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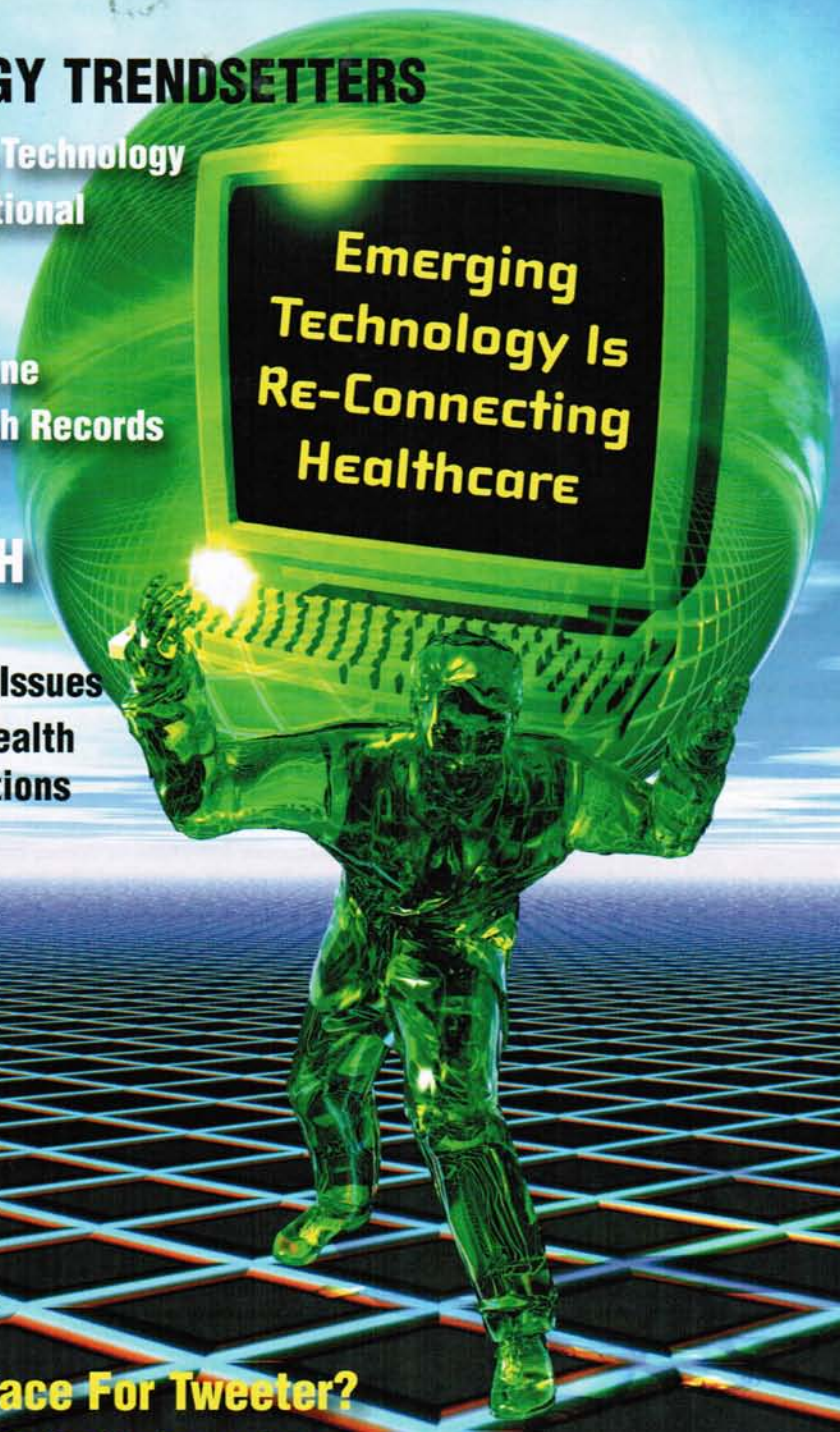

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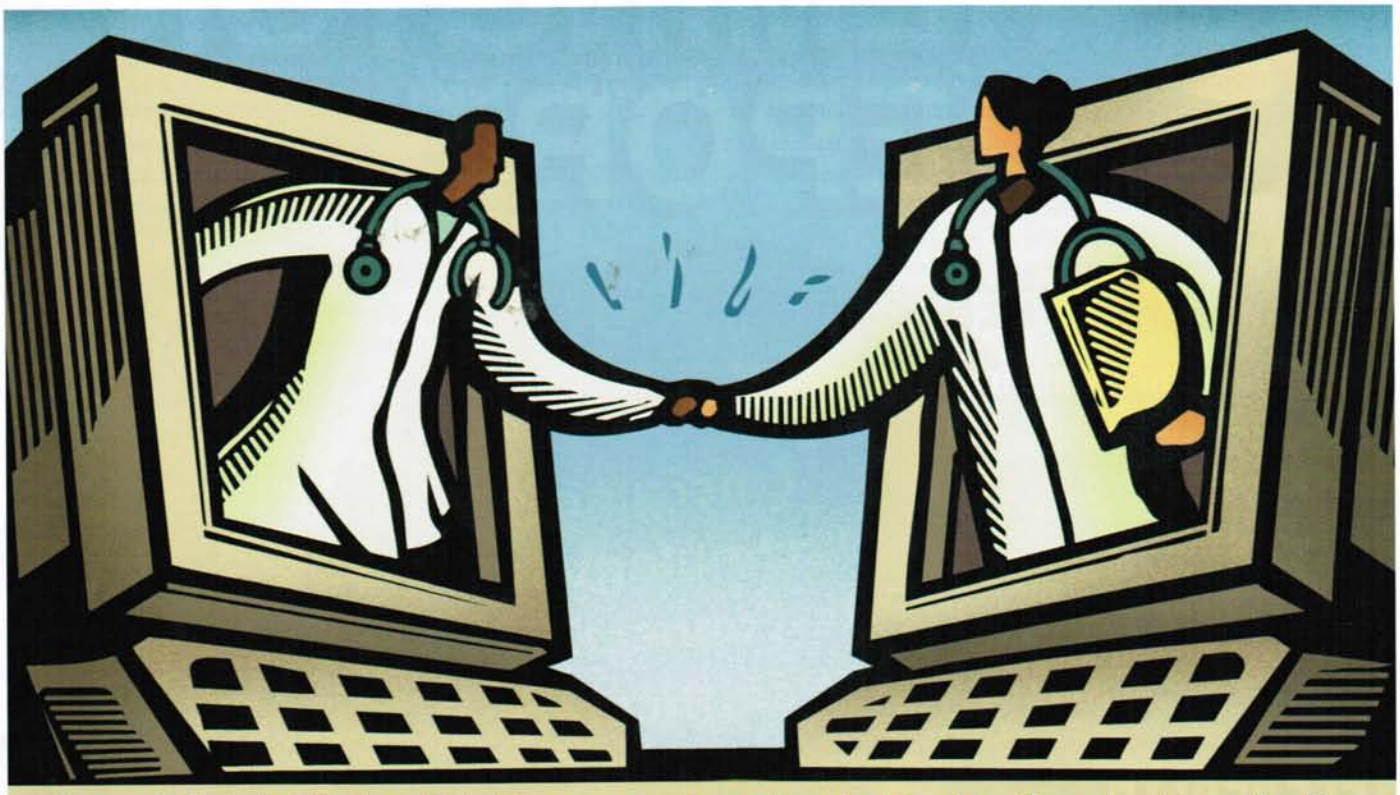

Data Rich Telehealth Program Leads To Reduction In Readmits

Wayne Bazzle is CEO of Home Healthcare Partners based in Dallas. The company provides nursing, therapy and telehealth services through thirty-five offices in Texas and Louisiana. Their data rich telehealth program has captured over 11,000 completed telehealth episodes, and it has generated about 650,000 days of telehealth experiences. They should have close to 1,000,000 patient days of data by the end of 2010. A data warehouse, analysis tools, and the development of a set of algorithms positions their agency as a key partner across the healthcare delivery system.

REMINGTON: Home Healthcare's Partners (HHP) has a successful telemonitoring program with almost 1200 patients now being monitored and data captured on over 11,000 completed telehealth episodes. Your patients are placed in a telemonitoring program based upon risk of hospitalization regardless of diagnosis. Tell us more about the decision to create the program based on this.

BAZZLE: We operate in Texas and Louisiana, both of which have populations with very high rates of chronic disease. In addition, Texas has the highest percentage of uninsured in the country and it has been shown that people without healthcare coverage use far more healthcare services upon becoming Medicare eligible than those who have had health insurance before reaching age sixty-five. Given those facts, we felt that we had to find some way to improve care for the population of our service area who suffer with one or multiple chronic diseases. We worried about Pay for Performance – a lot! With an avalanche of patients having one or multiple chronic diseases being our market for years to come, how were we to show progress with outcomes? Remotely monitoring the vital signs of our patients seemed worth a try so we started with thirty monitors in early 2006. We quickly decided to expand the program to monitor patients based on need, not diagnosis. We have even monitored Alzheimer's patients with good results. We continue to provide our patients with monitors based on need rather than diagnosis and feel that this policy has been a very successful one for our patients and HHP.

If a patient is monitored for only one day, we count that patient in our telehealth group. Also, we count every rehospitalization for any reason. This means that the rehospitalization of a patient who was bitten by a dog is counted just as the heart failure patient returned to the hospital due to a heart attack. We tried some more complex rules but decided in favor of simplicity.

While we were careful at first, growing slowly to make sure the program was really working and that it would not do great damage to our margins, in 2009 we doubled the number of patients being monitored and we plan to double again this year. Along the way the percentage of our patients who are classified

as having chronic diseases has grown from less than 30% to about 67%. We have morphed into a chronic disease management company, partly because of our market and partly because of our telehealth service.

REMINGTON: Your agency's data indicates non-telemonitored patients 30-day rehospitalization rates are 14.89% vs. telemonitored patients at 5.98% (*see reference note at end of article). With this wide variance, what can you suggest to your peers that have not yet embraced telemonitoring?

BAZZLE: First I should note that the rehospitalization rate of our non-monitored patients has dropped from around 20% three years ago to less than 15% in large part because we are now monitoring those patients having the greatest need. With regard to those who have not yet included this service as a part of their core business model, I would advise that such a service will not be fully successful unless senior management takes a passionate interest in its success. In addition, the clinicians who are charged with the duty of following patients' vital signs and with coaching them about adverse changes should be full time in this position – not part time. If an organization is not positioned to make this a separate specialty, patient telemonitoring may not be for them. Also, it's fair to point out that the learning curve is fairly long. Vital signs information is pretty black and white. But knowing what questions to ask and how to hear and interpret the answers is learned with time. We think it took two years for our team to get good at this and, of course, we are still learning.

Another point has to do with legal liability. If vital signs information is received indicating that a patient may be in distress, that information must be acted upon quickly, not when someone finishes with another task or returns from lunch. And we think it important to monitor our patients every day of the year including weekends and all holidays. When it comes to telehealth, our view is to really do it, or really don't.

REMINGTON: Your agency's clinicians are required to have "Critical Care Experience" – a level of expertise to monitor patients. Can you describe how this clinical model works?

BAZZLE: We have nurses and respiratory therapists working together in our "Vital Station" who case conference constantly which helps with sound decision making. We find that these clinicians (health coaches) need to have had a substantial amount of critical care experience so that they are comfortable making decisions on their own. Without this level of experience, clinicians are more likely to send a patient to an emergency room than to help them work through their health issue and this defeats the purpose of the telehealth service. However, it's important that health coaches have the self confidence necessary to advise a patient to go to a hospital if that is warranted. Also, telehealth clinicians MUST gain the respect of field clinicians or the program will not likely be successful. Some field clinicians may view telehealth as an intrusion into their own area of expertise. Unless they have a lot of respect for the Vital Station clinicians, expect a lot of "push back."

REMINGTON: Health industry studies indicate 40% of the reasons for rehospitalizations are related to medication management and compliance. Coupled with telemonitoring, what other tools and communication methods are included to focus on optimal medication compliance and management?

BAZZLE: Our process begins with the discharge of the patient from a hospital to our service. We have paid a lot of attention to transition procedures in order to learn as much about the patient as possible before they leave the hospital, if possible. In addition to field clinicians completing the admission OASIS, our telehealth clinicians interview patients in detail about their health concerns and about their medications. We help the patient understand the purposes of their medications and the importance of taking them on a timely basis. If we question some of the medications that the patient is taking, of course we contact their doctor to assure ourselves and the patient that the correct meds are taken at the correct times. Also, we make very liberal use of the telephone to talk to other care givers, patients and sometimes family members in order to have a well rounded understanding of the patient's needs.

This year we have added all patient medications to our data warehouse so that we can run various analyses to see what correlations we see between medications and rehospitalizations. We want to build some predictive models that can alert us to patients who have more rehospitalization risk than we might have otherwise understood. Tracking each patient's medications will play an important part in this process.

REMINGTON: Your agency's arsenal of data supporting over 11,000 completed telehealth episodes is impressive. What data elements are included in this information and how is this data used internally and externally?

BAZZLE: We have a data warehouse that gathers all information entered into our clinical system when a patient is admitted to our service along with all information generated by the telehealth data system. An "analysis tool" that we acquired several years ago provides us with the ability to track, compare, contrast and analyze this information in any way that we care to. As I mentioned earlier, the medication management component is now available to relate to all OASIS and telehealth system information.

While 11,000 completed episodes are a lot for a company of our size, we actually think about our service in terms of patient days. After all, we have contact with these patients daily including all weekends and holidays. If you are our patient and we see an alert on our computer screens on Christmas morning, you

(continued)

get a call from us. That means we have generated about 650,000 days of telehealth experience and data so far and we should have close to 1,000,000 patient days of data by the end of 2010. We believe in the adage that "if you can't measure it, you can't manage it." We don't always know what measures we want so we tend to look at a lot of relationships to see what they tell us – sometimes nothing but sometimes a lot.

REMINGTON: Explain how having a robust telemonitoring program combined with data positions your agency with referrals across the healthcare delivery system?

BAZZLE: If a physician, clinic or hospital is interested in rehospitalization rates, we can provide that information by disease, age, gender, income level (based on zip code areas), race, rural or urban location, case mix weight, hospital and physician. This allows our referral sources to better understand the reasons for patients' rehospitalizations or, better still, why they are not being rehospitalized. Again, "if you can't measure it, you can't manage it." With Washington focusing a spotlight on healthcare costs and preventable rehospitalizations, it looks like the data we produce and own will be useful to many types of organizations.

REMINGTON: Telehealth is a technology solution. Coupled with technology is taking a look at an agency from the inside out ... and the outside in. What overarching changes did your organization make to hit a rehospitalization rate of 5.98%?

BAZZLE: The three senior executives of our company examined the telehealth concept carefully, met with senior field management about the concept and then decided to MAKE IT HAPPEN. We tested, probed and questioned for a year and, very importantly, we routinely provided field management of our thirty-five offices with statistical information that proved the service's success. Without field management buy-in, the success of any new program has to be questioned.

It is important to keep in mind that telemonitoring is far more than a box that collects patient information. The process starts with a solid transition plan which gathers necessary information and fully engages the patient as soon as the referral is known to us. Telehealth clinicians conduct a full interview with the patient as they are being admitted to our service and this plays an important part in the process. Then quickly, within seventy-two hours, we install monitoring equipment in the patient's home and carefully instruct them in its use. This step is important! The whole process can fall apart if this process is not handled well. We even created a "how to" video so that installers throughout our branch system are on the same page. Then comes the part where daily information is received, interpreted and action steps are determined. It took three years before we were able to record the low level of rehospitalizations now being achieved. A stable, knowledgeable and experienced telehealth staff working as a team takes time to develop.

An additional step that we started last year is that of watching patients' vital signs trends before they are out of individual parameters and before there has been a system alert. For instance, if we see a patient's blood pressure or weight trending upward, we contact them before there is a problem and help them with a plan to reverse adverse trends. Obviously, if we help nip an adverse trend in the bud, the risk of rehospitalization drops.

We believe that we have just scratched the surface of telehealth knowledge. This year, working with at least two hospitals, we plan to pilot a program to prove the case that our program will reduce rehospitalizations of chronically ill non-home healthcare patients. Providing the right mix of nursing and therapy service along with telehealth makes a big difference; we know it does and have plenty of proof of the effectiveness of a full complement of services. However, we believe that many chronically ill people who are not home-bound can benefit from telehealth services.

Our newest project is that of developing a set of algorithms that will forecast patient rehospitalization risk. We already have a great deal of knowledge about which patients are at greatest risk. But there is a lot more about this subject to learn and we believe our data is rich enough to provide information that will help us drive rehospitalizations still lower. The senior management of HHP thinks about our telehealth service every day of every week. That's what works for us. **RR**

Reference Note:

The study published in the *New England Journal of Medicine* (NEJM). 360:14 (2009):1418-1428 titled: "Rehospitalizations Among Patients In The Medicare Fee-for-Service Program."

Results: Almost one fifth (19.6%) of the 11,855,702 Medicare beneficiaries who had been discharged from a hospital were rehospitalized within 30 days, and 34.0% were rehospitalized within 90 days; 67.1% of patients who had been discharged with medical conditions and 51.5% of those who had been discharged after surgical procedures were rehospitalized or died within the first year after discharge. In the case of 50.2% of the patients who were rehospitalized within 30 days after a medical discharge to the community, there was no bill for a visit to a physician's office between the time of discharge and rehospitalization. Among patients who were rehospitalized within 30 days after a surgical discharge, 70.5% were rehospitalized for a medical condition. We estimate that about 10% of rehospitalizations were likely to have been planned. The average stay of rehospitalized patients was 0.6 day longer than that of patients in the same diagnosis-related group whose most recent hospitalization had been at least 6 months previously. We estimate that the cost to Medicare of unplanned rehospitalizations in 2004 was $17.4 billion.

In comparison to the study in this article:

- The NEJM published study covered all Medicare patients readmitted to the hospital only about 9% of whom are homecare patients while all of this agency's patients are.
- All of the people in the NEJM published study had been discharged from a hospital before being readmitted while some of the agency's patients are referred to them by physicians and may not have been to a hospital recently.