their own determination about their performance relative to expectations (ACGME n.d.). One cause for inadequately

articulated feedback can be supervisors' lack of familiarity with individual learners' performance level or expectations for their stage of training (Sterkenburg et al. 2010).

Amount of contact

The amount of contact between trainee and supervisor is an oft-cited ingredient for accurate, successful assessment in medical education (Hauer et al. 2009). Supervisor familiarity with a trainee falls on a continuum from almost no knowledge, with assessment based on brief impressions, to extensive knowledge. Within minutes of interacting with a trainee, a supervisor begins to form impressions influenced by trainee characteristics and the nature of their work together. Initial impressions may constitute important judgments; for example, history-taking behaviors manifested within the first 3 min correlate with global ratings of clinical reasoning over a 15-min encounter (Hasnain et al. 2001). In the psychology field, trained and untrained observers predicted outcomes of marriages over a 6-year period based on affect manifested in 3-min observations of communication (Carrère and Gottman 1999).

Conversely, supervisors with ongoing knowledge of their trainees render judgments differently, as longitudinal relationships change the information that informs trust (Hafferty 1998). Early in a relationship, trust formation is often based on recognition of demographic similarities between two individuals; over time, shared experiences and knowledge inform trust formation (Levin et al. 2006). An ongoing relationship allows interpretation of trainee performance in relation to past performance and detailed formative feedback targeted to areas needing improvement. Longitudinal integrated clerkships model such a system where longitudinal contact (and hence relationship) with ample formative feedback mitigate evaluation concerns stemming from lack of familiarity (Mazotti et al. 2011).

In summary, the trainee-supervisor relationship influences trust formation based on shared experience and expectations. Sufficient, in-depth contact time enables relationship formation and the supervisors' appraisal of the trainee's learning level, abilities, and next steps in development within the learning environment (Table 2).

Context contributions to trust

Contextual aspects of clinical work that influence the learner's participation and consequently the supervisor's ability to trust the learner with responsibility include: workplace affordances (the invitational qualities and supports that enable learners to participate actively) (Billett 2001); the work environment including the healthcare system, training cycles, duty hours, workload and timing for observations; and workplace culture.

Workplace affordances

The degree to which the workplace affords or offers opportunities for participation in authentic work activities powerfully affects learning (Billett 2001), performance, and supervisors' assessment of that performance. Opportunities for trainees' legitimate participation and autonomy in the workplace are necessary for supervisors to judge trustworthiness (Billett 2001; Govaerts et al. 2011; Lave and Wenger 1991; Grant and Dweck 2003). Evaluators seek evidence of outcomes of learners' actions and their professional interactions in determining entrustment.

Work environment

The work environment can enable or deter trust formation. An under-resourced clinical environment with insufficient infrastructure or personnel could impede trainees' completion of clinical tasks, or alternatively require the trainee to perform at higher levels of responsibility (Gourevitch et al. 2008). For example, while alone in a hospital at night, a trainee might manage an unstable patient independently without an on-site supervisor. In this scenario, trust is afforded even though a supervisor may never have consciously decided that the trainee earned that trust. To a point, the stress in these situations may enhance performance, but excessive independence can become overwhelming and reduce performance quality (Wilkerson and Doyle 2011). In more well-resourced health care systems, some tasks are completed by others, potentially depriving the learner of those opportunities or alternatively enabling the trainee to spend time on more challenging tasks. For instance, trainees may not learn to do venipuncture if ancillary staff are always available to do so. As supervisors judge trainees' trustworthiness to perform tasks, they must determine the extent to which the entrustment generalizes to other settings (Tjosvold and Tsao 1989). Entrustment is thus contextual, but trainees must ultimately be able to apply both theoretical and practical knowledge across a range of settings.

Systems issues

Familiarity with a context builds trainees' nuanced understanding of the healthcare system and microsystems, and promotes robust teamwork and interdisciplinary communication (Hauer et al. 2009; Hirsh et al. 2007). Yet, trainees must adapt quickly to frequent transitions in today's clinical environment (Bernabeo et al. 2011). A major transition occurs each July when United States medical trainees simultaneously advance to higher levels of responsibility, and a recent review shows how patient outcomes and care efficiency can suffer (Young et al. 2011). Supervisors expect that more supervision will be required because trainees have not yet been assessed and evaluated for entrustment.

Workload

Trainees' work hours and workload have prompted studies showing that working excessive hours and/or multiple night shifts is associated with fatigue and burnout that can compromise performance (Dyrbye et al. 2010). Clinical schedules may facilitate or impede supervisors' observations of trainees that are necessary to determine entrustment. Frequent observations and timely ratings enable determination of competence; frequent handoffs and staggered shifts can mean that team members rarely see each other's work. While efforts to optimize the work environment could improve trainees' performance, assessment aimed at predicting trainees' future performance should incorporate understanding of differences in the workload and hours they will experience after training (Anim et al. 2009).

Workplace culture

Entrustment occurs within a particular workplace culture. The hidden curriculum entails messages that learners glean from people around them outside the context of the formal or stated curriculum (Hafferty 1998). The hidden curriculum informs supervisors' and trainees' understanding of professional behavior and acceptable methods of communication.

Supervisors both model and observe whether trainees adhere to group norms, values, and behaviors (Stern and Papadakis 2006), and violations of group standards will diminish entrustment.

In summary, learning environments and cultures that optimize workload and promote greater professional development have several key features. They facilitate task assignment appropriate to learning, foster robust communication and professionalism skills, and include community-building activities (Table 2) (Mazotti et al. 2011; Chou et al. 2011; Humphrey et al. 2007; Wasserstein et al. 2007). All of these can foster entrustment decisions for clinical tasks.

Task contributions to trust

The nature of a patient care task affects a supervisor's assessment of trainee trustworthiness. Task selection based on sequencing, complexity and risk can be designed to facilitate trainees' participation and a judgment of entrustment.

Sequencing

Successful workplace learning requires supported and guided participation, such that trainees can actively engage in the tasks afforded to them, and their supervisors can challenge them to perform at successively higher levels (Dorman et al. 2007). Tasks to be performed and judged should be meaningful parts of clinical practice that arise frequently or, for infrequently occurring activities, have high impact on patient care outcomes. Learning is optimized as a developmental process in which learners have graded opportunities for participation. For example, a trainee may be able to gather history and physical examination data before generating management plans within an inpatient team. A task can fall within a zone of proximal development, between tasks that they can perform independently and tasks they are only able to perform with assistance. Within this zone, task performance can contribute to progressive skill building (Vygotsky 1978).

A supervisor who can identify an appropriate learning task useful for patient care and provide relevant guidance can set the stage for skill development and eventually entrustment. Defined competencies and milestones can guide developmentally sequenced learning activities and assessments (Carraccio et al. 2002; Green et al. 2009) (Table 2).

Task complexity

The cognitive and psychomotor complexity of the task assigned to the trainee should align with the trainee's readiness to perform the task and earn further trust. Successful execution of a simple task in a straightforward situation could readily prompt an evaluator to render a judgment to trust the trainee to repeat that task. However, a judgment about performance with a more complex task would likely require more observation and information (Molloy and Parasuraman 1996; Lee and See 2004). The nature of the activity and how much it varies with each occurrence may also determine whether one or multiple observations are needed for a judgment.

Risk

A task carries a certain degree of risk for the patient, and supervisors will want higher degrees of trust to allow trainees to perform high-risk procedures and activities (Sterkenburg et al. 2010). Patients with complex psychosocial or medical presentations may test the boundaries of a trainee's interpersonal skills (Jackson and Kroenke 1999) and complicate entrustment decisions. High-acuity patients with life-threatening illness may comprise a separate category of entrustment decision for more advanced learners (Quirke et al. 2011). As the trainee learns through experience, progressive entrustments can allow for increasing levels of independence and confidence in future performance (Mulder et al. 2010).

In summary, tasks are ideally selected intentionally to be 'right-sized' for trainees to learn and demonstrate essential skills. Recognizing trainees' simultaneous roles as learners and care providers, task selection should satisfy both educational and patient care needs. Assessment based on entrustment can potentially achieve these dual goals.

Design principles to support entrustment decisions

Trust is essential for informing judgments regarding trainees' readiness for less supervised, autonomous workplace activity. We have reviewed the literature on the inter-related factors that contribute to a supervisor's decision to deem a trainee trustworthy. From our conceptualization, entrustment entails the interplay of influences related to the supervisor, trainee, supervisor–trainee relationship, context, and task (Fig. 1) (insert Fig. 1 approximately here). Our framing shows the inter-connectedness of factors that contribute to forming the trust needed to enable trainees' clinical participation and learning. For trainees to undertake increasingly complex responsibilities for patient care, they must participate and be assessed within the work context, focused on a shared purpose of providing high quality patient care.

Supervision based on entrustment fosters the supervisor's accountability not only for trainees' learning but also for their future patient care outcomes. That is, the supervisor anticipates how trainees will care for patients in the future. For learners, entrustment can motivate desirable behaviors and attitudes. Trainees who are challenged to learn through the experience of participating in patient care will experience the rewards of contributing to work accomplishment. The opportunity to earn trust can strategically motivate learners to perform in ways that earn them further trust, and in the dynamic and highly situational context of medical practice, educators should aim to ensure that trainees who earn entrustment can experience new opportunities for unsupervised practice afterward. A focus on entrustment therefore promotes collaborative supervisory relationships focused on shared goals for learning and patient care in the present and future. The context of the work environment informs the degree to which the supervisor perceives that entrustment portends performance in other settings. In addition, context includes the work values and culture that promote learning as a social process.

Our synthesis of the literature on entrustment supports design principles for supervisors' responsibilities in a learning and assessment system to maximize learning and opportunities for entrustment. Recognizing that our review is centered in a Western culture and experience in medical education, we propose these principles that could operate within this context of training, supervision, and hierarchy. As we articulate how a system would operate with trust as a focus, it is important to compare to the traditional approach

(Table 2). Faculty with clinical and supervisory expertise prepared to assume responsibility for entrustment decisions frame this decision-making in the context of accountability for future patient care. Trainees progressively assume greater independent responsibility aligned with their individual skill levels while developing habits of mind, in a climate that prompts them to recognize and reflect on their own strengths and invite supervision as needed. Trainees learn the value of developing into “trustworthy” clinicians through a curriculum that inculcates the professionalism necessary for a career that entails earning the trust of patients and colleagues (Cruess et al. 2010). The work environment is attentive to scheduling challenges and engages trainees in some longitudinal relationships. Assessment based on defined competencies and milestones captures the range of trainee behaviors that are foundational for entrustment. The program ensures that entrustment decisions are appropriately meaningful for the trainee by allowing gradual building of responsibility and new opportunities for unsupervised practice (Mulder et al. 2010).

Entrustable professional activities (EPAs) exemplify assessment based on trust, as an emerging strategy for supervision grounded in the trust a supervisor holds in a trainee to perform a given activity (ten Cate et al. 2010; Mulder et al. 2010). EPAs form “part of essential professional work in a given context” and “should be entrusted only to those individuals who have adequate competency to carry them out.” (Sterkenburg et al. 2010; ten Cate 2006; Mulder et al. 2010, Hicks et al. 2010) Assessment based on EPAs defines the degree of independence or supervision with which a trainee can be entrusted to perform a workplace task. Based on professional experience and understanding of the activity, the supervisor making an entrustment decision incorporates information from observations and inferences to render a forward-looking judgment about future performance of an activity.

In conclusion, the literature guides us to appreciate the crucial role of trust in clinical supervision through consideration of issues related to the supervisor, trainee, supervisor–trainee relationship, context, and task. With understanding of entrustment in trainee assessment, supervisors and educational programs can enable trainees to participate in the workplace as important members of a community of practice with responsibilities that advance the work of the clinical group and trainees’ development toward independent practitioner status. Further research to provide evidence of validity regarding entrustment decisions, including the consequences for future patient care, would build confidence in this approach to assessment within the educational community and the public. Studies on supervisors’ experience of achieving trust in learners and the influence of the supervisor–trainee relationship, context, and task would expand on the information presented. Implementation of clinical learning and assessment strategies based on entrustment decisions will require adapting the structure of trainee learning experiences, including their supervisory relationships and tasks, to facilitate informed entrustment.

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References

- Anderson, H. (2001). Post modern collaborative and person-centred therapies: What would Carl Rogers say? *Journal of Family Therapy*, 23, 339–360.
- Anim, M., Markert, R. J., Wood, V. C., & Schuster, B. L. (2009). Physician practice patterns resemble ACGME duty hours. *American Journal of Medicine*, 122, 587–593.

- Ashton, D. (2004). The impact of organisational structure and practices on learning in the workplace. *International Journal of Training and Development*, 8, 43–53.
- Babbott, S. (2010). Watching closely at a distance: Key tensions in supervising resident physicians. *Academic Medicine*, 85, 1399–1400.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26.
- Bénabou, R., & Tirole, J. (2003). Intrinsic and extrinsic motivation. *Review of Economic Studies*, 70, 489–520.
- Bernabeo, E. C., Holtman, M. C., Ginsburg, S., Rosenbaum, J. R., & Holmboe, E. S. (2011). Lost in transition: The experience and impact of frequent changes in the inpatient learning environment. *Academic Medicine*, 86, 591–598.
- Biddle, B. J. (1996). Recent developments in role theory. *Annual Review of Sociology*, 12, 67–92.
- Billett, S. (1996). Situated learning: Bridging sociocultural and cognitive theorizing. *Learning and Instruction*, 6, 263–300.
- Billett, S. (2000). Guided learning at work. *Journal of Workplace Learning*, 12, 272–285.
- Billett, S. (2001). Learning through work: Workplace affordances and individual engagement. *The Journal of Workplace Learning*, 13, 209–214.
- Bing-You, R. G., & Trowbridge, R. L. (2009). Why medical educators may be failing at feedback. *The Journal of the American Medical Association*, 302, 1330–1331.
- Blatt, B., Plack, M., Maring, J., Mintz, M., & Simmens, S. J. (2007). Acting on reflection: The effect of reflection on students' clinical performance on a standardized patient examination. *Journal of General Internal Medicine*, 22, 49–54.
- Bowen, J. L. (2006). Educational strategies to promote clinical diagnostic reasoning. *The New England Journal of Medicine*, 355, 2217–2225.
- Brower, H. H., Lester, S. W., Korsgaard, M. A., & Dineen, B. R. (2009). A closer look at trust between managers and subordinates: Understanding the effects of both trusting and being trusted on subordinate outcomes. *Journal of Management*, 35, 327–347.
- Brower, H. H., Schoorman, F. D., & Tan, H. H. (2000). A model of relational leadership: The integration of trust and leader–member exchange. *Leadership Quarterly*, 11, 227–250.
- Burke, C. S., Sims, D. E., Lazzara, E. H., & Salas, E. (2007). Trust in leadership: A multi-level review and integration. *The Leadership Quarterly*, 18, 606–632.
- Carraccio, C., Wolfsthal, S. D., Englander, R., Ferentz, K., & Martin, C. (2002). Shifting paradigms: From Flexner to competencies. *Academic Medicine*, 77, 361–367.
- Carrère, S., & Gottman, J. M. (1999). Predicting divorce among newlyweds from the first three minutes of a marital conflict discussion. *Family Process*, 38, 293–301.
- Cavalcanti, R. B., & Detsky, A. S. (2011). The education and training of future physicians: Why coaches can't be judges. *The Journal of the American Medical Association*, 306, 993–994.
- Chambers, M., & Long, A. (1995). Supportive clinical supervision: A crucible for personal and professional change. *Journal of Psychiatric and Mental Health Nursing*, 2, 311–316.
- Chou, C. L., Johnston, C. B., Singh, B., et al. (2011). A “safe space” for learning and reflection: One school's design for continuity with a peer group across clinical clerkships. *Academic Medicine*, 86, 1560–1565.
- Cleland, J. A., Knight, L. V., Rees, C. E., Tracey, S., & Bond, C. M. (2008). Is it me or is it them? Factors that influence the passing of underperforming students. *Medical Education*, 42, 800–809.
- Cooke, M., Irby, D. M., & O'Brien, B. C. (2010). *Educating physicians: A call for reform of medical school and residency*. Hoboken: Jossey-Bass.
- Costa, A. C., Roe, R. A., & Taillieu, T. (2001). Trust within teams: The relation with performance effectiveness. *The European Journal of Psychology of Education*, 10, 225–244.
- Croskerry, P. (2003). The importance of cognitive errors in diagnosis and strategies to minimize them. *Academic Medicine*, 78, 775–780.
- Cruess, R. L., & Cruess, S. R. (1997). Teaching medicine as a profession in the service of healing. *Academic Medicine*, 72, 941–952.
- Cruess, R. L., McIlroy, J. H., Cruess, S. R., Ginsburg, S., & Steinert, Y. (2010). The professionalism mini-evaluation exercise: A preliminary investigation. *Academic Medicine*, 81, S74–S78.
- Deketelaere, A., Kelchtermans, G., Struyf, E., & De Leyn, P. (2006). Disentangling clinical learning experiences: An exploratory study on the dynamic tensions in internship. *Medical Education*, 40, 908–915.
- Dijksterhuis, M. G., Voorhuis, M., Teunissen, P. W., et al. (2009). Assessment of competence and progressive independence in postgraduate clinical training. *Medical Education*, 43, 1156–1165.

- Dornan, T., Boshuizen, H., King, N., & Scherpbier, A. (2007). Experience-based learning: A model linking the processes and outcomes of medical students' workplace learning. *Medical Education*, *41*, 84–91.
- Dudek, N. L., Marks, M. B., & Regehr, G. (2005). Failure to fail: The perspectives of clinical supervisors. *Academic Medicine*, *80*(10 suppl), S84–S87.
- Dyrbye, L. N., Massie, F. S., Jr, Eacker, A., et al. (2010). Relationship between burnout and professional conduct and attitudes among US medical students. *The Journal of the American Medical Association*, *304*, 1173–1180.
- Eva, K. W. (2005). What every teacher needs to know about clinical reasoning. *Medical Education*, *39*, 98–106.
- Eva, K. W., & Regehr, G. (2005). Self-assessment in the health professions: A reformulation and research agenda. *Academic Medicine*, *80*, S46–S54.
- Figueroa, P. J. (2012). *Building community trust: Key strategies as perceived by law enforcement leaders*. Dissertation: University of La Verne.
- Gaufberg, E. H., Batalden, M., Sands, R., & Bell, S. K. (2010). The hidden curriculum: What can we learn from third-year medical student narrative reflections? *Academic Medicine*, *85*, 1709–1716.
- Ginsburg, S., McIlroy, J., Oulanova, O., Eva, K., & Regehr, G. (2010). Toward authentic clinical evaluation: Pitfalls in the pursuit of competency. *Academic Medicine*, *85*, 780–786.
- Goel, S., Bell, G. G., & Pierce, J. L. (2005). The perils of pollyanna: Development of the over-trust construct. *Journal of Business Ethics*, *58*, 203–218.
- Gourevitch, M. N., Malaspina, D., Weitzman, M., & Goldfrank, L. R. (2008). The public hospital in American medical education. *Journal of Urban Health*, *85*, 779–786.
- Govaerts, M. J., Schuwirth, L. W., Van der Vleuten, C. P., & Muijtjens, A. M. M. (2011). Workplace-based assessment: Effects of rater expertise. *Advances in Health Sciences Education: Theory and Practice*, *16*, 151–165.
- Govaerts, M. J. B., van der Vleuten, C. P. M., Schuwirth, L. W. T., & Muijtjens, A. M. M. (2007). Broadening perspectives on clinical performance assessment: Rethinking the nature of in-training assessment. *Advances in Health Sciences Education*, *12*, 239–260.
- Grant, H., & Dweck, C. S. (2003). Clarifying achievement goals and their impact. *Journal of Personality and Social Psychology*, *85*, 541–555.
- Green, M. L., Aagaard, E. M., Caverzagie, K. J., et al. (2009). Charting the road to competence: Developmental milestones for internal medicine residency training. *Journal of Graduate Medical Education*, *1*, 5–20.
- Hafferty, F. W. (1998). Beyond curriculum reform: Confronting medicine's hidden curriculum. *Academic Medicine*, *73*, 403–407.
- Hasnain, M., Bordage, G., Connell, K. J., & Sinacore, J. M. (2001). History-taking behaviors associated with diagnostic competence of clerks: An exploratory study. *Academic Medicine*, *76*, S14–S17.
- Hauer, K. E., O'Brien, B. C., & Poncelet, A. N. (2009). Longitudinal, integrated clerkship education: Better for learners and patients. *Point. Academic Medicine*, *84*, 821.
- Hicks, P. J., Englander, R., Schumacher, D. J., et al. (2010). Pediatrics milestone project: Next steps toward meaningful outcomes assessment. *Journal of Graduate Medical Education*, *2*, 577–584.
- Hirsh, D. A., Ogur, B., Thibault, G. E., & Cox, M. (2007). New models of clinical clerkships: "Continuity" as an organizing principle for clinical education reform. *New England Journal of Medicine*, *356*, 858–866.
- Holmboe, E. S., Huot, S., Chung, J., Norcini, J., & Hawkins, R. E. (2003). Construct validity of the miniclinical evaluation exercise (miniCEX). *Academic Medicine*, *78*, 826–830.
- Hosmer, L. T. (1995). Trust: The connecting link between organizational theory and philosophical ethics. *The Academy of Management Review*, *20*, 379–403.
- Humphrey, H. J., Smith, K., Reddy, S., Scott, D., Madara, J. L., & Arora, V. M. (2007). Promoting an environment of professionalism: The University of Chicago "Roadmap." *Academic Medicine*, *82*, 1098–1107.
- Huq, A. Z., Tyler, T. R., & Schulhofer, J. (2011). Why does the public cooperate with law enforcement? The influence of the purposes and targets of policing. *Psychology, Public Policy, and Law*, *17*, 419–450.
- Irby, D. M. (1978). Clinical teacher effectiveness in medicine. *Journal of Medical Education*, *53*, 808–815.
- Irby, D. M. (1992). How attending physicians make instructional decisions when conducting teaching rounds. *Academic Medicine*, *67*, 630–638.
- Irby, D. M. (1994). What clinical teachers in medicine need to know. *Academic Medicine*, *69*, 333–342.
- Jackson, J. L., & Kroenke, K. (1999). Difficult patient encounters in the ambulatory clinic: Clinical predictors and outcomes. *Archives of Internal Medicine*, *159*, 1069–1075.
- Johnson, S. M., Peske, H. G., Kauffman, D., & Liu, E. (2001). Counting on colleagues: New teachers encounter the professional cultures of their schools. *Educational Administration Quarterly*, *37*, 250–290.

- Kashner, T. M., Henley, S. S., Golden, R. M., et al. (2010). Studying the effects of ACGME duty hours limits on resident satisfaction: Results from VA learners' perceptions survey. *Academic Medicine*, *85*, 1130–1139.
- Kennedy, T. J., Lingard, L., Baker, G., Kitchen, L., & Regehr, G. (2007). Clinical oversight: Conceptualizing the relationship between supervision and safety. *Journal of General Internal Medicine*, *22*, 1080–1085.
- Kennedy, T. J., Regehr, G., Baker, G. R., & Lingard, L. (2008). Point-of-care assessment of medical trainee competence for independent clinical work. *Academic Medicine*, *83*, S89–S92.
- Kennedy, T. J., Regehr, G., Baker, G. R., & Lingard, L. (2009). Preserving professional credibility: Grounded theory study of medical trainees' requests for clinical support. *BMJ*, *338*, b128.
- Kogan, J. R., Hess, B. J., Conforti, L. N., & Holmboe, E. S. (2010). What drives faculty ratings of residents' clinical skills? The impact of faculty's own clinical skills. *Academic Medicine*, *85*, S25–S28.
- Kramer, R. M. (1998). Paranoid cognition in social systems: Thinking and acting in the shadow of doubt. *Personality and Social Psychology Review*, *2*, 251–275.
- Landy, F. J., Barnes, J. L., & Murphy, K. R. (1978). Correlates of perceived fairness and accuracy of performance evaluation. *Journal of Applied Psychology*, *63*, 751–754.
- Lave, J., & Wenger, E. (1991). *Situated learning. Legitimate peripheral participation*. Cambridge: University of Cambridge Press.
- Lee, J. D., & See, K. A. (2004). Trust in automation: Designing for appropriate reliance. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, *46*, 50–80.
- Levin, D. Z., Whitener, E. M., & Cross, R. (2006). Perceived trustworthiness of knowledge sources: The moderating impact of relationship length. *Journal of Applied Psychology*, *91*, 1163–1171.
- Levine, A. C., Adusumilli, J., & Landrigan, C. P. (2010). Effects of reducing or eliminating resident work shifts over 16 hours: A systematic review. *Sleep*, *33*, 1043–1053.
- Lewicki, R. J., Tomlinson, E. C., & Gillespie, N. (2006). Models of interpersonal trust development: Theoretical approaches, empirical evidence, and future directions. *Journal of Management*, *32*, 991–1022.
- Mamede, S., Schmidt, H. G., & Penaforte, J. C. (2008). Effects of reflective practice on the accuracy of medical diagnoses. *Medical Education*, *42*, 468–475.
- Mann, K., van der Vleuten, C., Eva, K., et al. (2011). Tensions in informed self-assessment: How the desire for feedback and reticence to collect and use it can conflict. *Academic Medicine*, *86*, 1120–1127.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *The Academy of Management Review*, *20*, 709–734.
- Mazotti, L., O'Brien, B. C., Tong, L., & Hauer, K. E. (2011). Perceptions of evaluation in longitudinal versus traditional clerkships. *Medical Education*, *45*, 464–470.
- McAllister, D. J. (1995). Affect-and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, *38*, 24–59.
- Molloy, R., & Parasuraman, R. (1996). Monitoring an automated system for a single failure: Vigilance and task complexity effects. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, *38*, 311–322.
- Mulder, H., ten Cate, O., Daalder, R., & Berkvens, J. (2010). Building a competency-based workplace curriculum around entrustable professional activities: The case of physician assistant training. *Medical Teacher*, *32*, e453–e459.
- Norman, G., Young, M., & Brooks, L. (2007). Non-analytical models of clinical reasoning: The role of experience. *Medical Education*, *41*, 1140–1145.
- Onafowora, L. L. (2004). Teacher efficacy issues in the practice of novice teachers. *Educational Research Quarterly*, *28*, 34–43.
- Oxford Dictionaries. (n.d.). Definition for “entrust.” Retrieved February 13, 2012, from <http://oxforddictionaries.com/definition/entrust>.
- Oxford Dictionaries. (n.d.). Definition for “trust.” Retrieved February 13, 2012, from <http://oxforddictionaries.com/definition/trust?region=us>.
- Papadakis, M. A., Teherani, A., Banach, M. A., et al. (2005). Disciplinary action by medical boards and prior behavior in medical school. *The New England Journal of Medicine*, *353*, 2673–2682.
- Pinsky, L. E., & Irby, D. M. (1997). “If at first you don't succeed”: Using failure to improve teaching. *Academic Medicine*, *72*, 973–976.
- Pont, E. A. (2000). The culture of physician autonomy; 1900 to the present. *Cambridge Quarterly of Healthcare Ethics*, *9*, 98–119.
- Quirke, S., Coombs, M., & McEldowney, R. (2011). Suboptimal care of the acutely unwell ward patient: A concept analysis. *Journal of Advanced Nursing*, *67*, 1834–1845.

- Regehr, G., Bogo, M., Regehr, C., & Power, R. (2007). Can we build a better mousetrap? Improving the measures of practice performance in the field. *The Journal of Social Work Education, 43*, 327–343.
- Sargeant, J., Armson, H., Chesluk, B., et al. (2010). The processes and dimensions of informed self-assessment: A conceptual model. *Academic Medicine, 85*, 1212–1220.
- Schillinger, D., Bindman, A., Wang, F., Stewart, A., & Piette, J. (2004). Functional health literacy and the quality of physician-patient communication among diabetes patients. *Patient Education and Counseling, 52*, 315–323.
- Schmidt, H. G., & Rikers, R. M. (2007). How expertise develops in medicine: Knowledge encapsulation and illness script formation. *Medical Education, 41*, 1133–1139.
- Schuwirth, L. W., & Van der Vleuten, C. P. (2011). Programmatic assessment: From assessment of learning to assessment for learning. *Medical Teacher, 33*, 478–485.
- Seppälä, T., Lipponen, J., Pirttilä-Backman, A., & Lipsanen, J. (2011). Reciprocity of trust in the supervisor-subordinate relationship: The mediating role of autonomy and the sense of power. *European Journal of Work and Organizational Psychology, 20*, 755–778.
- Severinsson, E. I., & Borgenhammar, E. V. (1997). Expert views on clinical supervision: A study based on interviews. *Journal of Nursing Management, 5*, 175–183.
- Six, F., & Skinner, D. (2010). Managing trust and trouble in interpersonal work relationships: Evidence from two Dutch organizations. *The International Journal of Human Resource Management, 21*, 109–124.
- Skeff, K. M., Stratos, G. A., Berman, J., & Bergen, M. R. (1992). Improving clinical teaching. Evaluation of a national dissemination program. *Archives of Internal Medicine, 152*, 1156–1161.
- Smith, C. S., & Irby, D. M. (1997). The roles of experience and reflection in ambulatory care education. *Academic Medicine, 72*, 32–35.
- Sterkenburg, A., Barach, P., Kalkman, C., Gielen, M., & ten Cate, O. (2010). When do supervising physicians decide to entrust residents with unsupervised tasks? *Academic Medicine, 85*, 1408–1417.
- Stern, D. T., & Papadakis, M. (2006). The developing physician—becoming a professional. *New England Journal of Medicine, 355*, 1794–1799.
- Sutkin, G., Wagner, E., Harris, I., & Schiffer, R. (2008). What makes a good clinical teacher in medicine? A review of the literature. *Academic Medicine, 83*, 452–466.
- ten Cate, O. (2006). Trust, competence, and the supervisors' role in postgraduate training. *BMJ, 333*, 748–751.
- ten Cate, T. J., Kusurkar, R. A., & Williams, G. C. (2011). How self-determination theory can assist our understanding of the teaching and learning processes in medical education. AMEE Guide No. 59. *Medical Teacher, 33*, 961–973.
- ten Cate, O., Snell, L., & Carraccio, C. (2010). Medical competence: The interplay between individual ability and the health care environment. *Medical Teacher, 32*, 669–675.
- Teunissen, P. W., Stapel, D. A., van der Vleuten, C., Scherpbier, A., Boor, K., & Scheele, F. (2009). Who wants feedback? An investigation of the variables influencing residents' feedback-seeking behavior in relation to night shifts. *Academic Medicine, 84*, 910–917.
- The Accreditation Council for Graduate Medical Education (ACGME). (n.d.). Core Competencies. Retrieved on January 11, 2012, from http://www.acgme.org/acwebsite/RRC_280/280_corecomp.asp.
- Tjosvold, D., & Tsao, Y. (1989). Productive organizational collaboration: The role of values and cooperation. *Journal of Organizational Behavior, 10*, 189–195.
- Ulmer, C., Wolman, D., & Johns, M. (Eds.). (2008). *Resident duty hours: Enhancing sleep, supervision, and safety*. Washington, DC: National Academies Press.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Wasserstein, A. G., Brennan, P. J., & Rubenstein, A. H. (2007). Institutional leadership and faculty response: Fostering professionalism at the University of Pennsylvania School of Medicine. *Academic Medicine, 82*, 1049–1056.
- Webb, N. L. (1997). *Research monograph No. 8. Criteria for alignment of expectations and assessments in mathematics and science education. Council of Chief State School Officers*. Retrieved on July 8, 2011, from <http://facstaff.wcer.wisc.edu/normw/WEBBMonograph6criteria.pdf>.
- Wijnen-Meijer, M., van der Schaaf, M., Nillesen, K., Harendza, S., & ten Cate, O. (2013). Essential facets of competence that enable trust in graduates: A Delphi study among physician educators in the Netherlands. *Journal of Graduate Medical Education, 5*, 46–53.
- Wijnen-Meijer, M., van der Schaaf, M., Nillesen, K., Harendza, S., & ten Cate, O. (in press). Essential facets of competence that enable trust in medical graduates: A ranking study among physician educators in two countries. *Perspectives on Medical Education*.
- Wilkerson, L., & Doyle, L. H. (2011). Developing teacher and developing learners. In T. Dornan, K. V. Mann, A. J. Scherpbier, & J. A. Spencer (Eds.), *Medical education theory and practice*. New York: Elsevier.

- Wimmers, P. F., Schmidt, H. G., & Splinter, T. A. (2006). Influence of clerkship experiences on clinical competence. *Medical Education*, *40*, 450–458.
- Young, J. Q., Ranji, S. R., Wachter, R. M., Lee, C. M., Niehaus, B., & Auerbach, A. D. (2011). “July Effect”: Impact of the academic year-end changeover on patient outcomes. a systematic review. *Annals of Internal Medicine*, *155*, 309–315.