More or Different? Rethinking the need for increasing the supply of primary care physicians in the light of health reform

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> *"When written in Chinese the word crisis is composed of two characters.*
> *One represents danger, and the other represents opportunity."*
> *- President John F. Kennedy, in a speech to the United Negro College Fund, April 12, 1959*

By now it is well acknowledged there is a crisis in primary care in the United States.[1] Although primary care is regarded as the backbone of the health care system, there are serious concerns that we will not have enough primary care physicians (PCPs) to meet the needs of the population. As the population ages, current physicians retire, and new doctors want to work fewer hours than their predecessors, the imbalance between primary care supply and demand will almost certainly worsen. Further, it is projected that as up to 30 million uninsured get health coverage by 2014 as a result of health reform, the demand for primary care will be even greater. As a result of these and other forces, The American Association of Medical Colleges (AAMC) estimates there will be a shortage of close to 30,000 primary care physicians by 2015.[2]

The response to this shortage has been to do all we can to increase the supply of primary care physicians. There have been numerous calls to change physician payment formulas to increase the relative salaries of primary care doctors (which are now roughly half of those of some specialists)[3], private and public initiatives to provide loan forgiveness for those choosing primary care careers[4], and efforts to expand primary care residency programs (such as the recent $167 million Primary Care Residency Expansion Initiative from the US Department of Health and Human Services).[5]

Ironically, at the same time we are trying to create more primary care physicians, there is a growing realization that the current model of primary care itself is flawed. Indeed one of the causes of the primary care shortage is almost certainly the growing dissatisfaction among PCPs (and those considering careers in primary care) of their work life.[6] There are numerous proposals of how to reform primary care in the US, perhaps best represented by the Patient Centered Medical Home[7] model, which advocates increasing support for existing practices through additional payments, increased staffing, more use of information technology and workflow changes. These sorts of changes, however, are incremental ones, and would have little impact on the need for new PCPs.

What if we took President Kennedy's words to heart, and decided that the primary care crisis represented not just danger, but opportunity- a chance to rethink the role of the primary care physician? There are significant changes underway in both technology and society that point us towards a radically different notion of primary care, one which might require not more primary care physicians, but fundamentally different ones.

William Gibson the noted science fiction writer noted, "The future is already here- it's just not very evenly distributed."[8] These changes may not be obvious or widespread, but there are enough small examples that provide a vision of primary care that looks much different (and arguably better) than what we have today. This paper will describe some of these examples, discuss what they tell us about a new role for the primary care physician, and project what this means in terms of the number - but more importantly - the *type* of primary care physicians we will need in the future.

The Current Paradigm for Primary Care

Whether practicing in a solo or small private practice, or as part of a large group or health system, the majority of primary care physicians' days are filled with a series of face-to-face visits for which they are paid piecemeal, based on an arcane set of documentation rules. In between these visits, and at the end of the day, there are dozens of phone calls to return, prescriptions to refill, lab and radiology reports to review, and letters to write. One practice in Philadelphia reported that, on average, each primary care physician completed: 18.1 visits; 23.7 calls; 12.1 prescription refills; and reviewed 44.5 lab, radiology, or consultation reports.[9] While the national average is that each visit lasts about 21 minutes[10], there are many practices in which PCPs average 35-40 visits each day for just 10-12 minutes per patient.

The underlying paradigm here is the PCP as an assembly line worker; the job is to provide the best care possible for each patient you see, every 10-20 minutes. The economic imperative is to push more widgets off the line each day, and as the payers ratchet down the payment per-visit and the overhead of practicing increases, the doctor is required to see more patients per day, or work later, in order to keep up. Making this worse, there are increasing expectations of what the primary care doctor should cover during these visits. One study by the Centers for Disease Control estimated it would take a doctor 21.7 hours a day if they followed all the preventive and chronic care recommendations for an average panel of 2500 patients.[11] Doctors are increasingly realizing that this is an unwinnable and worsening game[12].

Looking deeper, this system is based on a number of underlying and fundamental beliefs. The first is that it is the PCP's job to manage the patient's

health. The growing notion of the Accountable Care Organization is built on this premise - that the responsibility for managing cost and quality of care lies not with the health plan, as it has in the past, but with the providers. In addition, the growing use of quality metrics and pay-for-performance reinforces the view that it is the doctor who is ultimately responsible for managing a patient's health.

The second belief is that the doctor needs to take this responsibility very personally. We are taught from our early days in medical school and residency to trust no one but yourself, and if you delegate a task, you need to personally double check that it is done. The malpractice system in the US reinforces this belief, as does the fee-for-service billing system which largely only pays for physician-patient interactions, and not for visits with other members of the care team.

Perhaps because of these first two beliefs, the current system is also dominated by a third: that the doctor must protect patients from themselves. We require patients to get our permission before undergoing most tests and taking most treatments, including the vast majority of medications. In addition, we make it difficult for patients to see their own medical records (despite laws to the contrary) and tightly control their access to our practices and schedules.

Of note, most of the incremental redesign proposals for primary care, including the Patient Centered Medical Home, do not fundamentally challenge many of these beliefs. They simply ask for more money and basic tools to largely do the same thing we do today.

A Changing World

These beliefs underlying the current model of primary care are increasingly in opposition to changes going on in the lives of our patients. Over the past few decades, there has been a general decline in the respect for authority figures to make decisions for us, and an increased desire and demand to take control of our own lives and decisions. This has been hastened by the availability of new technologies, especially the Internet, and the resulting democratization of information. Today, anyone with a computer, smartphone, and web connection has access to more information than the most learned scholar could ever hold in her mind. In addition, more and more sophisticated decision-support tools and the ability to learn from the experience of others online has further increased individuals' desire and ability to act for themselves.

Many industries such as travel agencies, book and record dealers, real estate agents, and stock brokers have learned that they needed to adapt to this new reality or simply disappear as the buggy whip makers did with the advent of the automobile. While it is true that primary care is different in its complexity than booking airline tickets and buying music, this is a difference in degree and not

principle. As technology and social expectations continue to change, it is naïve to think primary care will remain completely the same.

We can already see glimpses of how this might play out in primary care. It is clear that many of the things now done by PCPs can just as well, or perhaps better, be done by less trained and less expensive staff. There is increasing focus on the substitution of Nurse Practitioners (NP) or Physician Assistants (PA) for primary care physicians, especially in structured settings such as retail clinics,[13] but the more interesting trends push this sort of substitution much further.

Disease management companies have long tried to help patients manage chronic disease with support from nurses located in remote call centers.[14] Increasingly, primary care practices are integrating these personnel into the practice itself, where they can use real clinical data, maintain face-to-face relationships, and work in close cooperation with the physicians on-site. For example, a team at Johns Hopkins led by Chad Boult is implementing a model called Guided Care. The model puts nurses into the primary care office to help coordinate the care of the sickest patients.[15]

Nurses, however, are often as hard to find as primary care physicians. In low-resource settings (including developing nations[16] and poorer parts of the US[17]), patients themselves have been trained to provide support to other patients within the community. Tom Bodenheimer described a “teamlet” model where these types of community health workers (CHWs) are integrated into primary care practices[18]. This model has already been implemented in health centers in Atlantic City NJ[19], Hanover NH[20], and Denver CO.[21] Others, such as a union practice in New York City, have implemented similar models using medical assistants.[22]

For years, patients have gone beyond this to provide support and guidance for each other, outside of the clinic setting. The Internet had spawned a host of platforms where patients can share information. The sophistication of the questions asked (and answered) on sites like Patients Like Me[23] and Braintalk[24] often exceeds the knowledge level of some PCPs - particularly for rare conditions. Some primary care practices are now leveraging this type of social networking by providing structured peer-support programs[25] or group visits.[26]

There is also a growing set of sophisticated tools available for patients to diagnose their own conditions. Websites like Symcat[27], for instance, allow patients to enter their symptoms and find a list of probable diagnoses, based on Baysian logic. A few progressive practices are integrating versions of such tools into their practices to allow patient themselves to do most of the work of history-gathering, documentation, and potential diagnoses. The doctor can then spend just a few minutes clarifying answers and reviewing the results of the expert system to make a definitive diagnosis and prescribe treatment.[28] Considering

that it has already been shown that it is generally safe to allow women to self diagnose and treat recurrent urinary tract infections[29], it is not far-fetched to think that this could be extended to a variety of other very common acute conditions, as well.

In addition, patients are also increasingly able to self-diagnose and track their chronic conditions. For instance, in 1993 the US FDA approved a home cholesterol test and, in 2002, a home Hemoglobin A1c test. And while home blood pressure cuffs have been on the market for years, the FDA has recently approved versions that transmit the data via cell phone or computer to an automated system that provides feedback and tracking for patients.[30] The FDA has also recently announced that it is considering allowing many chronic disease medications - now only available by physician prescription - to have "Over the Counter Plus" status that only requires verification from a pharmacist, without any physician involvement.[31]

A New Vision for Primary Care

These trends force us to fundamentally reconsider the role of the primary care physician. The reality is that *we,* the doctors, cannot manage our patients' health. In the current world, they see us an average of three times a year. That leaves 362 days of the year that they are on their own. In other words, virtually all decisions patients make about their health take place without their primary care physician. In reality, only patients and their loved ones - not doctors or nurses or anyone else - can manage their health. Our job as their PCP is to give them the tools to do just that.

The role of the primary care doctor as a system architect has several components. The system architect needs to design, implement, monitor, and continually improve the system of care for patients. This includes hiring, training, and supervising the nurses, CHWs, and others who will work with the PCP to help patients manage their own health. It also includes selecting, modifying, and improving the IT systems needed to help the practice and its patients. While this system design should be informed by general evidence of safety and efficacy, every population is different in terms of medical and social needs and expectations. It is the system architect's job to constantly adapt the practice to meet the unique needs of their patients.

While it can be argued that others, such as MBA-trained managers, should be system architects, the primary care doctor's training and experience in understanding disease and human behavior, as well as her trusted social position, makes her uniquely positioned for this role.

While most of the patients in a physician's panel can largely be managed with the right staff and tools, there will always be a small percentage of patients with

complex and chronic conditions who truly require the many years of training and experience of the PCP herself. The doctor's job is to play a much more active role in managing these complex patients, and to monitor other patients who may become complex in the future.

With effective tools and support, the primary care physician can also take on many of the roles now played by the specialists to whom they now refer. There is little reason why a well-trained and well-supported PCP cannot primarily manage the vast majority of patients with asthma, diabetes, hypertension, and other chronic diseases, instead of the current model in which patients are managed by multiple specialists who often do not communicate with one other. The PCP as system architect can use specialists as needed for consultation, but retain the primary management of the patient.

The Iora Health Experience

Several years ago we started a company called Iora Health to actually build new practices from scratch based on this vision. We contract with progressive payers, typically self-insured employers or union trusts, to build a new primary care option for their beneficiaries. The practice is paid a risk-adjusted primary care capitation rate, a fixed amount per patient per month which is roughly double the amount typically going to primary care, with no fee for service billing. Because of this, we can completely restructure the practice model to allow the doctor to serve as the system architect for a population of patients. Each patient works with the doctor and a personal health coach who is drawn from the community and comes from the culture and speaks the language of the patients they serve. Together, they come up with a shared care plan, and then gets a lot of education and support in person, by email, video, and in groups.

Patients track their own conditions and can reach out in a variety of ways when they need help, and we reach out to them periodically based on their illness level and as needed. Every morning we start with a team huddle to discuss patients who are in need, and throughout the day build in time for the doctors and health coaches to interact proactively by phone, email, or video chat with patients. We use specialists as consultants, brining some of them like mental health and cardiology into the practice, and are able to manage most chronic care ourselves. The entire project is powered by a new IT system we built to truly engage and empower our patients and streamline coordination across teams.

Implementing a completely new model like this is not easy, and it has taken many years of tinkering to get it to where it is now. We have found that the vast majority of patients are very pleased with their new role within a care team, and feel more in control and better taken care of. However, we understand that this model is not for everyone, and we need to be open to providing different care models to meet the needs of different types of patients.

On a personal note, as a physician who has had the opportunity to practice in both traditional PCP roles as well as in our new team-based practices, the role of system architect and manager is much more satisfying. It retains the best qualities of the job, ongoing personal relationships with patients, and the ability to provide them with tools to actually help them improve their health. I now feel I am spending my time on things that are challenging and require my training and experience, and that I am able to make a difference.

In pilot practices in Seattle and Atlantic City, this model showed large improvements in clinical outcomes. In addition, we and others who are implementing these sorts of models have seen large drops in downstream spending that more than compensate for the increased investment in primary care.[32]

The Doctors We Need

If we play out the trends - changing patient expectations and demands, increasingly sophisticated technology, and the imperative for cost containment - it becomes clear that most of the current visits to primary care doctors could very soon disappear, or be dealt with in another setting or by another member of the care team. If PCPs step into the critical role of system architect and manager, particularly for the sickest patients, we believe that each physician could manage up to 5,000 patients, double the current average panel size of 2,300.[33] Others, including the Advisory Board Company, have also projected comparable panel sizes based on similar radical redesign.[34] If this is even directionally correct, than the estimated shortage of 30,000 primary care physicians will rapidly turn into a surplus, and training more doctors becomes a wasteful and counterproductive strategy, particularly because of the well documented ability of physicians to induce demand for services.[35]

Instead of more primary care physicians, it is clear that we need very differently trained ones than those we have today. In general, today's PCPs go through four years of undergraduate training where they must take calculus, organic and inorganic chemistry, physics and biology; then two years of preclinical work at medical school focused on anatomy, physiology, biochemistry, pharmacology and pathophysiology, then two more years of clinical rotations and then three years of residency training, all largely spent in the hospital. It is unclear that this system selects the right people or trains them to become the system architects and managers that we need as the primary care physicians of the future. While some degree of science training is critical to understand the body and its illnesses, so is a background in engineering, systems design, operations research, statistics, economics, informatics, psychology, management, and leadership - all of which are either missing or covered in cursory fashion in the current medical curriculum. In addition, the teamwork involved in this potentially transformative type of practice calls into question the separation of doctors,

nurses, medical assistants, and other medical professionals throughout their training, and argues for integrating team training at a much earlier stage

Moving Forward

This new vision of PCP as system architect and manager requires many changes to the current dominant model of payment, organization, and regulation of practices. These changes include:

- New payment models that move away from visit-based billing and increase in the share of health care dollars going to primary care, from the current 5% of health care spending[36] to perhaps double that, in order to pay for the increased technology and personnel support.
- New practice models, including very different staffing (e.g. teams of 4-5 clinical staff for each doctor) and new workflows in the practice, including team huddles and time set aside for proactive management.
- New IT platforms, beyond today's Electronic Health Records (EHRs), that truly engage patients and teams and help streamline the management process.[37]
- Regulatory changes, including the scope of practice laws and malpractice standards that hold current practices as the standard of care, despite no evidence that this is ideal.
- Changes in FDA rules to allow more over-the-counter consumer use of testing and drugs, especially when linked to proper decision support.
- Fundamental changes in physician training, as described above.

This new vision for primary care requires several fundamental power shifts — from the hospital and specialists to the primary care physician, from the primary care physician to members of her team, and from all of us in the health system to our patients. Power is zero sum. No one likes giving it up voluntarily, and this transition will not come without some pain and disruption. However, it is ultimately in the medical industry's interest to adapt and innovate with consumer trends, or risk becoming obsolete, as many travel agents, book stores, and stock brokers have learned over the past several years.

The dual crises of primary care supply and of dissatisfaction with the current model presents us with a rare opportunity- to fundamentally rethink the role of the primary care physician, and move away from serving as an assembly line technician towards being the architect and manager of systems of care that empower our patients to make the best health decisions. This will require not more doctors, but differently trained ones, and if we have the courage to move ahead in this direction, we will create a better experience and improved health outcomes for our patients, as well as a better life for ourselves as physicians.

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