

make sure the resources are there for the right people,” Mercado said. “Yet how can you deny someone health access? If we don’t treat and prevent illness . . . our whole community is going to suffer.”

Dr. Okie is a contributing editor of the *Journal*.

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## BECOMING A PHYSICIAN

# Terra Firma — A Journey from Migrant Farm Labor to Neurosurgery

Alfredo Quiñones-Hinojosa, M.D.

“You will spend the rest of your life working in the fields,” my cousin told me when I arrived in the United States in the mid-1980s. This fate indeed appeared likely: a 19-year-old illegal migrant farm worker, I had no English language skills and no dependable means of support. I had grown up in a small Mexican farming community, where I began working at my father’s gas station at the age of 5. Our family was poor, and

we were subject to the diseases of poverty: my earliest memory is of my infant sister’s death from diarrhea when I was 3 years old. But my parents worked long hours and had always made enough money to feed us, until an economic crisis hit our country in the 1970s. Then they could no longer support the family, and although I trained to be a teacher, I could not put enough food on the table either.

Desperate for a livable in-

come, I packed my few belongings and, with \$65 in my pocket, crossed the U.S. border illegally. The first time I hopped the fence into California, I was caught

eating anything I could get, with hands bloodied from pulling weeds — the very same hands that today perform brain surgery.

My days as a farm worker



and sent back to Mexico, but I tried again and succeeded. I am not condoning illegal immigration; honestly, at the time, the law was far from the front of my mind. I was merely responding to the dream of a better life, the hope of escaping poverty so that one day I could return home triumphant. Reality, however, posed a stark contrast to the dream. I spent long days in the fields picking fruits and vegetables, sleeping under leaky camper shells,

taught me a great deal about economics, politics, and society. I learned that being illegal and poor in a foreign country could be more painful than any poverty I had previously experienced. I learned that our society sometimes treats us differently depending on the places we have been and the education we have obtained. When my cousin told me I would never escape that life of poverty, I became determined to prove him wrong. I took night



jobs as a janitor and subsequently as a welder that allowed me to attend a community college where I could learn English.

In 1989, while I was working for a railroad company as a welder and high-pressure valve specialist, I had an accident that caused me to reevaluate my life once again. I fell into a tank car that was used to carry liquefied petroleum gas. My father was working at the same company. Hearing a coworker's cry for help, he tried to get into the tank; fortunately, someone stopped him. It was my brother-in-law, Ramon, who climbed in and saved my life. He was taken out of the tank unconscious but regained consciousness quickly. By the time I was rescued, my heart rate had slowed almost to zero, but I was resuscitated in time. When I awoke, I saw a person dressed all in white and was flooded with a sense of security, confidence, and protection, knowing that a doc-

tor was taking care of me. Although it was clear to me that our poverty and inability to speak English usually translated into sub-optimal health care for my community, the moment I saw this physician at my bedside, I felt I had reached terra firma, that I had a guardian.

After community college, I was accepted at the University of California, Berkeley, where a combination of excellent mentorship, scholarships, and my own passion for math and science led me to research in the neurosciences. One of my mentors there convinced me, despite my skepticism, that I could go anywhere I wanted for medical school. Thanks to such support and encouragement, I eventually went to Harvard Medical School. As I pursued my own education, I became increasingly aware of the need and responsibility we have to educate our country's poor.

It is no secret that minority communities have the highest dropout rates and the lowest educational achievement levels in the country. The pathway to higher education and professional training programs is not "primed" for minority students. In 1994, when I started medical school, members of minority groups made up about 18% of the U.S. population but accounted for only 3.7% of the faculty in U.S. medical schools. I was very fortunate to find outstanding minority role models, but though their quality was high, their numbers were low.

Given my background, perhaps it is not surprising that I did not discover the field of neurosurgery until I was a medical student. I vividly remember when, in my third year of medical

school, I first witnessed neurosurgeons peeling back the dura and exposing a real, live, throbbing human brain. I recall feeling absolute awe and humility — and an immediate and deep recognition of the intimacy between a patient and a doctor.

That year, one of my professors strongly encouraged me to go into primary care, arguing that it was the best way for me to serve my Hispanic immigrant community. Although I had initially intended to return to Mexico triumphant, I had since fallen in love with this country, and I soon found myself immersed in and committed to the betterment of U.S. society. With my sights set on neurosurgery after medical school, I followed my heart and instincts and have tried to contribute to my community and the larger society in my own way. I see a career in academic



medicine as an opportunity not only to improve our understanding and treatment of human diseases but also to provide leadership within medicine and support to future scientists, medical students, and physician scientists from minority and nonminority groups alike.

My grandmother was the medicine woman in the small town in rural Mexico where I grew up. As I have gotten older, I have come to recognize the crucial role she played not only in instilling in me the value of healing but also in determining the fate and future of others. She was my first role model, and throughout my life I have depended on the help of my mentors in pursuing my dreams. Like many other illegal immigrants, I arrived in the United States able only to

contemplate those dreams — I was not at that point on solid ground. From the fields of the San Joaquin Valley in California to the field of neurosurgery, it has been quite a journey. Today, as a neurosurgeon and researcher, I am taking part in the larger journey of medicine, both caring for patients and conducting clinical and translational research on brain cancer that I hope will lead to innovative ways of fighting devastating disease. And as a citizen of the United States, I am

also participating in the great journey of this country. For immigrants like me, this voyage still means the pursuit of a better life — and the opportunity to give back to society.

**An interview with Dr. Quiñones-Hinojosa can be heard at [www.nejm.org](http://www.nejm.org).**

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## Pay for Performance, Version 2.0?

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“Old wine in a new bottle.” “A financial gamble.” “An early glimpse of the next generation of pay for performance.” All these appraisals have been applied to Geisinger Health System’s new approach to elective coronary-artery bypass grafting (CABG), which has been described with words rarely invoked in health care, such as “promise” and “guarantee.” Geisinger, an integrated health care delivery system in northeastern Pennsylvania, promises that 40 key processes will be completed for every patient who undergoes elective CABG — even though several of the “benchmarks” are to be reached before or after hospitalization. And although Geisinger cannot guarantee good clinical outcomes, it charges a standard flat rate that covers care for related complications during the 90 days after surgery.

As a member of Geisinger’s board of directors, I have watched

this program evolve over the past year, and I see truth in all three of the above assessments. Many of the core components of the program are familiar, but this sort of application of those components represents a foray into the unknown. Since a front-page article in the *New York Times* on May 17, 2007, drew national attention to the Geisinger program, other hospitals have been watching closely and wondering whether they, too, should go down this road. Those who examine it closely will quickly discover that the program is less about cardiac surgery than about the search for an alternative to traditional fee-for-service care.

The basic concept is far from radical. The seven cardiac surgeons in the Geisinger delivery system agreed on 40 processes that should be completed during the care of every patient undergoing elective CABG. Most of the “Proven Care Benchmarks”

come directly from guidelines established by the American College of Cardiology and the American Heart Association (ACC–AHA) (see box). These steps (such as the administration of preoperative antibiotics at a specified time) are prominent in the critical pathways in use for cardiac surgery at many other hospitals.

The list does not force the surgeons to practice “cookbook medicine.” For example, they do not necessarily have to use epiaortic echocardiography to screen for atheromata before manipulating the aorta. But the protocol requires that they consider this test and document the reason if they decide not to use it.

Closer inspection reveals some other items on the list that would be new to most critical pathways for CABG. The first benchmark that must be documented is a statement of the indication for CABG according to the ACC–AHA guidelines.<sup>1</sup> These guidelines de-