Twelve tips for developing and maintaining a remediation program in medical education

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TWELVE TIPS

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ABSTRACT
Remediation in medical education, the process of facilitating corrections for physician trainees who are not on course to competence, predictably consumes significant institutional resources. Although remediation is a logical consequence of mandating, measuring, and reporting clinical competence, many program leaders continue to take an unstructured approach toward organizing effective, efficient plans for struggling trainees, almost all of who will become practicing physicians. The following 12 tips derive from a decade of remediation experience at each of the authors' three institutions. It is informed by the input of a group of 34 interdisciplinary North American experts assembled to contribute two books on the subject. We intend this summary to guide program leaders to build better remediation systems and emphasize that developing such systems is an important step toward enabling the transition from time-based to competency-based medical education.

Introduction

Medical educators have a responsibility to society to ensure that our graduates can practice medicine safely and competently. We all know that many medical trainees will stumble to some degree along the way and will need academic or personal support to stay the course toward professional competence. A few of these trainees require considerable resources to accomplish this goal. A generally accepted maxim states that educational program directors spend "80% of their time with 20% of their trainees". Therefore, remediation comprises a significant proportion of the regular practice for clinical educators. Currently, however, it is typically regarded as a necessary but isolated compartment of undergraduate medical education and residency training with limited committed resources or investment in enabling faculty to attain necessary expertise.

Historically, there have been many barriers to addressing the needs of learners who do not meet standards or expectations (Dudek et al. 2005; Hauer & Ciccone 2009; Guerrasio & Furfari 2014). These barriers include lack of consensus on developmentally appropriate benchmarks for clinical competence; lack of valid assessment tools; faculty pessimism that weaknesses in academic or professionalism domains can be effectively addressed; lack of faculty knowledge of and skills with effective remediation strategies; lack of clarity about who must confront these difficult issues; a desire to avoid conflict with trainees who are "not yet competent"; concerns about legal liability; and workplace changes, such as duty hours restrictions and shortened supervision assignments, which decrease continuity of faculty with learners. But times are changing. Competency-based medical education is advancing rapidly, we are increasingly mandated to measure and report detailed competence measures, interest in individualizing medical training is rising, and societal expectations and scrutiny are mounting. Supporting struggling trainees is a *de facto* value

of our profession, as reflected by low drop out and dismissal rates from training programs. Therefore, we argue that embracing remediation systematically with rigor is an absolute requirement of our social contract as a profession.

Developing our recommendations

In this article, we offer 12 tips for best practices at the institutional level for effective remediation in medical education. We base these tips on our own experience conducting remediation, the educational literature, conversations with medical educators globally through presentations and consultations, and completion of two books on the subject (Guerrasio 2013; Kalet & Chou 2014) We list five tips that develop the vision and structure for a program, five tips concerning faculty roles and development, and then two tips on accountability and outcomes (Table 1).

Tip 1

Programmatic vision and structure

Emphasize that remediation is a component of medical professionalism

Building on past efforts to set forth fundamental principles of doctoring (Sox et al. 2002; Cruess & Cruess 2008), Levinson and colleagues distilled four core values of medical professionalism: patient-centered care, integrity and accountability, fair and ethical stewardship of resources, and pursuit of excellence (Levinson et al. 2014). As a result of our social contract with society, medical schools and residency programs must be accountable for the professional competence of their graduates and trainees. Therefore, this process requires support for those who do not meet our standards, and remediation is fundamental to this effort. This argument is central to garnering resources to support

Table 1. Twelve tips for developing and maintaining a remediation program in medical education.

Programmatic vision and structure
1. Emphasize that remediation is a component of medical professionalism.
2. Adopt a programmatic approach.
3. Clearly articulate a framework for competence based on consensus.
4. Embrace a mastery learning approach that avoids arbitrary cut-offs.
5. Emphasize reflective practices associated with professional identity development and metacognitive competence.

Faculty roles and development
6. Structure remediation as an individual coaching relationship.
7. Separate remediation coaching from summative judgment roles.
8. Choose and develop appropriate faculty for remediation programs.
9. Develop and utilize a team of interdisciplinary experts.
10. Establish a community of practice for remediation coaching and allied experts.

Accountability and outcomes
11. Set clear expectations for success for all parties in a defined time frame.
12. Document remediation process and outcomes.

ongoing remediation programs, rather than providing them *ad hoc* once underperformance is recognized or, worse, having such underperformance ignored due to lack of conveniently available programs.

Tip 2

Adopt a programmatic approach

Due to the predictable need for remediation, we recommend incorporating it as an integral activity of an overall educational program in order to provide the resources, longitudinal oversight, and legitimacy needed to motivate learners to participate with the requisite level of effort. A small but growing literature is emerging on this programmatic approach to remediation in medical education (Winston 2012; Guerrasio 2013; Klamen & Williams 2013), while remediation programs have historically depended on the initiative and advocacy of an individual faculty member who demonstrates a special interest in or talent for this domain of education. Based on this emerging literature and our experience, we propose the following set of best practices:

(a) Authority of a medical education leader or body (for example, a dean for student affairs, office of undergraduate or graduate medical education, training program directors, and/or curriculum committee) to identify and motivate struggling learners and to marshal the resources to conduct this work.
(b) Identification and support of a small group of remediation coaches with interest in and time for conducting the work and building expertise needed.
(c) Mandatory participation for struggling trainees (see Tip 5).
(d) Use of multiple data sources to make a detailed assessment of the trainee's underlying deficiencies, as no single source is likely to have sufficient reliability and validity.
(e) A framework for an individualized written remediation plan, with a variety of strategies tailored to individual needs.
(f) Frequent monitoring and documentation of progress, particularly because the process can be slow, and because dismissal is a possible outcome of remediation.
(g) If an effective mentoring or advising program is not in place, the development of a longitudinal

faculty–trainee relationship to enable judgments about progress and explore attitudes, motivation, goal-setting, strategic planning, self-monitoring, and self-analysis in the struggling trainee.
(h) Resources for emotional support to both learners and faculty.
(i) Rigorous, clear program completion expectations.
(j) faculty development in coaching, facilitation, direct observation, and feedback skills (see Tip 6).

Short-term outcome data for a programmatic approach to remediation are encouraging as are related efforts taking place in other health professions (Winston 2010; Klamen & Williams 2011; Bebeau 2014).

Tip 3

Clearly articulate a framework for competence based on consensus

Without explicit areas of required competence, how do we identify trainees that are struggling, when intervention is indicated, and strategies that will help? Fortunately, a lively and productive debate has led to recent and important work in assessment in medical education. Medical training program accreditation bodies in Western Europe, the USA, Canada, the Middle East, and Asia have defined and operationalized the general domains of medical competence, and a global consensus on competency areas are emerging (Almoollim 2011; Scottish Deans' Medical Curriculum Group 2011; Accreditation Council for Graduate Medical Education 2012; Gruppen et al. 2012; Royal College of Physicians and Surgeons of Canada 2013). The existence of such a framework enables both a shared language for remediation work and ongoing research in this domain. Adoption of entrustable professional activities (ten Cate 2013) and developmentally tagged milestones will further aid in identifying trainees who are exceeding, meeting, or falling short of expectations.

Tip 4

Ensure a mastery learning approach that de-emphasizes short-term performance goals

Medical education is a mastery learning domain in that all learners must learn the material at roughly equivalent, high levels, even though the amount of time needed to reach those standards may vary (van der Vleuten et al. 1996). Therefore, we believe it is important to require that struggling trainees demonstrate not only the achievement of a minimal threshold for competence (e.g. passing a make-up knowledge exam) but also measurable steady improvement over time in the self-regulatory habits associated with mastery learning. These habits include consistent, practice-based improvement in study strategies through content previewing, goal setting, retrieval rehearsing/quizzing and seeking feedback and coaching. Therefore, to ensure sustained success, we may need to monitor struggling trainees more closely for longer periods of time, and in different, more process-based methods such as portfolios (Kalet & Pusic 2013) and regular reflective writing (Hatem 2014), than the traditional

assessment-oriented approach. A coaching model may be useful in developing and maintaining relationship between a trainee and group of trainees undergoes remediation processes (White & Barnett 2014).

Tip 5

Emphasize reflective practices associated with professional identity development and metacognitive competence

Medical trainees must develop an identity or self-concept as a physician in order to practice ethically. This long-term process, well understood in other professions, is increasingly being applied in medicine (Cox & Irby 2006; Bebeau & Faber-Langendoen 2014; Cruess et al. 2014).

Metacognition, a critical component of professional identity development, is defined as thinking about one's own or another's thinking process and emotions (Quirk 2006). Learners enter medical education environments with an undetermined ability to achieve expertise as shown by their ability to think critically, reflect in action, and take the perspectives of others (Quirk 2002). Yet, in order to achieve expertise they must be able to perform all of these skills, not only when observed in the context of remediation but also as a means for lifelong learning and improvement. Thus, it is important to incorporate metacognitive skills development into any remediation program, and to explicitly address these skills.

Tip 6

Faculty roles and development

Structure remediation as an individual coaching relationship

Although a predictable proportion of medical trainees will underperform during training, these struggling future physicians are typically required to repeat the same educational experience or assessment without remediation coaching (Hawthorne & Chretien 2014), even though such repetitive rehearsal itself is not predictive of success (Cleland et al. 2013). A remediation coach's job is to frame, monitor and document remediation work in the context of both the individual student's professional goals and the institution's expectations for professionalism.

White and Barnett recently synthesized a large literature on coaching into several foundational principles. Self-actualization theorizes that after basic needs are met, individuals possess strong motivation toward excellence. Additionally, if a coach adopts a nonjudgmental stance of unconditional positive regard, learners decrease resistance and become more highly engaged in collaborating to identify specific, achievable steps toward success. Finally, the constructivist principle suggests that individuals create their own reality and therefore, effective framing of the process (for example, as a learning and growth opportunity versus a punitive and shaming stance) significantly affects the ultimate outcome of the process. Furthermore, social constructivism proposes that a group of individuals (in this case, a struggling learner and the remediation coach) can co-construct meaningful learning (White & Barnett 2014).

Accordingly, this process necessitates not only identifying content goals to be achieved but also an effective working relationship with the learner. Although there are compelling reasons to have the learner take responsibility for identifying learning goals and means of achieving them individually, many of the common issues can be addressed in groups of learners. Recent work showed that students can successfully design remedial interventions that promote learner autonomy and support self-regulation, which is critical for continued professional development (Bierer et al. 2015). In this model then, the supervisor's role is to help craft and support the individual's goals, to facilitate dialogue with the individual and among a group and to offer reinforcing feedback and corrections when necessary. A number of studies support conducting focused aspects of remediation in groups of learners with an experienced coach (Saxena et al. 2009; Winston et al. 2014; Winston 2015).

Tip 7

Separate remediation coaching from summative judgment roles

Though there must be communication between remediation coaches and official supervisors of struggling trainees, the individual learner must know that the remediation coach has only his/her best interest in mind. Whereas in training programs with a limited number of faculty this separation may not seem feasible, it is worth the effort to identify a "neutral party" to conduct at least some of the remediation so that program leaders are freer to make difficult decisions if need be. It ensures that the learner can develop in a safe environment without threat of high stakes reprisal; that the remediation coach has no dual commitment, i.e. to both the learner's development and to the final decision about the success of the remediation; and that the institution can proceed with further administrative action if necessary without becoming too subjectively involved in the relationship with the learner. It allows a safe space for a learner to express vulnerable emotions such as anger, shame, sadness, or to explain cultural issues that may have arisen. These issues generally must be recognized and validated before the majority of remediation can occur.

Tip 8

Choose and develop appropriate faculty for remediation programs

As the fundamental clinical skills of experts are unconscious and automatic, master physicians may not be effective remediation coaches for struggling trainees. Contrastingly, experts in remediation have high clinical virtuosity, the ability to both recognize and motivate learners through their areas of struggle, and a wealth of patience and support. Domains of expertise must include the traditional competencies of medical knowledge, clinical reasoning, interpersonal communication, and professionalism. We have suggested a comprehensive list of competencies that a community of clinical educator remediators (see Tip 10, below) should attain to serve in this role (Table 2).

Table 2. Recommended faculty development competencies in remediation of medical trainees.[a]

A community of clinical educators conducting remediation should be able to:
1. Explore personal perspectives, attitudes, and beliefs that inhibit identification of learners who struggle.
2. Articulate how current learning theories apply to routine medical teaching and assessment practice as well as remediation.
3. List common and uncommon areas of difficulty for struggling trainees.
4. Discuss the role of adult development in assessing clinical competence.
5. Construct useful individualized remediation plans with proper accountability, based on critical review of objective and subjective assessment data for an individual learner.
6. Discuss the underlying assumptions of various assessment strategies and common misunderstandings (e.g. including psychometric and sociopsychological frameworks, the place of reliability, and validity of measures, the impact of context on performance).
7. Participate enthusiastically in setting standards for trainees and other performance assessment experiences including Performance Dimension, Frame of Reference, and Behavioral Observation training in order to improve skills and understand relevant aspects of "rater cognition".
8. Define clinical competence in a behaviorally specific and measurable manner.
9. Identify and design authentic complex tasks in which trainees can demonstrate competence.
10. Articulate expectations for professional behavior, appropriate attitudes, needed attributes and character traits of excellent physicians.
11. Discuss the impact of bias and prejudice on achievement.
12. Demonstrate taking an educational history from a trainee, including addressing clues suggesting the presence of a verbal or non-verbal learning disability or attention deficit disorder.
13. Demonstrate the ability to screen for common psychiatric issues that may manifest as, or co-exist with clinical incompetence.
14. Demonstrate exceptional metacognitive awareness.
15. Give effective reinforcing feedback as well as direct and difficult-to-receive constructive feedback.
16. Demonstrate the courage, intellectual rigor and compassion to make defensible judgments of clinical competence in borderline cases.
17. Document a concise, useful remediation process that addresses legal and regulatory requirements.
18. Develop the capacity to provide post medical training career counseling for trainees who do not successfully remediate or choose to leave medical training.

[a]Reprinted from Kalet & Chou 2014 (Table 19.1; published with permission from Springer-Verlag GmbH).

It is also imperative to enhance local expertise as the field of remediation grows. A range of resources are available to address this, including faculty development opportunities offered through professional societies (Association for American Medical Colleges, American Academy for Communication in Healthcare, Society for Clinical Decision-making, specialty-specific education societies). Faculty must gain proficiency in both their identified field of interest as well as in the optimal methods of facilitating development of knowledge, attitudes, and skills in their struggling learners.

Tip 9

Develop and utilize a team of interdisciplinary experts

Faculty members specializing in remediation learn early that struggling learners, worrisome residents, and disruptive colleagues are a very heterogeneous group. Individual remediation coaches need to master the ability to identify remediable issues and then apply a repertoire of strategies. We have variably used and/or hired a diverse panoply of interprofessional experts to assist in remediation, including learning specialists, academic tutors, psychiatrists, communication skills coaches, psychologists with expertise in developmental morality or cognitive aspects of clinical reasoning, drama therapists, standardized patients, the State Committee on Physician Health, simulation experts, role models, and yoga instructors. Often these experts bring

important perspectives that physician remediators may not fully comprehend, especially in the realm of nonverbal communication and self-awareness.

Tip 10

Establish a community of practice for remediation coaches and allied experts

This work is often rewarding but also can be taxing and challenging, and it helps greatly to have peer support and coaching through the process.

O'Sullivan and Irby propose that faculty development move away from the usual individual workshops and meetings and more toward a connected series of learning opportunities that is tightly linked to workplace and educational environments (O'Sullivan & Irby 2011). One example of broadening the scope of faculty development is to adopt more organized "communities of practice" (CoPs), groups of people that are deeply engaged in a joint enterprise (in this case, remediation) to develop a shared social structure, common values, and shared resources. Until medical education explicitly funds remediation efforts, these communities by necessity run on the passions of committed remediation faculty and must encompass both administrative structures for educational programs across the continuum of medical training and the clinical workplaces where training occurs. By situating remediation faculty development programs in both communities, coaches can more easily address organizational cultures and available content expertise and learning resources, all in the name of supporting and furthering clinical competence. For example, regular meetings of members of a remediation CoP can enable coaches to celebrate successes, ask for help with challenges, and review the latest literature in a journal club-type setting for ongoing practice-based learning and improvement for the entire CoP.

Tip 11

Accountability and outcomes

Set clear expectations for success for all parties in a defined time frame

A program's success stems from the active engagement of learners in their own development as physicians. If concerns about competence are significant, learners should be required to participate in remediation and be held accountable to engage actively with the remediation team in developing an individualized remediation plan, to initiate and complete the remediation activities, and to successfully undertake whatever assessment is deemed appropriate. Rather than viewing this as punitive, the coach–learner team should embrace this approach as a structure that facilitates the attainment of the lifelong learning strategies that ensure maintenance of competence throughout a practice career.

Accountability is most effectively operationalized by understanding the learners' motivations; reinforcing growth-based, rather than performance-based, behaviors (Dweck 2006); and collaboratively determining the next steps of achievement, rather than unilaterally directing them. For example, consider the case of a resident who has persistent

difficulty completing medical chart notes on time. The usual approach is to sit the resident down and tell them that this is unacceptable, unprofessional behavior, and to correct the problem immediately. Alternatively, a conversation with the resident could include the resident's reflections on why it is important to complete notes in a timely manner, the barriers to doing so, the resident's motivation for achieving the goal (rather than merely assessing the number of notes completed), and the resident's self-assessment on how performance can be measured.

In addition to setting expectations for learners in this process, remediation coaches and programs must also adhere to standards for success. Remediation coaches must identify goals and remain accountable to programs for reporting both successes and setbacks. Programs must provide support for remediation coaches to maximize the possibility of success, but they also must set time standards as well as commit to moving to dismissing the learner if appropriate standards are not met in a timely manner (see Tip 12).

Tip 12

Document and review remediation process and outcomes

When working with a trainee, the remediation coach must inform the learner that brief written reports of their progress during remediation will be made to the appropriate supervisor (e.g. Dean of Student Affairs, Dean of Graduate Medical Education, and Residency Program Director), and that both the remediation team and the respective Deans are committed to each learner's privacy as required by professional ethics and for students by the Family Educational Rights and Privacy Act (FERPA). However, the trainee must also know that the remediation may become part of the learner's official academic record (Buckvar-Keltz 2014).

Successful remediation should be defined as both achieving minimum competency in comparison with peers as well as demonstrating sustained improvement over time. If learners do not meet these expectations, remediation processes must end, and administrative action must follow. In our experience, prolonging remediation efforts beyond what is realistic, although often well meaning, complicates matters for everyone involved. If institutions adhere to due process and apply policies without discrimination, legal precedent consistently upholds academic and disciplinary decisions made by medical school administrators and residency training programs. This legal support does not make the process easy, as often emotions run high, commitments of time and finances are significant, and alternative possibilities for employment after dismissal from medical school are limited. Remediation programs must develop career counseling strategies and local expertise as part of the coaching process.

Conclusion

The evidence base underlying remediation in medical education is growing rapidly as better competency-based assessments allow us to identify increasing numbers of struggling learners. Cleland et al. identified 24 high quality studies of remediation interventions in medical education, half published since 2009 (Cleland et al. 2013). There are two major critiques of the overall remediation literature.

First, reported remediation interventions are often misguided, focusing on workload reductions without concomitant increases in coaching, rather than specifically diagnosing the learner's challenges and designing remediation strategies accordingly. Second, although guided by the best of intentions, this emergent literature lacks a clear theoretical base, limiting its generalizability.

Despite a paucity of systematic long-term follow-up studies, our experience in remediation is generally positive (Chang et al. 2008; Chou et al. 2008; Guerrasio & Aagaard 2014; Guerrasio et al. 2014). The vast majority of learners have succeeded and deeply appreciate the efforts provided to them in remediation, even when their initial reactions to it were negative.

Worldwide, people who want to be physicians commit significant personal resources to pursuing medical training. And yet not all of them should become physicians. Taking a systematic and programmatic approach to this challenge is critical to being able to make sound, well-informed, justifiable, and fair decisions about competence that honor our contract with society. A programmatic and rigorous approach is likely to yield rich evidence to inform the movement away from time-based and toward an individualized competency-based medical education system for all trainees.

Disclosure statement

Notes on contributors

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