

Revolutionary Leadership and Family Medicine Education

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Reform of the payment and delivery systems in American health care is now being discussed at the highest levels of business and government. Family medicine educators, researchers, and program leaders have an opportunity to provide substantial leadership to this process in their own communities and nationally. To do so, they must reconsider the assumptions made in creating our current systems of practice and education, and this will require new leadership skills that focus on innovation and adaptability. It will also require a more aggressive willingness to test new ideas and a new scientific method to prove or disprove their value. This essay outlines essential elements of such leadership for those responsible for the education of future generations of family physicians.

(Fam Med 2008;40(4):277-80.)

Family medicine is now more than 5 years into a process of reflection and renewal called the Future of Family Medicine project (FFMP).¹ In clinical practice, education, research, and policy development, we have been working to transform our discipline to better meet the needs of the American people. But many family physicians struggle to see the purpose of this renewal process, and some wonder whether the effort is little more than an exercise in marketing. Outside of our discipline, many lament the problems of poor health care access and rising costs and, at the same time, question the future of family medicine and primary care. As family physicians struggle to make sense of the chaos, many fear that the FFMP, as currently defined, might be insufficient to save our discipline. In such times, it can be hard to tell the difference between enduring principles and

outdated ideas. Thus, it is critical to understand and reconsider the assumptions that underlie our way of doing things. Nowhere is this truer than in the educational process we have designed to produce family physicians for the future.

In his 1962 book, *The Structure of Scientific Revolutions*, Thomas Kuhn defined a paradigm as a scientific achievement that shares two characteristics. First, the achievement must be sufficiently unprecedented to attract a group of adherents away from competing modes of scientific activity. Second, it should be sufficiently open-ended to leave important problems for scientists to resolve.² Our current paradigm of medical science began with the Flexner report of 1910,³ which established the basic sciences of biology, anatomy, and physiology and clinical education in hospitals as the foundation for medical education and health care in America.⁴ We have been working in this paradigm for our entire careers, so its assumptions are firmly ingrained into our work. Table 1 lists some of the postulates that form

the intellectual foundation of this system. Kuhn believed that scientific paradigms are replaced only when a competing paradigm arises to replace them, and he termed this process a “scientific revolution.” Most scientific progress occurs within a given paradigm as theories and ideas are modified by accumulating new evidence. Scientific revolutions occur rarely and result in radical changes in the foundational principles of the field undergoing such change.²

As early as the 1940s it was already clear that post-Flexnerian medicine had serious problems. Family medicine was created in the 1960s to address some of these problems.⁵ Table 1 lists some of the philosophical contributions of the family medicine movement. Some of the movement’s founders saw revolutionary change as our purpose, but others felt that our discipline was created to reform rather than to replace this medical paradigm.^{6,7} We have spent nearly 40 years trying to adapt our ideas to fit into the accepted system and thereby gain acceptance by the

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Table 1

Philosophical Contributions of the Family Medicine Movement

<i>Postulates of Post-Flexnerian Medicine</i>	<i>Contributions of Family Medicine</i>
Medicine is most beneficial when based on the scientific method.	Medicine's scientific method should be more inclusive of the social and behavioral sciences in addition to the traditional physical and biological sciences.
Depth of knowledge and clinical expertise defines excellence.	Breadth of knowledge must balance depth in our definition of excellence.
Specialization is a characteristic of improving systems.	Excessive specialization increases costs and reduces access. Generalism and specialization must be balanced.
Physicians treat diseases; knowledge of the disease process defines competence.	Physicians treat patients and the communities in which they live, not simply diseases.
Disease results from discrete insults such as toxins, infections, and genetic lesions; causality is linear.	Disease is heavily influenced by environmental factors and lifestyle choices; causality is complex.

rest of our profession. If our goal was to simply improve American medicine, such compromise was inevitable, but if the goal was to create a new paradigm, then we may have compromised too much. Should family medicine be a reform movement or a revolution? As the current system fails around us, we should now reconsider this question.

Kuhn's definition of scientific revolution suggests a sharp and discontinuous change in the fundamental ideas on which scientific knowledge is based. Examples include the revolution from Newtonian physics to an understanding of the physical world based on relativity and quantum mechanics. During such revolutions there is a reorganization of the postulates that underlie science. There is growing evidence that a Kuhnian revolution is starting that will replace, not simply fix, 20th century American medicine. Such a revolution will not simply change clinical practice but will alter the scientific method we use to resolve questions about how practice should change. Could it be family medicine's destiny to lead this revolution? Are we big enough or influential enough to do so? More urgently, are we now training 21st century family physicians to carry out a task this important? To answer these questions will require a care-

ful reassessment of our own beliefs and theories and a willingness to radically examine and change ourselves.

Family Medicine's Educational Postulates

Table 2 lists some of the foundational postulates on which the family medicine residency is based. The current structure of our training programs only makes sense if we assume these postulates to be true. We certainly have never tried to prove or disprove them, nor can we easily explain why we think they're true. We should now reflect on the degree to which these assumptions remain valid for the years ahead. If they should be changed, can we agree on how?

Kuhn states that even when the prevailing paradigm is no longer

salvageable, it will not be replaced until a viable, credible alternative theory is offered.² It should now become our primary task to create such an alternative on the front lines of the health care system. Creating and teaching a new model of scientific inquiry based in clinical practice rather than the laboratory will require a different leadership strategy in our departments and residencies—a leadership style that embraces and studies innovation and questions the status quo more than we have in the past.

Table 3 lists some modifications we might consider for our assumptions about residency education. It makes no sense to design our residencies to emulate existing practice if existing family medicine practices are broadly dysfunctional. But how do we know if a

Table 2

Postulates of Family Medicine Residency Education: 1969–2007

- Comprehensive breadth (not depth) of knowledge is required for the primary physician.
- Credibility with hospital organizations and other medical disciplines is essential.
- The training environment should emulate practice.
- Community-based education will produce the best primary physicians.
- Responsibility is learned by being the doctor in continuity relationships.
- Experience=competence; quality=good process of care.

Table 3

Possible Future Postulates of Family Medicine Residency Education

- Comprehensive breadth (not depth) of knowledge is required for the family medicine team; sophisticated information technology will be necessary to manage the burgeoning knowledge base.
- Credibility with hospital organizations and other medical disciplines is important, but we should lead them rather than follow them.
- The training environment should drive continuous improvement in practice.
- Innovation-based education, based on learning how to create and study new ways of doing things, will produce the best primary physicians.
- Responsibility is learned by being the doctor in continuity relationships; doctors treat patients and populations and not just diseases.
- Excellent outcomes=competence and quality

new approach will be any better? If comprehensiveness is a team function rather than an individual function, does this improve quality? What does this mean for the scope of practice for each team member and for how we train these team members? How do we know the proper composition of such teams, and how much does this change from one community to the next? Table 3 is not a finished product but rather a starting point for reflection that must occur at every level of our academic community. We should talk about this at faculty meetings in every program in the nation. Program leaders should bring new ideas to national meetings to create a national debate. Innovation should be encouraged but must be responsible and accountable and must be evaluated rigorously. For every new idea, we will need a strategy to test and measure outcomes. Practice-based research is in its infancy, so the scientific method of testing these innovations is yet to be fully developed. But the underlying principles behind these new ideas have to be built by consensus because they will frame the first questions to be addressed using this new scientific method.

Revolutionary Leadership

Thus far, I have argued that a change in the scientific paradigm of American medicine may be start-

ing. Such a scientific revolution is likely to take years and be characterized by substantial uncertainty and instability. Patients will be at substantial risk for adverse outcomes during this period as more of them fall out of the system of care we have used for nearly 100 years. If this is the case, then it is a mistake to try to save the current paradigm. We are no longer trying to fix the system; we are trying to replace it. We are no longer trying to help people to use it; we are trying to protect them from its excesses and deficiencies. We must not underestimate what a fundamental change in approach this will require from us. Scientific revolutions are not disciplined, managed change. They are chaotic, unpredictable, and polarizing.² If we want to be successful, we will have to build highly adaptive leadership teams in our clinical practices, residency programs, and academic departments.

In many ways, residency program leadership may be our greatest challenge. Family medicine residencies have evolved into a highly structured and conservative process. The rules of our accreditation process and our own educational culture have discouraged innovation and experimentation for so long that residency directors have roles better characterized as management than leadership. If we are to create a new

model of residency education that can produce revolutionary leaders and scientists for the health care system, it will almost certainly need to be different than what we have today.

Building such programs will require partnerships between two important types of leaders. To illustrate this, consider what it takes to build a great building. A great building starts with a design from a visionary architect. This design is then brought to life by skilled builders. The architect without the builder produces only drawings. The builder without the architect has nothing new to build.

Family medicine residency leadership for the past 3 decades has been an environment that selects for the builder genotype, and our discipline has had a general shortage of architects. We have been using pretty much the same blueprint everywhere for a long time. We have not been conditioned or trained to think in a visionary way about residency education and we have the programs to prove it.

Table 4 lists some of the characteristics of architect-leaders and builder-managers. Notice how complementary these skill sets are to one another. Consider what a terrific team would result from blending these skills. But simply constructing such teams will not be enough. The teams will then have

to address at least four leadership challenges to succeed.

First, they must focus intensely on the needs of the community being served. They must assess and understand these needs, and they must solicit open dialogues with the community to do this.

Second, the teams must study and evaluate the residents they are trying to teach. Entering family medicine residents are now more diverse than they have ever been. They have disparate skills on entering the program and diverse goals when leaving it. Our programs must take these conditions into account.

Third, residency leadership teams must measure, record, and study the outcomes of everything they do. This is where new ideas about a practice-based scientific method will be crucial. This new science will draw more heavily on population-based research methods such as epidemiology and on the social sciences than on the reductionistic methods fostered by the Flexnerian approach. We will not get the model right on the first try, so we need to be constantly testing our ideas, submitting them to the scrutiny of our peers, and dissemi-

nating the results whether positive or negative. Ideas that are proven to work should be implemented everywhere. Ideas that fail should not be repeated endlessly in every program in the nation.

Finally, residency leadership teams must embrace the needs of family physicians in the community. The future is very likely to involve a much closer connection between graduate and continuing education. We should view these problems together and not separately. Imagine the potential effects of a program designed to teach residents and practicing physicians together about how to test new models of practice.

Notice that the needs of hospital organizations are not emphasized in the above list of challenges. Since residencies are funded by hospitals, the temptation will remain strong to prioritize hospital needs and business goals. Not doing so risks losing our jobs or even our programs. The residency accreditation process has been profoundly resistant to innovation, and programs that challenge this orthodoxy risk rejection from their peers. Revolutionary leadership will require the courage to take such risks. The list of challenges also does not include great attention to the needs of specialists or other primary care disciplines. We should invite all interested parties, regardless of their training or background, to join us in these efforts. But our task is to lead a health care revolution, not to simply be good citizens.

Conclusions

We should not take lightly the notion of an intellectual and scientific revolution in American medicine. The risks involved are formidable. But it is time to stop making excuses for the health system in

which we work. We should be embarrassed that, by many measures, American health care is no better today than it was 40 years ago, and most measures of population health are worse than in other developed countries. A major reason for this is that our current scientific method is poorly designed to answer the central questions about how to deliver effective and affordable care on the front lines where we work. Family medicine requires a new spirit of innovation that has not occurred in our discipline since its earliest days. The health system will never change until we insist on it, and the change must begin in our own house.

Acknowledgment: This manuscript is the written version of the 2007 Nicholas J. Pisacano Lecture presented at the Annual Family Medicine Program Director's Workshop in Kansas City, Mo, on June 11, 2007.

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Table 4

Characteristics of Architects and Builders

<i>Architects</i>	<i>Builders</i>
Creative	Disciplined
Innovative	Reliable
Aesthetic	Functional
Theoretical	Practical
Risk takers	Risk managers
Future oriented	Oriented to the present
Conceptual	Concrete