

Less Paper, More Practice

Area physicians tap
technology to improve
patient care

By Nicole Peradotto

PHOTOS BY K.C. KRATT

Raul Vazquez, MD, arrived late to the digital revolution. But that didn't stop him from establishing one of the most state-of-the-art medical practices in New York State.

Technology permeates every room in his 12,000-square-foot Urban Family Practice facility on Buffalo's Lower West Side. Twenty-four surveillance cameras are discreetly positioned inside and outside the building. At the front desk, patients put their names on an electronic signature pad once they've received the HIPAA notice. The signature is then routed directly to their electronic medical record (EMR).

Each of the practice's dozen exam rooms features a complete media center allowing patients to watch TV, Medline

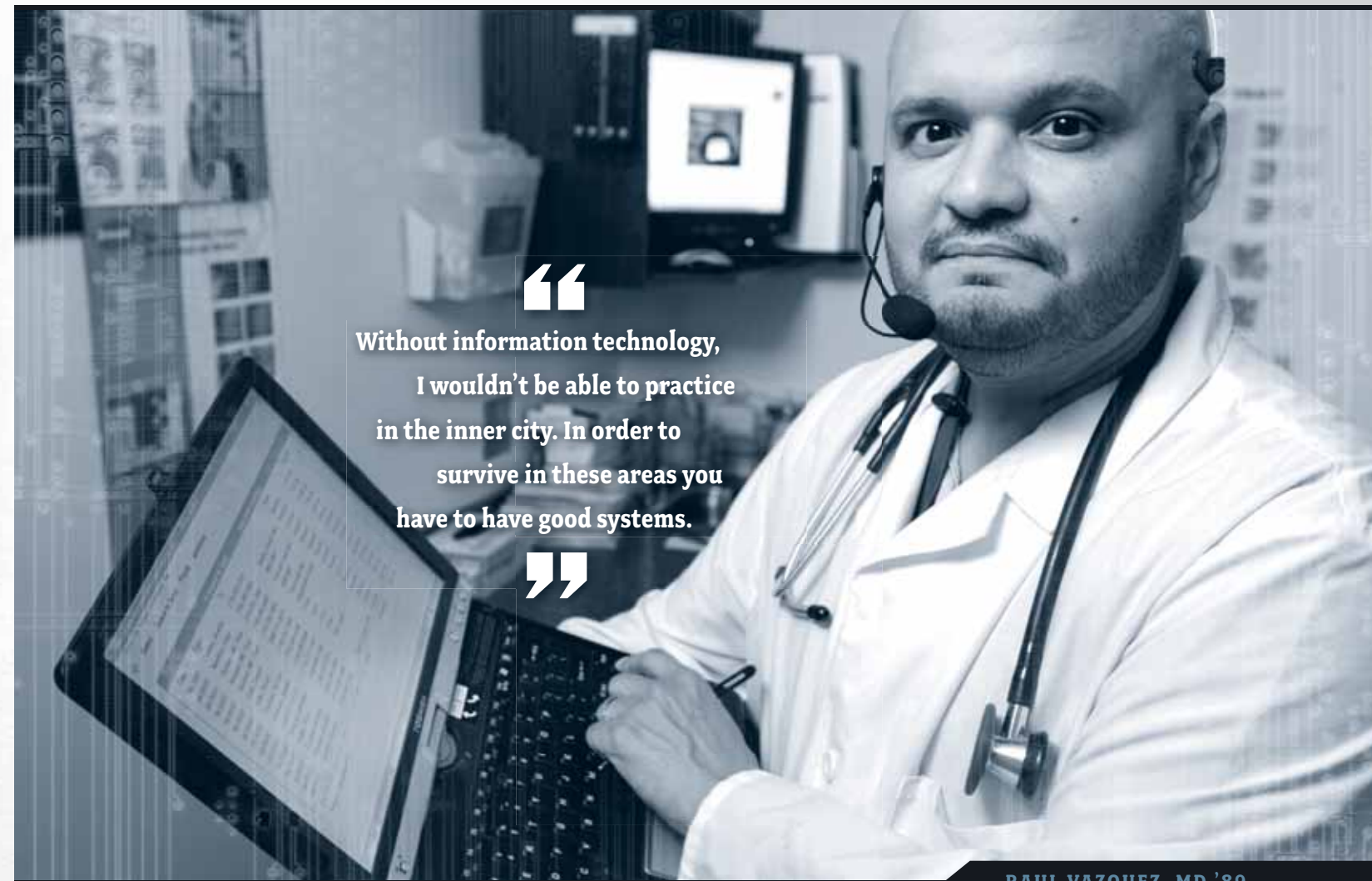
Plus videos or informational slide-shows narrated by Vazquez in English and Spanish. During appointments, he doesn't jot notes into a file—he inputs information into an electronic tablet.

In this respect, the 1989 graduate of UB's School of Medicine and Biomedical Sciences is leading a charge of physicians, locally and nationally, who are converting to paperless practices. Like him, many were born decades before the dawn of the Computer Age.

"I touched my first computer in 1996," admits Vazquez, a clinical assistant

professor in UB's Department of Family Medicine. "I went to Comp USA and saw this high school kid in there who knew so much about these things. I was so intimidated because I had no idea what he was talking about. At that point I said, 'I really need to learn this.' I knew the future was heading in this direction. After that, I took off."

Two years later, Vazquez began automating his Niagara Street practice. Today, his office serves as its digital command center. Over a corner fireplace hangs a SMART Board, an interactive



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whiteboard that's connected to a computer. During staff meetings, Vazquez writes notes on the board with special pens, then downloads the notes to his PDA (personal digital assistant) and e-mails them to his staff. He also relies on the board's touch-sensitive surface during group sessions with patients, such as diabetics who need help managing their illness. Using his finger as a substitute computer mouse, he taps the screen to change the information and images that appear during a video presentation on the disease.

With a program called Synchron-Eyes, Vazquez can monitor all the PCs in his practice. Not that he has to worry that his staff is shopping online or

watching YouTube videos—he filtered out all content that's irrelevant to his operation long ago.

From his desktop computer, he can also zoom in on the surveillance cameras. Demonstrating this capability to a visitor, he scans a live shot of the waiting room. After taking a mental tally of the patients who haven't been escorted to an exam room, Vazquez places a call to the front desk.

"How's flow?" he asks the receptionist. "All those people in the waiting room . . . what's going on with that? . . . OK, make sure."

"I'm a micromanager," Vazquez acknowledges, hanging up the phone.

"I know what everybody does. But I think you have to be if you want to survive, especially in private practice."

At the same time, technology allows Vazquez to step back and view the big picture. Thanks to EMRs—the most versatile tool in Vazquez' high-tech arsenal—he can both monitor individual patients and collect data on his entire patient population.

"Just by clicking buttons, we can see all the patients with hypertension, see which blood pressure meds they're on and chart the changes every six months. We chart it in Excel and look at the data. That way we can see which drugs are working better for them."

What's more, Vazquez can plot out his patients geographically, so he can determine where it's worthwhile to advertise. He can keep track of tests that patients need to take and overlap and compare test results.

He can efficiently access drugs covered by Medicaid and determine an HMO's reimbursement rates for different procedures.

"I was giving a tetanus shot that cost me anywhere from \$9 to \$10, and [the HMOs] wanted to pay me six bucks for it," he recalls. "If you do auto-posting, you can't see that. But with this technology, you can see what's being paid and what's not being paid in a snapshot."

To be sure, all of these 21st-century gadgets and programs carry a hefty price tag. Still, Vazquez considers anything that helps him deliver top-notch care while cutting overhead a worthwhile investment.

Rather than viewing automation as a necessary evil, Vazquez enjoys tinkering with his high-tech toys. "This is my hobby," he says. "I can play with this stuff all the time—my wife will tell you that."

His expertise has made Vazquez an in-demand consultant to other physicians seeking to automate their own practices. For the past several years, he has been helping Promesa, a nonprofit New York City-based health center, integrate EMRs into its four facilities. When UB's Department of Family Medicine was making the transition to EMRs, Vazquez put together a presentation on the process.

During Governor Eliot Spitzer's recent visit to Buffalo, Vazquez met with him as part of a small group to discuss ways that technology, if adapted widely, can decrease the cost of health care in the Western New York region and across the country.

"It can seem cost prohibitive if you don't see the whole picture," he says. "But there are a lot of the features you can use to increase the bottom line and provide better care, too."

For example, rather than hiring an answering service or relying on an outside company to handle automated

patient-reminder appointments, Vazquez purchased his own automated phone system. When patients call after hours, it contacts his beeper, cell phone and home phone. The same system informs patients of prescription drug recalls, encourages them to visit the office for a physical or overdue medical test—it even wishes them a happy birthday.

"I see 50 to 60 patients a day, and they're some of the sickest in the area," says Vazquez, who works alongside a nurse practitioner and a physician's assistant. "We couldn't treat this many patients and do a good job if we weren't heavily computerized."

Learning Curve for a Two-Finger Typist

Elsewhere in the region, other UB alumni are integrating medical informatics tools into their practices and realizing the profound impact it can have on their profession.

The multispecialty practice Buffalo Medical Group is in the midst of deploying EMRs to its 140 physicians and mid-levels, along with its nurses, therapists, ancillary services and support staff.

"While there's been a steep learning curve, from my perspective the benefits have come to fruition," says internist Irene Snow, MD '80, the group's medical director. "I look at this technology as something that is absolutely necessary for the future of medicine."

After four months of learning how to navigate the Epic System EMR—the same EMR used by Kaiser Permanente, Harvard Vanguard and the Cleveland Clinic—Snow has been impressed with the wealth of health-care information she can store and access.

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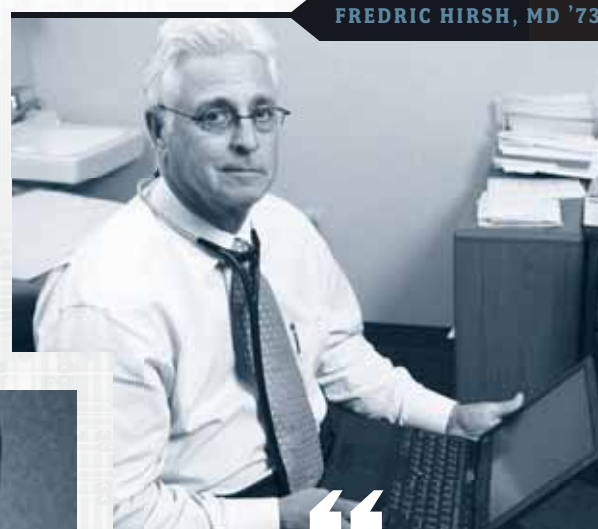
IRENE SNOW, MD '80

"It's wonderful to pull up a record when I'm at home should a patient call up," she says. "And when a patient calls at the office, it's nice not to have to put that patient on hold to get a record because the information is not at your fingertips."

"Whereas before charts were piling up, we now are able to complete our chores for the day in real time," she adds. "Labs, X-rays—anything that I've referred internally—I can click on it and it's done."

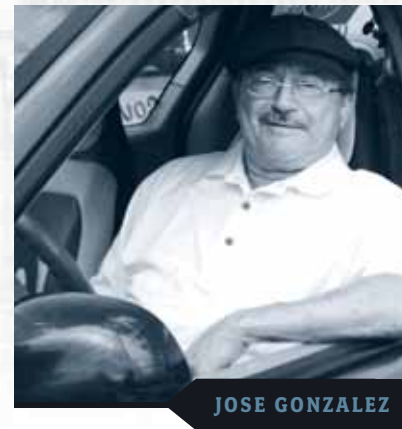
An admitted "two-finger typist," Snow acknowledges that it took time and patience to become proficient in using the EMR. Its capabilities are so vast that, months later, she's still discovering new applications.

"I remember the time as a medical student I opened up my first chart. I liken



FREDRIC HIRSH, MD '73

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JOSE GONZALEZ

it to that," she says. "But if you can get yourself past the first two to four weeks—when you're living in both the paper world and the electronic world—you won't want to go back."

The physicians at the family practice group Highgate

Medical were introduced to EMRs two years ago. In addition to documenting medical history, they use it to prescribe medications, send and receive reports, graph and compare test results, and ensure that patients are taking necessary preventive health tests.

"It really provides for quicker, more efficient communication with collaborating physicians in the care of a patient,"

says Highgate's medical director, Frederic Hirsh, MD '73. "If the collaborating physician has EMR, we both have the same information available to us in our hands. We can share it immediately, in real time, instead of one of us saying, 'I can get something to you in a week.'"

Hirsh was also pleased to make the transition to electronic prescribing. "Historically, the major errors in medicine happen when pharmacists are unable to see what was handwritten on the prescription. Now it goes out electronically, so no one has to interpret my handwriting."

For all of the EMR's advantages, though, it has its limits, Hirsh says.

"Over 50 percent of the time, the patient care visits we see in the offices don't fit nicely into the templates provided for diagnosis and treatment protocols. So we either have to dictate that or type it in. We're learning to become more comfortable using the record to describe the contents of an office visit."

Then there's the dilemma of technological failure—far more frustrating than a ballpoint pen running dry. "The [EMR's] batteries go out, and you have to boot and reboot. If it doesn't let you into a field you want to get into, you want to throw the thing across the room. But you don't, because you know it cost you \$2,000."

Despite the setbacks, Hirsh is happy to be riding the wave of the future. "My patient records are far more organized than in the past, when I had charts of paper upon paper."

Serving the Underserved Better

With all of its practical implications, information technology has helped Vazquez fulfill a boyhood dream: to care for an underserved population.

"Without it, I wouldn't be able to practice in the inner city," he says. "In order to survive in these areas you have to have good systems. We see so

many patients a day—many of whom are very sick—that, without it, I would have probably ended up having a heart attack."

A native of the South Bronx, Vazquez longed to be a doctor ever since he could remember. Growing up in the projects, the oldest of three sons being raised by a single mom on public assistance, he and his family struggled to receive adequate medical care. His uncle, Jose Gonzalez, had it the worst: Because he didn't speak English well, he couldn't effectively convey his asthma symptoms to the doctor.

"Even though you had interpreters, the information didn't get through," recalls Vazquez, who wrote about his uncle's plight in his medical school application essay. "As a result, his asthma wasn't managed well so he was constantly in the emergency room."

These days, his uncle's asthma is under control. And the former New York City taxi driver now has a minivan for his professional vehicle. Working for his nephew, he shuttles patients back and forth between Vazquez's practice and their homes, a courtesy for people living within a five-mile radius of the facility.

Like his uncle, most of Vazquez's staff is bilingual, so there's no threat of a communication breakdown. With a click of a button, his English-language website (urbanfamilypractice.com) can be translated into one of eight different languages. Patients can even download medical forms to fill out before they arrive at their appointment.

Of course, a great many of his patients can't even access the website because they don't own a computer. But Vazquez is doing his part to bridge the technology divide.

Every summer, he closes off a section of Niagara Street and hosts a health fair that draws nearly 1,500 people.

At the end of the day, five lucky winners go home with a brand-new PC. **EP**