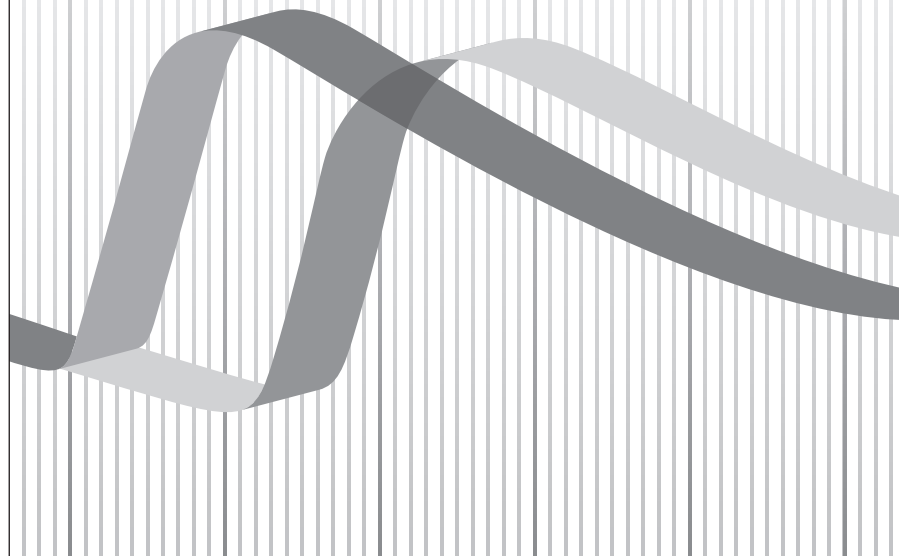


P A R T T W O

# Becoming a Clinical Researcher



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*Clinical Epidemiology: How to Do Clinical Practice Research.*



# 12

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## BECOMING A SUCCESSFUL CLINICIAN-INVESTIGATOR

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Dave Sackett

I wrote this section with both the mentors and the mentored in mind. However, my primary target is the reader who is being mentored, whom I will call “you.” I hope it will also help mentors (whom I will call “they”) identify their duties and evaluate their effectiveness.

I think that the determinants of your “academic success” as a clinician–investigator (defined in terms of principal investigatorship, lead authorship, promotion, tenure, career awards, honors, power, and reputation) are not “academic” (defined in terms of intelligence, theoretic understanding, mastery of a body of knowledge, and teaching skills) (1,2). Some clinician–investigators fail because they are crazy. Others fail because they lack minds that are “prepared” to generate important questions based on their clinical observations. However, the range of their intelligence is so compressed at the top of the scale that, even if it were an important determinant, attempts to correlate it with success are doomed. Furthermore, academic failure is common to both those who do and those who don’t understand the theory and know the facts, and among those who are and aren’t excellent teachers. The ability to generate novel, imaginative hypotheses does play a role in the academic success of basic researchers. However, this rarely applies in patient-based and clinical-practice (3) research (where the hypotheses are usually common knowledge and often originate with patients). Finally, I’m confident that none of you will seriously argue that being a nice person is a prerequisite for academic success.

What, then, are the determinants of your academic success as a clinician–investigator? I’ve concluded that they are three: mentoring, creating periodic priority lists, and time management. However, the evidence supporting my conclusions is of shaky validity. Most of it is based on a Level 4 case-series (4) of young academics I’ve mentored and to whom I’ve taught priority lists and time management. I’ve also repeated Level 2b cohort observations of individuals who did and didn’t receive mentoring or employ time management. In addition, I’ve made several Level 3b case–control observations of academics who clearly were and were not successful.

A literature search provided some confirmation for my conclusions, but no higher levels of evidence. Applying the Medical Subject Headings

(MeSH) terms MENTORS (510 hits) and TIME MANAGEMENT (901 hits) didn't turn up any Level 1 evidence, but the Level 2 to 4 evidence I encountered there (5–13) supports my thesis. I also found important evidence on the experiences and perceptions of women in medicine (14,15). A final note of caution: most of the clinician scientists I've mentored and observed in the United States, Canada, and the United Kingdom have been hospital-based internists. If you and your mentor are from another health discipline, you will have to decide whether and where the conclusions and recommendations I make in this section apply to you.

## 12.1 MENTORING

Mentoring is vital to your success as an academic clinician. For example, graduates of US-style primary care internal medicine research fellowship programs were five times more likely to publish at least one paper and were three times more likely to be principal investigators (PIs) on a funded research grant if they had an “influential mentor” during their fellowship (16). Effective mentoring is of two sorts, depending on whether you are a newcomer or an established academic. For newcomers (such as graduate students or new faculty), mentoring provides four advantages. First, it provides *resources* without obligations. Second, it provides *opportunities* without demands. Third, it provides *protection*. Fourth, it provides *advice* without coercion. I hope it's already obvious (and I'll reinforce this point later) that it requires an already successful and secure academic to provide this sort of mentoring.

By *resources*, I mean that a really good mentor would provide you with:

- space to work
- productivity-enhancing equipment
- free photocopy, e-mail, and Internet
- occasional secretarial support
- money to attend courses and meetings
- salary supplements if your fellowship doesn't provide for necessities and simple graces and
- bridge funding your research until you get your first grant.

In some departments, all or most of these resources are provided by the chair, and in others, none. In either setting, your mentor should “wheel and deal” until the resources are in place. You should be spared both the time and the humiliation of begging for these resources on your own.

By *opportunities* at the beginner's level, I mean the systematic examination of everything that crosses your mentor's desk for its potential contribution to your scientific development and academic advancement:

1. The opportunity to join one of your mentor's ongoing research projects. This can provide more than just “hands-on” practical experience in the application of your graduate course content. You can also learn how to create and function as a member of a collaborative team and to develop skills in research management.

Taking on a piece of your mentor's project to run, analyze, present, and publish is a two-edged sword. On the one hand, it provides an excellent opportunity to go beyond the classroom and develop your practical skills in data management and analysis. Moreover, it gives you the opportunity to start to learn how to combine "science and showbiz" in presenting your results and writing for publication, and your CV will benefit.

On the other hand, being given a project by your mentor can be harmful. The greatest risk here is that your mentor might "give" you a predesigned substudy or research project and encourage you to use it as your major (e.g., thesis) learning focus. Although often done with the best intention, accepting this "gift" is bad for you because taking on a predesigned project robs you of the opportunity to develop your most important research skills. First, you'll lose the opportunity to learn how to recognize and define a problem in human biology or clinical care. Second, you'll lose the opportunity to learn how to convert that problem recognition into a question that is both important and answerable. Third, you'll lose the opportunity to learn how to select the most appropriate study architecture to answer your question. Fourth, you'll lose the opportunity to identify and overcome the dozens of "threats to validity" that occur in any study. These four skills are central to your development as an independent investigator. Without these skills, you'll master only the methods that are required for your "given" project. Like the kid who received a shiny new birthday hammer, you'll risk spending the rest of your career looking at ever less important nails to pound with your same old limited set of skills.

2. The opportunity to carry out duplicate, blind (and, of course, confidential) refereeing of manuscripts and grants. The comparison of these critiques not only sharpens your critical appraisal skills but also permits you to see your mentor's refereeing style and forces you to develop your own.
3. The opportunity to accompany your mentor to meetings of ethics and grant-review committees to learn firsthand how these groups function.
4. The opportunity, as soon as your competency permits, to join your mentor in responding to invitations from prominent, refereed journals to write editorials, commentaries, or essays. Not only will the joint review and synthesis of the relevant evidence be highly educational but it will also provide you the opportunity to learn how to write with clarity and style (see Chapter 16, on preparing reports for publication.). Finally, it will add an important publication to your CV. As soon as your contribution warrants, you should become the lead author of such pieces. The ultimate objective is for you to become the sole author (all the sooner if your mentor casts a wide shadow).

One note of caution about invited chapters for books: unless the book is a very prestigious one, its authorship adds little or no weight to your CV.

5. The opportunity to take over some of your mentor's invitations and to learn how to give "boilerplate" lectures (especially at nice venues and for generous honoraria).
6. Your inclusion in the social as well as academic events that comprise the visit of colleagues from other institutions.
7. The opportunity to go as part of a group to scientific meetings, especially annual gatherings of the research clan. This has several advantages. First, it gives you the chance to meet and hear the old farts in your field. Second, it allows you to meet and debate with the other newcomers who will become your future colleagues. Third, you can compare your impressions and new ideas with your mentor while they are fresh, in a relaxed and congenial atmosphere.

Another note of caution: spending time going to meetings carries risks as well as benefits, as I'll describe under time-management at the end of this section.

8. The opportunity to observe, model, and discuss teaching strategies and tactics in both clinical and classroom situations. When you are invited to join your mentor's clinical team, you can study how they employ different teaching strategies and tactics as they move from the post-take/morning report, to the daily review round, to the clinical skills session, to grand rounds. With time, you should take over these sessions and receive feedback about your performance. The same sequence should be followed in teaching courses and leading seminars in research methods.

As you become an independent investigator, your opportunities mature and incorporate two additional areas. First, your mentor should start nominating you to more advanced opportunities for increasing your academic experience, networking, and recognition. Examples here include scientific committees (e.g., grant-review committees), task forces (e.g., for the development of methodological standards or evidence-based guidelines), and symposia (especially those that can result in first-authored publications). Second, your mentor should start nominating you for academic posts, writing letters of support, and counseling you as you negotiate space, support staff, rank, and salary. Finally, your mentor should continue to be available for discussions of your triumphs and troubles and for letters of support as you proceed through the various stages of academic development, promotion, and tenure.

It is important that these opportunities are offered without coercion and are accepted without resentment. Crucially, they must never involve the off-loading of odious tasks with little or no academic content from overburdened mentors to the beholden mentored.

By *advice*, I mean providing frequent, unhurried, and safe opportunities for you to think your way through both your academic and social development. Topics here include your choices of graduate courses, the methodological challenges in your research projects, the pros and cons of working with a particular set of collaborators, and how to balance your

career with the rest of your life. For example, some mentors refuse to discuss academic issues at such sessions until they have gone through a checklist of items encompassing personal and family health, relationships, finances, and the like. Their advice should take the form of “active listening,” should focus on your development as an independent thinker, and should eschew commands and authoritarian pronouncements.

As long as gender-based inequalities exist in running households and raising children, mentors must be knowledgeable and effective in addressing and advising about the special problems that women face in academic careers (17). Although in one study only 20% of female academics stated that it was important to have a mentor of the same gender (14), it is imperative that all women pursuing academic careers have easy access to discussing and receiving informed, empathic advice about issues such as timing their pregnancies, parental leave, time-out, part-time appointments, sharing and delegating household tasks, and the like. When the principal mentor is a man, these needs are often best met by specific additional mentoring around these issues from a woman.

I’ll discuss your mentor’s role in helping you evaluate your “priority list” and time management strategies later in this chapter.

When listening to you sort through a job offer, it is important for your mentor to help you recognize the crucial difference between “wanting to be wanted for” and “wanting to do” a prestigious academic post. You’d be crazy not to feel elated at “being wanted for” any prestigious job, regardless of whether it matched your career objectives and academic strengths. However, an “actively listening” mentor can help you decide whether you really “want to do” the work involved in that post. It is here that they may help you realize that a post is ill matched to your interests, priorities, career stage, competencies, or temperament.

By *protection*, I mean insulating you from needless academic buffeting and from the bad behavior of other academics. Because science advances through the vigorous debate of ideas, designs, data, and conclusions, you should get used to having yours subjected to keen and critical scrutiny. For the same reason, you needn’t be tossed in at the deep end. Thus, for example, you should rehearse formal presentations of your research in front of your mentor (and whoever else is around). They can challenge your every statement and slide in a relaxed and supportive setting. As a result (especially in these days of PowerPoint), you can revise your presentation and rehearse your responses to the likely questions that will be asked about it. The objective here is to face the toughest, most critical questions about your work for the first time at a rehearsal among friends, not following its formal presentation among rivals and strangers.

Similarly, your mentor can help you recognize the real objectives of the critical letters to the editor that follow your first publication of your work. Most of them are attempts to show off (the “peacock phenomenon”), to protect turf, and to win at rhetoric, rather than to promote understanding. When serious scientists have questions about a paper, they write to its authors, not to the editor. Your mentors also can help you

learn how to write responses that repeat your main message, answer substantive questions (if any), and ignore the tawdry slurs that your detractors attempt to pass off as harmless wit.

Finally, disputes between senior investigators often are fought over the corpses of their graduate students. This means you. Your mentor must intervene swiftly and decisively whenever they detect such attacks on you, especially those related to your sex, race, gender, or sexual orientation. The intention of your tutor's rapid retaliation needn't be to overcome your attacker's underlying prejudice or jealousy. It should merely make the repercussions of picking on you so unpleasant for him that he never tries it again. If it wasn't already part of your core training, a study of the classic paper on "how to swim with sharks" should be part of this exercise (18).

I don't believe that academics ever outgrow their need for mentoring. As you become an established investigator, you'll require gentle confrontation about whether you are becoming a recognized "expert" and taking on the bad habits that inevitably accompany that state (19). Moreover, given the huge number of highly prestigious but simply awful chairs and deanships that are pressed upon even unsuccessful academics, these offers need the dispassionate (even cynical) eye of a mentor who can help you distinguish the golden opportunities from the black holes. Finally, mentors can help senior academics find the courage to seize opportunities for radical but fulfilling and even useful changes in the directions of their careers. For example, I am ever indebted to my then mentor Bill Spaulding, who helped me confirm the sense, and then find the courage, to repeat my internal medicine residency shortly before my fiftieth birthday.

What should you look for when picking a mentor (or in sizing up the one to whom you've been assigned)? I think your mentor should possess six crucial prerequisites:

1. Your mentor has to be a competent scientist. Although most mentors will be clinicians as well, this needn't be the case. Some of the most successful academic clinicians I know (including me) were mentored by biostatisticians.
2. Your mentor must not only have achieved academic success themselves, but must also treat you accordingly. That is, your mentor must feel secure enough about their own academic success that they are not only comfortable taking a back seat to you in matters of authorship and recognition. They must actively pursue this secondary role. Everything fails if your mentor competes with you for recognition. Unfortunately, such competition is common, and you should seek help from your chair or program director if this happens to you (I devote lots of time to trying to resolve such conflicts before they destroy friendships and damage careers).
3. Your mentor should not directly control your academic appointment or base salary. Such controls interfere with the free and open exchange of ideas, priorities, aspirations, and criticisms. For example,



you may find it difficult to turn down an irrelevant, time-consuming task offered by your mentor if they also control your salary.

4. Your mentor must like mentoring and must be willing to devote the time and energy required to do it well. This includes a willingness to explore and solve both the routine and the extraordinary scientific and personal challenges that arise when they take on this responsibility.
5. Some institutions still lack policies for stopping the tenure clock for childbirth and caring for a young child, or for “re-entry” rights and discounted “resume gaps.” Your mentor should be informed about these, and she should fight for these rights when they are lacking.
6. Finally, your mentor must periodically seek feedback from you about how well they are performing. They must periodically evaluate their own performance, decide whether they remain the best person to mentor you, and identify ways to improve their mentoring skills.

Do the benefits of mentoring flow just one way, or do mentors benefit as well? A qualitative study of Faculty Advisors in Maryland identified several benefits of being a mentor (20):

- An enhanced academic reputation from spotting and developing highly talented young people.
- The development of a dependable junior colleague.
- The satisfaction of repaying a past debt owed to their own mentors.
- The thrill and pride of seeing a protégé succeed.
- The enjoyment and excitement of taking partial credit for the protégé’s success.

## 12.2 MAKING AND UPDATING YOUR “PRIORITY LIST”

You should start making and updating your “priority list” as soon as you gain the smallest degree of control over your day-to-day activities and destiny. This control might start the day you take up your first faculty appointment, or maybe after your successful thesis defence. Updating, discussing, and acting on this list will be central to your academic success throughout the rest of your career. You should review and update this list at least every 6 months, and more often if needed. Discussion of this list is a key element of the mentoring process. For established academics, your mentor need no longer be a senior colleague; indeed, the most effective mentoring I’m receiving in the twilight of my career comes from younger colleagues.

Making, updating, and following your priority list is trivially simple in format, dreadfully difficult in execution, and vital to both your academic success and happiness. The list has four elements:

List 1: Things you’re doing now that you want to *quit*.

List 1a: Things you’ve just been asked to do that you want to *refuse* to do.

List 2: Things you’re not doing that you want to *start* doing.

List 3: Things you're doing that you want to *keep doing*.

List 4: Strategies for *improving the balance* within your lists by shortening List 1 (*want to quit*) and by lengthening List 2 (*want to start*) over the next 6 months.

Note that the entries on this list are about *doing* (things like research, clinical practice, teaching, and writing). They are not about *having* (things like space, titles, rank, or income). Note, too, that there are no “cop-out” entries for “things you *have* to do.” These “have-to-do” entries must be thought through until they can be allocated to either List 1 (*want to quit or refuse*) or List 3 (*want to keep doing*).

You can generate Lists 1 (*want to quit or refuse*) and 3 (*want to keep doing*) by reviewing your diary for the period since your last update. List 1a (*want to refuse*) comes from your mail and from recalled conversations with bosses or colleagues who were attempting to transform their problems into your problems.

List 2 (*want to start*) is more exciting. It comes from multiple sources:

- the next research question that logically follows the answer to your last one
- ideas that arise from successes and failures with your patients
- brainstorming that occurs while reading, or during conversations with colleagues
- ideas that are formed during trips to meetings or other research centers
- inspirations that arise in reading other people's research in depth and with a critical eye
- long-held aspirations that are now within reach
- job offers
- changes in life goals or personal relationships
- and so on.

Contemplating the length and content of List 3 (*want to keep doing*) enables self-diagnosis and insight. If it's long, is it comfortable but complacent, stifling further growth? Worse yet, is it the list of an expert, comprising the tasks required to protect and extend your personal “turf” in ways that are leading you to commit the “sins of expertness?” (19)

The next, crucial step is to titrate Lists 2 (*want to start*) and 3 (*want to keep doing*) against List 1 (*want to quit or refuse*). Academic and personal disaster results from a dislocation between what you are doing and what is expected of you. This dislocation is inevitable when you fail to stop doing enough old things on List 1 (*want to quit or refuse*) to make it possible to pursue List 2 (*want to start*) while keeping up with List 3 (*want to continue*).

Dislocation and its sequelae are not new, and their causes have been acknowledged for decades. The special vulnerability of clinicians was reported over 20 years ago when they were already experiencing the constant

pressure of trying to provide more and better patient care with resources that had already begun to diminish (21).

For “time-imbalanced” clinician–scientists, there are two outcomes. First, you can work day and night, keep up, and trade your family, friends, and emotional well-being for a reputation as a “world-class” academician. Second, regardless of whether you work day and night, you can fall behind and gain a reputation as a “nonfinisher.” Either way, you increase your risk of slipping into emotional exhaustion, cynicism, feeling clinically ineffective, and developing a sense of depersonalization in dealing with patients, colleagues, and family (22). The term “burnout” has been applied to the resulting deterioration of values, dignity, spirit, and will. This process can start early in your career (even during your training), can take years to become full-blown, but by then has a poor prognosis in terms of ever gaining career satisfaction or personal well-being.

Making and updating lists has two goals, then. One is the prevention of burnout. The other is the realization of a set of research, teaching, and clinical activities that would make it fun to go to work.

All the foregoing leads to List 4, a tactical plan for *improving the balance* within your lists by terminating entries in Lists 1 (*want to quit or refuse*) and having more time for Lists 2 (*want to start*) and 3 (*want to continue*). You will add greatly to your academic reputation when your List 4 (*improving the balance*) advocates gradual and orderly change through evolution, such as giving 6-months notice on List 1 (*want to quit*) entries and helping find and train your successor. Along the way, you can gain administrative skills by sorting out which of the tasks on List 1 (*want to quit or refuse*) can be delegated to your assistants, with what degrees of supervision and independence. By the same token, it will greatly damage your academic reputation if your List 4 (*improving the balance*) calls for revolution, resignation, or running away.

My colleagues in psychiatry taught me that troubled families achieve about 80% of the benefits of family therapy before they ever sit down with a therapist. The explanation is that they have already acknowledged their problem and have resolved to seek help in solving it. I likewise suggest that most of your benefits from the periodic priority list will occur before it is presented and discussed with your mentor. Nonetheless, additional insights can come with presenting your lists to someone else. Moreover, additional List 4 strategies for *improving the balance*, such as learning how to say “no” constructively, can arise in these discussions.

Aspiring clinician–investigators, especially women, often face their greatest academic demands during the period of greatest physical and emotional dependency of their children and partners. The ability to discuss gender-specific conflicts in balancing priorities with an informed, empathic mentor is essential.

The strategies in List 4 for *improving the balance* that emerge from these discussions often focus on the effective and efficient use of time, which leads us to the third determinant of academic success: time management.

### 12.3 TIME MANAGEMENT

The most important element of time management for academic success is setting aside and ruthlessly protecting time that is spent *writing for publication*. I've encountered several successful academics whose only control over their schedule has been protected writing time. Conversely, I've met very few academics who have succeeded without protecting their writing time, regardless of how well they controlled the other elements of their schedules. For some academics, this protected writing time occurs outside "normal" working hours, but the price of such nocturnal and week-end toil is often paid by family and friends, and is a setup for burnout. The prototypically successful academic sets aside 1 day per week (except during periods of intensive clinical responsibilities; *vide infra*) for this activity and clearly means it by telling everyone that they aren't available for chats, phone calls, committees, classes, or departmental meetings that day.

I've never admired the publications of any academics who told me that writing was easy for them; those whose work I admire tell me that they find it very difficult to write (although many find it nonetheless enormously enjoyable and gratifying). Given the difficulty of writing well, no wonder so many academics find other things to do when they should be writing for publication. The great enemy here is procrastination, and rigorous self-imposed rules are needed for this protected writing time:

- it is *not* for writing grants
- *not* for refereeing manuscripts from other academics (aren't they already ahead of you with their writing?)
- *not* for answering electronic or snail mail
- *not* for keeping up with the literature
- *not* for responding to nonemergencies that can wait until day's end
- *not* for making lists of what should be written about in the future
- *not* for merely outlining a paper and
- *not* for coffee breaks with colleagues.

Early on, self-imposed daily quotas of intelligible prose may be necessary, and these should be set at realistic and achievable levels (as small as 300 coherent words for beginners).

It is imperative that no interruptions occur on writing days. Unless you are protected by a ruthless secretary and respected by garrulous colleagues, this often can best be achieved by creating a "writing room" away from the office; whether this is elsewhere in the building or at home depends on distractions (and family obligations) at these other sites (for a time, I simply traded offices with a colleague who wrote the same day as I). Writing in a separate, designated room permits you to create stacks of drafts, references, and the other organized litter that accompanies writing for publication. It also avoids your unanswered mail, unrefereed manuscripts, undictated patient charts, and the other distracting, disorganized litter of a principal office. Moreover, if e-mail is disabled in the computer in your writing office, a major cause for procrastination is avoided.

Mondays hold three distinct advantages as writing days. First, the things that “can’t wait” are much more likely to arise on Fridays, and very few things that arise over the weekend cannot wait until Monday night or Tuesday. Second, a draft that gets off to a good start on Monday often can be completed during brief bits of free time over the next 4 days and sent out for comments by the week’s end. Third, the comforting knowledge on a Sunday night that Monday will be protected for writing can go far in improving and maintaining your mental health, family function, and satisfaction as an aspiring academic. And, of course, the more of your colleagues who write on the same day each week, the greater the opportunity for trading offices and the fewer the conflicts in scheduling meetings on other days in the week.

The second important element of time management requires you to schedule clinical activities with great care. On the one hand, you want to maximize the delivery of high-quality care and high-quality clinical teaching. On the other hand, you want to avoid, or at least minimize, conflicts with the other elements of your academic career. Of course, your clinical work should complement your research. Indeed, your clinical observations, frustrations, and failures should be a major source of the questions you pose in your research. But both teaching and research require your full attention. Having to switch back and forth between them several times a week is a recipe for frustration and failure.

I reckon this conflict is best resolved in inpatient disciplines by devoting specific blocks (of, say, 1 month) of “on-service” time to nothing but clinical service and teaching. When on service, your total attention is paid to the needs of patients and clinical learners. No time is spent writing, traveling, attending meetings, or teaching nonclinical topics. This total devotion to clinical activities often will permit you to take on more night call and a greater number of patients and clinical learners (on my medical inpatient service at Oxford, I was on call every third day, with my clinical team of up to 16 learners and visitors, and I admitted 230 patients per month; and in addition to our individual daily bedside rounds my Fellows and I provided 13 hours of extra clinical teaching each week).

When “off-service,” your time and attention should shift as completely as possible to research and nonclinical teaching. Ideally, you should have no night call when you are off service. Moreover, you should not routinely see every admitted patient at a post-hospital outpatient follow-up visit (again on my service, postadmission and predischarge telephone conversations with the patients’ GPs reduced outpatient follow-up to <5% of my admissions).

If you are worried about getting rusty or out of date between your months on service, precede them by shadowing a colleague for a week just before reassuming command (I alternated between the coronary care and intensive care units for my “warm-up” weeks). Like so many other elements of your academic success, this sort of time management is fostered by the development of a team of like-minded individuals who spell one another in providing excellent clinical care. A survey of physicians in their second decade of clinical practice suggested that there needs to be at least three like-minded clinicians to make this strategy work (23).

Clinicians in other fields (e.g., intensive care and many of the surgical specialties) sometimes find it preferable to allocate time to clinical practice in units of 1 week. Another variant of scheduling is practiced by two of my former residents whose current incomes are derived solely from private practice. They devote 3 weeks of each month to intensive clinical practice in order to free up the fourth for their highly successful applied research programs.

This still leaves you with the outpatient dilemma. Academic clinicians usually accept ambulatory referrals to their general or subspecialty clinics one or two half-days every week. In addition to the time you spend during the clinic session itself, you have to spend several hours during the following 2 to 3 days chasing down lab results, talking with referring clinicians, and dictating notes. This additional time conflicts with your research, teaching, and travel to meetings and other centers, diminishing your research and writing productivity, peace of mind, and fun.

Moreover, I think that this pattern of weekly clinics lowers the quality of patient care. What happens when you are 1,000 km away when one of your outpatients gets sick during the diagnostic tests you've ordered or has an adverse reaction after starting a new treatment regimen?

A solution you should at least consider is to stop holding your outpatient sessions every week and concentrate them into back-to-back-to-back clinics just once a month. By staying in town for the few days following this outpatient "blitz," you can tie up the loose ends of four clinic sessions all at once (especially if you can delegate chasing down lab results), and the rest of your month is free for academic activities.

One of the sadder realities of pursuing an academic career is to be forced to consider your teaching commitments under the heading of time management. Of course, the opportunities and requests for teaching are endless, and the worthiness and fun of teaching are huge. That's why some universities have started to recruit and support clinician-scientists who focus on education research. However, unless you're an education-researcher, most universities offer tiny (or even negative) rewards for your teaching efforts and accomplishments. Your promotion and tenure remain dominated by first-authored publications in high-impact journals. Put quite simply, the time you spend teaching is time taken away from performing and (especially) from publishing your research. No wonder, then, that so many clinical research institutes boast that their recruits need not do any teaching. And no wonder that those who oversee your career investigator award will caution you against spending "too much time" teaching.

The following advice is for academic clinicians at the start of their careers:

1. Examine your university's teaching requirements (if any) for promotion and tenure and be sure you meet them. But focus your teaching so that it helps, not hinders, your career development, and be sure to keep a record of your teaching.
2. During your months on the inpatient clinical service (when you're not writing anyway), spend huge amounts of time teaching clinical

skills/therapeutics/clinical physiology/evidence-based medicine (EBM) at the bedside, and earn a reputation as an outstanding clinical teacher. But don't go on service when there are no students and housestaff to teach, and don't do clinical teaching when you're off service.

3. If your university runs a graduate program in your field, become a junior co-tutor with the best teacher you can find. You will not only earn teaching credits while consolidating your own methodological learning but you will also pick up useful teaching strategies and tactics from a seasoned senior colleague. However, you should avoid the energy-sink of taking responsibility for organizing or running an entire course.
4. Consider joining the best graduate teacher in your field as a junior co-supervisor of a graduate student. Again, you will earn teaching credits while you improve your methodological skills and learn how to supervise the next generation of graduate students. In doing so, you'll need to walk a thin line. On the one hand, you could benefit from becoming a co-investigator and co-author of the work that emerges from this supervision. On the other, you must avoid "muscling in" on the graduate student's project and diminishing the credit (such as lead authorships) they receive. If you take on this co-supervision, it would be important to agree at the start, preferably in writing, about everyone's role, responsibilities, and rules for authorship.
5. Never teach on your writing day.
6. Once you are an established, tenured academic, reverse your role. Teach a lot, organize courses, protect the next generation from excessive teaching demands, and invite new faculty colleagues to join you as co-tutors and co-supervisors.

My final advice about time management concerns taking time to go to annual scientific and clinical meetings. Such meetings are usually fun and relaxing. They also can be highly educational (especially, as noted earlier, when you attend with your mentor), and sometimes offer the chance to meet or at least observe the ephemeral experts in the field. However, you have to pay the opportunity costs of attending meetings. You have taken time away from your teaching and patients, and especially from your writing. I know lots of world-renowned clinician scientists who seldom or never go to annual meetings (which should show you that attending them is not a prerequisite for academic success).

You might want to set up and follow some rules about annual meetings. I close with the set I give my fellows:

1. Never go to an annual meeting for the *first* time unless you have submitted an abstract that will get published in a journal (thus inaugurating your CV).
2. Never go to that meeting a *second* time until you have a full paper based on that earlier abstract in print or in press (thus making a major contribution to your CV and academic recognition).
3. *Thereafter*, only go to that meeting if *both* Rule 2 has been met *and* this year's abstract has been selected for oral presentation (or if you have been invited to give the keynote lecture).

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