Clinical research requires clinicians. Yet, clinicians attempting to conduct translational research are faced with intense pressures and distractions. The complexities of 21st century clinical care and those of research make success impossible for someone who dabbles in either.

Historically, clinicians on medical school faculties were expected to care for patients, teach, and conduct research that led to scholarly publications and peer-reviewed grants. These last two metrics drove decisions of promotions committees and engendered respect from academic colleagues. During the latter half of the 20th century, clinicians devoted less time to patient care and turned over many of their daily duties to house officers and fellows. Inevitably, this led to a situation where medical errors were blamed, correctly or incorrectly, on full-time members of the faculty. The Libby Zion case and Medicare audits of major academic centers jolted medical schools into recognizing their responsibilities for patient care. The importance of teaching and patient care became more commonly recognized in the promotions process, but less frequently the primary determinant of a tenure decision. To accommodate this collision of cultures, medical schools developed nontenured clinical tracks for appointment and promotion.

None of these adaptations, however, addressed the crux of the matter; we have not developed a cadre of well-trained, highly productive clinical/translational researchers who protect their time to succeed in what they love. The purpose of this editorial is to present concepts that may (or may not) help address this problem.

The Tripartite Clinical Pathway

The essential feature of this formulation is that academic physicians must differentiate into highly specialized subspecies who are well trained and highly qualified for their role and are allowed to focus intensively on their chosen responsibility. In this model, there are three equal phyla of clinical faculty: the master (or masterful) clinician, the clinical investigator, and the physician/scientist.

The master clinician (often referred to as the “clinician/educator”) is devoted to the meticulous care of patients and to teaching medical students, residents, and fellows the practice of medicine. These individuals are responsible for building a medical practice and identifying eligible patients for participation in clinical trials. Although they would not be directly responsible for originating research, they should be required to join research teams, be familiar with the clinical trials portfolio of the institution, refer patients for phase I and II clinical trials, and enroll patients and directly care for those patients on phase III and IV studies. They would be likely to enjoy and should be encouraged to participate in National Cooperative Groups where they would be valued for their clinical acumen. Review criteria for appointment to the faculty would include (a) a clear indication of excellence in clinical medicine, as exemplified by ratings by training programs, mentors, and colleagues; (b) teaching experience (as chief residents, or instructors); and (c) evidence of a scholarly interest in medicine (e.g., published reviews, case reports, etc.). Promotion would depend on the success of their practice based on size and satisfaction surveys from patients and referring/collaborating physicians. In addition, they should be evaluated on how effectively they build or participate in a multidisciplinary clinical team, leadership of tumor boards, hospital cancer committees, and referral of patients for clinical trials. Evaluations by students and participants in courses in which they teach would be an important determinant of advancement. Salaries for master clinicians should be directly linked to clinical productivity, with a low base and high incentive formula, further designed to reward excellence in teaching and participation in research.

The clinical investigator focuses entirely on conducting clinical trials and would not be responsible for patient care outside of the context of those patients participating in their research. The clinical investigator would be responsible for teaching the principles and practice of clinical research to students, postdoctoral fellows, and nursing staff. Appointment would be based on strong training in clinical trials methodologies (e.g., biostatistics, pharmacology, informatics, and imaging) obtained during medical training or through postgraduate training (e.g., M.P.H. degrees, or coursework in related disciplines). Promotion would be based on success in the funding and conduct of clinical research, with particular emphasis on originality and quality, productive collaborations with research colleagues in academia and industry, and the results of those activities judged by publications and international reputation. These individuals should be encouraged to participate in phase I clinical trials units where they learn the details of how to obtain funding, Institutional Review Board approval, and proper conduct of the most rigorous trials. This experience could then be transported to disease-based phase II research where the knowledge they gain from early studies of new compounds or concepts can lead to investigator-initiated, hypothesis-driven research. Salaries would be based on research productivity measured by grant support, publications, and teaching.

The physician/scientist (often the product of M.D., Ph.D. programs) focuses on basic medical research (laboratory or...
population science) and may spend limited time seeing patients embedded within a disease-specific multidisciplinary unit. They would be responsible for teaching the biological basis of medicine to medical and graduate students as well as basic research to medical and graduate students and fellows. Their appointment would be based on training and early signs of success including grants, publications, and strong recommendations from mentors. Promotion would be based on the traditional tenure criteria, including international reputation, publications, grant support, and comparison to outstanding individuals working in the same area of research. However, particular attention should be placed on the ability of these faculty members to interact with basic scientists and clinical investigators in the creation of highly effective teams who carry out important translation research (as judged by program project grants, Specialized Programs of Research Excellence, and similar peer-review funding for team research). Salaries would be based on research productivity measured by National Cancer Institute or equivalent peer-reviewed grant support and quality of research publications and teaching.

Potential problems: This tripartite system raises the possibility of inadvertently creating an “apartheid” system where the highest of the social order might be, based on traditional values, the physician scientist who is most likely to publish in high-impact journals and receive national and international recognition and tenure more rapidly than the other types. Institutions should guard against this potential pitfall by communicating the importance of each type of faculty member effectively and continuously to others and defining clear pathways for promotion.

A possible method for leveling reimbursement across the clinical spectrum would be the creation of a bonus pool to be shared by the team. The team would receive a percentage of the pool based on the percentage of their salary they raise on grants, clinical trials, or patient care.

A second potential problem would be the retention of master clinicians who could practice more efficiently (and perhaps more lucratively) in a private setting. This pitfall must be abrogated by selecting candidates who gain gratification through interactions with academic colleagues who love to teach and participate in the discovery process. At the same time, the institution must take responsibility for creating an infrastructure that delivers efficient patient care. This change in focus and culture will reap enormous benefits for the faculty and their practice plans.

How can we support this tripartite system within the financial constraints of modern academic medicine? Some academic centers asked clinical faculty to see more patients “to help cover higher salaries.” Yet, many heme/onc divisions lose money on patient care; thus, the more patients seen, the more money lost. I would counter with “how can we afford not to move in this direction”—if we are serious about driving the translational research agenda.

Historically, medical oncology was the stepchild of internal medicine, and medical oncologists were seen as better at prescribing toxic medications than at providing sophisticated patient care. I believe that if this perception still exists, it must be rapidly dwindling as heme/onc services are often the most popular for medical house staff and students because of the teaching, complexities of the illness, and the role of attending physicians who were often the finest internists in their house staff group and pride themselves in their knowledge of internal medicine. To maintain this reputation for clinical excellence, the responsibilities must reside with master clinicians who will provide most of the care and lead multidisciplinary teams that include clinical investigators and physician scientists who will benefit greatly from their acumen.

Summary

As we strive to accelerate the application of discoveries to the practice of medicine, we must muster a clinical workforce that can effectively participate. Essential to this process is the recognition that each type of research (basic, clinical, and translational) must be pursued with single-minded intensity. By creating defined tracks within clinical departments, it would be possible to allow physicians to focus on clinical/translational research without the added responsibility of providing routine medical care. All would also agree that the care of patients with cancer deserves the undivided attention of masterful clinicians who are not tormented by a system less likely to reward them for this calling.