Chapter 1  What is the evidence for mentorship?

Scenario

At the end of your first year as an academic clinician–investigator in a big, busy clinical department, with some 200 faculty members, you’ve just finished discussing your annual review with your department chair. She tells you that you’re doing extremely well for a new faculty member, which is a great relief to you. Although you think you’ve done pretty well – in the past year, you received a peer-reviewed development grant, first-authored two papers and co-authored four others, have a systematic review in press, have an abstract accepted for a national meeting, are enjoying your time on the clinical service, and the medical students and residents submitted glowing assessments of your bedside teaching – you feel pressed for time, worry about your work–life balance, and wonder whether you’re “on the right track” for a successful and enjoyable academic career. Although you’ve received encouragement from several senior members of the department, you’ve been conscious of how busy they are and don’t want to impose on their jam-packed schedules to ask for advice. But now, stimulated by a recent session on mentoring which you attended at an academic meeting and emboldened by your chair’s praise, you tell her that you and some of your colleagues are concerned about the lack of a formal mentorship program in the department. She says that to be able to “sell” this idea to the department, she wants to see the evidence that such a program does more than waste time, money, and energy, and she challenges you to lead a working group to track down, appraise, and summarize the evidence that a formal mentoring program benefits the career development and life-satisfaction of academic clinicians. With the promise of some staff support for your working group, you accept her challenge.

Your first step in this task is to gather the evidence; specifically, what’s the case for mentorship?

In this chapter, we’ll set the stage for our mentorship discussion providing the definitions and terminology that we’ll use throughout this book. In particular,
we’ll outline the scope for our discussion, including what mentorship is and isn’t, and help you to provide the “case for mentorship” based on the relevant evidence. We invite you to join us in this dialogue via the website (www.mentorshipacademicmedicine.com) that accompanies this book; we’d love to hear about how you define mentorship and how you would meet the challenge we posed in the above scenario!*

**What is mentorship?**

The concept of mentorship can be traced to Greek methodology. Odysseus placed his much older friend Mentor in charge of his palace and of his son Telemachus when he left for the Trojan War. Interestingly, Athena disguised herself as Mentor on several occasions to provide guidance to Telemachus. It was from this story that the term “mentor” was taken and began being used to mean a trusted, senior advisor who provides guidance to a more junior person.

Moving along to more recent times, there are many definitions of mentorship, including those from business [1] and psychology literature [2], but our focus in this book is on academic medicine, including clinicians who work in universities and academic health science centres. So, for our discussion, we’ll use the definition commonly cited in academic medical literature:

> A process whereby an experienced, highly regarded, empathetic person (the mentor) guides another (usually younger or more junior) individual (the mentee†) in the development and re-examination of their own ideas, learning, and personal and professional development. The mentor, who often (but not necessarily) works in the same organization or field as the mentee, achieves this by listening or talking in confidence to the mentee [3].

One element that we think is missing from this definition is that mentorship is about an exchange between the mentor and mentee and provides benefits to both parties; we’ll explore these benefits later in this chapter.

Berk and colleagues have further elucidated the concept of mentorship to specify that it can range from an informal, short-term relationship to a formal, long-term relationship [4]. Informal mentoring is a relationship between individuals that develops without organizational interventions and

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* There are different ways of tackling this challenge and we’ve provided our proposed solution to this scenario at the end of this chapter.
† Note that we use the term “mentee” to refer to the target of mentorship. In the literature, protégé is a term that is sometimes used interchangeably, but we find this term paternalistic and will stick to mentee in this book.
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is the natural “coming together” of a mentor and mentee. For example, a resident may identify a staff physician with whom they worked on a clinical rotation and developed a good rapport; this interaction may lead to a series of conversations that ultimately results in a mentoring relationship. Formal mentoring is initiated (in some places, mandated!) by an outside party or organization, as when a department chair not only requires that each new recruit has a mentor but makes sure that they get one.

A common source of confusion in the mentorship literature is that the term “mentor” is often used interchangeably with the term “role model” or “coach.” We maintain that these are very different concepts. “Role modeling” is a “passive, observational learning model in which an individual attempts to emulate observed, desirable behaviours and qualities” [5]. Indeed, there may be no personal relationship with the role model, and they are often oblivious of their role! Of course, a mentor can and often does serve as a role model, but that’s just one, passive facet of their function. Similarly, mentoring goes far beyond “coaching” a junior colleague on the performance of specific tasks and skills [6]. This latter function is often the complete extent of an aspiring academic clinician’s interactions with their research supervisor or department chair. We found an interesting analogy (for anyone who has seen Star Wars) that nicely highlights this difference: “Yoda is a coach, teaching Luke how to use the Force, and Obi-Wan Kenobi is a mentor, showing him what it means to be a Jedi knight” [7].

Who are the targets for mentorship?

Much of the literature on mentorship focuses on targeting junior or new faculty members [8–10]. However, faculty at any stage in their career can benefit from it.‡ A large qualitative study (moderate-quality evidence) of clinician researchers across two universities documented that senior (or established) faculty often feel that they are neglected and should have equitable access to mentors [11]. We also found a descriptive study of a mentorship program developed in a Department of Pediatrics at an academic medical centre that targeted mentorship activities not only to junior, but to mid-career and senior faculty [12]. Their survey of mid-career (associate professor level) department members found that respondents commonly wanted mentoring around the requirements and timelines for promotion, about how to redefine their careers, and how to network effectively (they were less interested in advice from mentors on how to transition to

‡ Dave Sackett linked up with his first mentor in 1958 and is currently mentee to his tenth.
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administrative positions) [12]. Senior faculty wanted mentoring around how to transition towards part-time opportunities and retirement, and on financial and succession planning. These results highlight that as a mentee’s career progresses and evolves to take on different responsibilities or change career paths, different sorts of mentoring may be required. For example, a mentee’s emerging interest in administration or education may require mentoring skills beyond those of their earlier clinician–scientist mentor.

In academic medicine, clinicians can have different career paths including those of a scientist, educator, or administrator, and having this career flexibility is one of the privileges and pleasures of academic medicine. Interestingly, surveys and qualitative literature (moderate-quality evidence) suggest that clinician investigators are both more likely to seek mentorship and more comfortable asking for it than are clinician educators [8–10]. This difference may be because clinician investigators have completed research training, are already used to having research supervisors, and are “primed” to seek the greater benefits of mentors. These studies also suggest that clinician educators are more likely to have difficulty with promotion than clinician scientists, raising the possibility of a causal relationship [8–10]. Throughout this book, we will identify differences in mentorship issues for each of these career paths whenever we find them in the literature.

What is the impact of mentorship?

Mentorship claims to develop and maintain faculty who are productive, satisfied, collegial, and socially responsible. However, not only are there no randomized trials of mentorship; we doubt we will ever see one, since it would be both methodologically and ethically challenging to randomize clinicians to either receive a mentor or be denied access to one.⁵ Accordingly, we based this section on the results from three systematic reviews of the literature [8–10], updated by more recent literature searches to the first week of March 2012. Studies of any design were eligible for inclusion, but the final selection was restricted to English-language reports targeting academic medical faculty.

Much of the evidence base is summarized in a quantitative systematic review that explored the impact of mentoring on career choices and academic advancement [8]. It included 42 articles describing 39 studies (34 of which were cross-sectional self-report surveys). A second systematic review of the

⁵ On the other hand, if we can identify enough academic centers with an interest in mentorship but no programs, a stepped wedge cluster randomized trial could provide powerful evidence on whether it works. We’d be keen to hear from any programs that might be interested in tackling this challenge!
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Qualitative literature on mentorship identified 9 relevant studies [9]. Since the publication of these reviews, we identified an additional 13 eligible studies:

- 7 surveys [13–19]
- 2 nested case control studies [20, 21]
- 1 uncontrolled before-and-after study [22]
- 1 case series [23]
- 2 qualitative studies [24, 25].

Most of the evidence base comes from cross-sectional surveys of academic clinicians who had or had not been previously mentored. The methodological shortcomings of such studies must be recognized. Specifically, if mentored academics are more successful in these observational studies, possible explanations for their success extend beyond mentoring, and include the possibility that they were destined to be stars from birth and therefore had a selection advantage in getting access to superior training programs that provided coincidental but unnecessary mentoring. And, the majority of the studies that we’ve found to date were done at a single site and didn’t follow mentees’ careers over a sufficiently long period of time.

Bearing these caveats in mind, there appear to be career- and life-benefits of mentorship to both mentors and mentees. We’ll explore the benefits to mentees first:

1. **Academic clinicians who got mentored reported greater career satisfaction** [moderate quality evidence; 14–16, 22, 26]. Mentorship not only influences career choice [10, 24], it influences job satisfaction. For example, in a survey of faculty from 24 US medical schools, faculty members with mentors had significantly higher career-satisfaction scores (62.6 vs 59.5 on a 100-point scale, \( p < 0.003 \)) than those without mentors [26]. Similarly, in a survey of gastroenterologists in the US, having a mentor was a predictor of job satisfaction (odds ratio of 2.32, \( p < 0.001 \)) [15]. And, in a survey of mentors and mentees from the Psychiatry Institute at King’s College, London, having a mentor was associated with greater job well-being [22]. In contrast, Stamm and Buddeberg-Fischer have followed a cohort of Swiss medical school graduates for more than seven years with both repeated surveys and a nested case-control study and showed that having a mentor was not predictive of job satisfaction [20]. However, mentorship did predict self-perceived career success [20].

2. **Academic clinicians who were mentored got more research grants** [moderate quality evidence; 27, 28]. Mentorship can enhance productivity. For example, a survey within a nested case-control study found that mentored primary care fellows were two to three times as likely to be a principal investigator on a research grant [28].
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3 Academic clinicians who were mentored reported more protected time for scholarly activities and produced more publications [moderate quality evidence; 17, 26, 29–31]. A survey of more than 3000 faculty members in the US found that those with a mentor had more time allocated to research (28% vs 15%, \( p < 0.001 \)) than those who didn’t have a mentor [26]. In another study, survey respondents who had a mentor were more likely to allocate more time to research and were more productive in research in terms of their numbers of grants and publications [28].

4 Academic clinicians who were mentored were promoted more quickly [moderate quality evidence; 8, 18, 32]. Not surprisingly, given that mentorship is associated with greater productivity of academic outputs, mentorship seems to facilitate academic promotion. For example, a study of Canadian obstetrics and gynecology fellows found that those who reported that they had a mentor were more likely to achieve a promotion (hazard ratio 2.3; 95% confidence interval 1.36–3.99) [32]. Surveys in the US, Canada, and Germany found that the absence of effective mentoring was a major obstacle to a successful academic career [8]. In a small survey of 12 faculty, Daley and colleagues found that having a senior mentor was a factor in determining promotion [18].

5 Academics who were mentored were more likely to stay at their academic institutions [moderate quality evidence; 33]. Mentorship may play a key role in recruiting and retaining staff in academic medicine. For example, in a two-tiered program consisting of one year of preceptoring new faculty (to orient them) plus mentoring junior faculty who had been there for at least a year, 38% of junior faculty who did not form mentor partnerships left the organization, compared with 15% of those who did [33].

6 Academic clinicians who were mentored reported greater academic “self-efficacy” [moderate quality evidence; 13, 22]. Academic self-efficacy is defined as the belief in one’s ability to succeed in academic medicine. A survey of faculty members at the University of California, San Francisco reported that those who had a mentor reported significantly greater academic self-efficacy than those without mentors [13]. Similarly, Dutta and colleagues found that having a mentor was associated with both self-efficacy and self-esteem [22].

There is less literature available on the impact of mentorship on mentors, and we identified just two recent studies that explored this issue [22, 34]. In a survey of mentors for medical students, mentorship was reported to reinvigorate interest and lead to personal and professional growth [34]. In their before-and-after study, Dutta and colleagues documented mentors’ enjoyment in being able to help solve mentees’ problems, “to give back,”
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provide support, see their mentees develop, and in using the mentorship to reflect on their own careers and skills [22].

Gaps in the evidence

As we emphasized at the outset, there are no randomized trials of mentoring. While completing a multi-centered randomized trial of mentorship would be challenging, we repeat our invitation to colleagues who might wish to collaborate in designing and executing the stepped wedge cluster randomized trial described earlier in this chapter. Short of this, longer-term cohort studies of aspiring academics, with and without mentors, which examine the impact of mentorship on the retention, productivity, ability to mentor others, quality of life, and satisfaction of mentees would shed important additional light on its risks and benefits.

Bottom line and scenario resolution

We conclude that effective mentorship is vital to career success. It produces benefits for both mentors and mentees. Conversely, we conclude that absent or failed mentorship leads to lower productivity and hampers the ability to achieve career benchmarks and personal growth. In the next few chapters of this book, we will present some ways to think about mentors, mentees, mentoring strategies and tactics, and how to develop and monitor a mentorship program.

Returning to the scenario that opened this chapter:

1 You develop a working group of 8 to 10 colleagues from your department including those from different career paths (clinician educators, investigators, administrators) and rank (assistant, associate, and full professor). You use purposive sampling to ensure that you include colleagues who are perceived as being opinion leaders in your faculty and who could be champions for this initiative, and include skeptics as well as proponents of mentorship.

2 After circulating, discussing, and debating the evidence, your working group concludes that mentoring does far more good than harm to both mentees and mentors, and ought to be systematically implemented in your department. You create a one-page summary with key messages that outline your conclusions. If accepted by your chair, these messages will form the rationale for your mentorship strategy and will be used to engage others in the mentorship program.

3 You present your report to your chair, who – after vigorous debate – is won over by both the quality of your review and the strength of your conclusions.

4 She agrees to support you in carrying out a “needs assessment” with your faculty members to begin to better understand the need for mentorship amongst your colleagues. As a result, your working group conducts a survey
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to determine how many faculty members currently have a mentor, want a mentor, are a mentor, or are interested in becoming a mentor.
5 Your survey documents widespread dissatisfaction with the current, informal “hit-and-miss” mentoring that exists in the department, and widespread advocacy of an organized mentoring program with the initial goal of providing mentors to every senior trainee and all new faculty.
6 Your chair agrees to fund a start-up mentoring program (including support staff).
7 Finally, your chair sends formal letters of commendation to you and your committee members for you to add to your promotion and tenure dossier.

References
