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Clinician-trialist rounds:

7. Mentoring: why every clinician-trialist needs to get mentored

Sharon E Straus* and David L Sackett

Getting mentored consumes lots of your time, energy, and thought. Accordingly, every clinician-trialist needs to start by deciding whether it's worth diverting these limited resources from their research, writing, clinical practice, teaching, and other academic and personal pursuits in order to get mentored. This first of a quartet of *Rounds* will summarize the evidence on whether and how getting mentored affects academic success, career satisfaction, and happiness. Then, if you find this evidence convincing, the second and third *Rounds* will take you through the structure and function of effective mentoring, and the fourth will help you decide whether you would make a good mentor.

This quartet of *Rounds* is co-authored by Sharon Straus and Dave Sackett, who began as mentee and mentor, respectively, when Sharon joined Dave's EBM Center at the John Radcliffe Hospital in Oxford in 1996. Now back in Canada, they are collaborating in generating, appraising, and summarizing evidence about mentoring.

Let's begin with the definition of mentoring that we'll use in this series: *'The process whereby an experienced, highly-regarded, empathetic person (the mentor) guides another [usually younger] individual (the mentee) in the development and re-examination of their own ideas, learning and personal and professional development'* [1].

Mentoring is not the same as 'role modeling', which is a 'passive, observational learning model in which an individual attempts to emulate desirable behaviours and qualities' [2]. And, mentoring goes far beyond 'coaching' a junior colleague on the performance of specific tasks or the achievement of

certain goals, tasks, or skills [3], a function that is sometimes the entirety of an aspiring academic clinician's interactions with their research supervisor, division chief, or department chair.

What's the evidence that every clinician-trialist needs to get mentored, and how good is that evidence? Sharon and her collaborators have carried out three systematic reviews, continue to survey the literature, and have yet to find an RCT of active vs. sham mentoring,[†] although there have been some RCTs of mechanisms for running mentoring programs. Thus, most of the evidence base comes from cross-sectional surveys of academics who had and had not been previously mentored. If the mentored ones have been more successful in these observational studies, alternative explanations would include the possibility that they were destined to be stars from infancy and therefore had a selection-advantage into great training programs, which provided coincidental but unnecessary mentoring. Moreover, most studies were done at a single site and don't follow career progress over a sufficiently long period of time.

With that caveat, what do the studies find when they compare academic clinicians who did and didn't get mentored? Their bottom-lines appear in Table 1 and can be summarized as follows [4]:

1. *Academic clinicians who got mentored also got more research grants.*
 - Mentored primary care fellows were two to three times as likely to be a Principal Investigator on a peer-reviewed research grant [5].

[†] The reports of disgruntled mentees in some of the qualitative studies suggest that they might have been in the blinded control groups of surreptitious trials.

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Table 1. Six reasons why clinician-trialists need to get mentored

1. Academic clinicians who get mentored get more peer-reviewed research grants
2. Academic clinicians who get mentored publish more papers in refereed journals
3. Academic clinicians who get mentored get faster academic promotion
4. Academic clinicians who get mentored are more likely to stay at their academic institutions
5. Academic clinicians who get mentored report greater belief in their own ability to accomplish specific academic goals and tasks
6. Academic clinicians who get mentored report greater career satisfaction

- The NIH funding of academic surgeons was related to their productivity with their mentors [6].
- 2. *Academic clinicians who got mentored published more papers in refereed journals.*
 - Primary care fellows who had a mentor were more likely to allocate more time to research, got more grants, and authored more publications [7].
 - In a survey of >3000 US faculty members, those with mentors were able to allocate 28% of their time to research; those without mentors allocated only half as much [8].
- 3. *Academic clinicians who got mentored also got faster academic promotion.*
 - Canadian obstetrics/gynecology fellows with mentors were over twice as likely to achieve promotions as their colleagues who didn't have mentors [9].
 - US, Canadian, and German academic clinicians (especially women) reported that the absence of effective mentoring was a major obstacle to a successful academic career [4].
- 4. *Academic clinicians who got mentored also were more likely to get to stay at their academic institutions.*
 - In a two-tiered program for new faculty comprising 1 year of preceptorship followed by mentoring, only 15% who partnered with mentors left the organization compared with 38% of those who failed to partner [10].
- 5. *Academic clinicians who got mentored reported greater academic 'self-efficacy'.*
 - Faculty members at the University of California at San Francisco who had mentors reported significantly greater belief in their own ability to accomplish specific academic goals and tasks (self-efficacy) than those who didn't have mentors.
- 6. *Academic clinicians who got mentored also reported greater career satisfaction.*
 - In a survey of 24 US medical schools, faculty members with mentors had significantly higher career satisfaction than those without mentors [8].

In summary, getting mentored has been reported to be an important influence on research productivity (including both grant success and publication),

personal development, career choice, and career satisfaction. Unfortunately, effective mentoring programs are rare; in some fields (such as adolescent medicine [11]), fewer than 20% of faculty were getting mentored a decade ago, and women have more difficulty than men in finding a mentor [9].

For those of you who are on the other side of these partnerships, the evidence indicates that mentors benefit as well. For example, a recent study documented that mentors of undergraduate medical students reckoned it invigorated their interests and their personal and professional growth [12]. We'll consider this issue in the fourth and final *Round* in this series as we explore whether you would make a good mentor.

As we pointed out earlier, given the observational nature of this evidence on why every clinician-scientist needs to get mentored, getting it might merely be a marker for academic stardom, not its cause. But unless you're satisfied that you are already a star, you might want to be on the look-out for the next *Clinician-Trialist Round*, where we'll describe the structure and function of effective mentoring.

One reason to attend next time is that the foregoing evidence on the effects of good mentoring is complemented by a literature that documents the awful consequences of bad mentoring. At their worst, bad mentors exploit mentees, steal their ideas, exclude them from grant applications, and hog first authorships on publications of their work. In short, bad mentoring can disillusion young academics and destroy their careers. So stay tuned.

As usual, that's not the end of this round, for our discussion period has just begun. Rounders who have other or contrary thoughts about whether clinician-trialists need to get mentored, or have questions or comments about the ones presented here are encouraged to send them to the Editors, with a copy to me at sackett@bmts.com. I'll summarize them in a later round.

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