Payers look for programs that can limit complications and costs

Clinical and financial opportunities abound in maternity DM

More than thirty percent of women who become pregnant each year encounter some form of complication that threatens the health of the mother or baby -- and inevitably leads to escalating costs. However, aware that many of these complications are preventable or manageable, employers and payers -- who have long spent a significant portion of their health care dollars on pregnancy-related costs -- are now showing unprecedented interest in maternity management programs.

In response, health plans and DM firms are doubling and redoubling their efforts to get pregnant women into care early; they are re-engineering their risk assessment processes to make the most out of new research; and in many cases non-traditional interventions are being employed to make sure that no opportunities are left untapped to assure a healthy delivery.

The chief aim of such efforts is to prevent preterm births, which typically lead to a cascade of health care interventions that cost many times the amount of a full-term delivery. In fact, the benefits of avoiding such complications are so valuable that many health care organizations are developing programs aimed at intervening with women even before their babies have been conceived.

New enhancements

In response to this changing market environment, Bloomfield, CT-based CIGNA HealthCare has just announced a major overhaul of its Healthy Pregnancies, Healthy Babies program that includes hefty enhancements to services as well as a more robust approach toward identification and enrollment. “We have a number of large national employers telling us for the last couple of years that they really want to do more in the area of healthy pregnancies -- more than just the standard healthy baby education programs than we have offered in the past,” explains David Ferriss, MD, medical director for CIGNA HealthCare.

Ferriss stresses that CIGNA is responding to a persistent problem across the country of premature births and low birth-weight babies. “A focus of this program as well is a reaching out to providers to inform them of data that exists supporting the use of 17-hydroxy progesterone caproate or 17-P,” a therapy that some studies suggest can be helpful in preventing pre-term delivery when administered to
women who are at high risk because they have experienced a previous pre-term delivery. “We are finalizing our communications materials now, but there will be an outreach to all of our contracted obstetricians across the country regarding this program, and in particular, the evidence supporting the use of 17-P.”

**Tiered incentives**

To reach pregnant women earlier, CIGNA has expanded its referral sources to include referrals from customer service, the disability area, and dental benefits, when customers have those services in place. Additionally, the organization has developed tiered incentives aimed at engaging women during the first trimester when there is optimal opportunity to impact outcomes, and then keeping them enrolled through delivery. The specific incentives offered are determined with the client organization, but the approach is designed to offer the greatest rewards to women who enroll early in their pregnancies, although participants do not actually receive the incentives until the program has been completed.

Another enhancement involves a new program that delivers targeted communications to women in their childbearing years. “This would include women who are not yet pregnant, and it consists of messaging regarding the importance of health prior to pregnancy,” explains Ferriss. “For example, [the program stresses] the importance of adequate intake of folic acid, not smoking, good nutrition, and exercise.”

**Risk assessment**

Upon enrollment in the program, women undergo a health risk assessment that stratifies them as low risk, moderate risk, or high risk. In the past CIGNA has routinely given pregnant women at high risk special attention through its specialty case management division, and this will continue. However, the new program offers additional interventions to women categorized as moderate risk or low risk.

Women in the low risk group, for example, receive preventive education and personal engagement from a nurse specialist upon enrollment, five months into their pregnancy, seven months into their pregnancy, and postpartum. Women at moderate risk receive preventive education plus monthly outreach targeted to their needs.

While the program is currently being piloted by a few large clients, CIGNA plans to make it available nationally on January 1, 2007. By that time the company intends to further streamline the risk assessment process so that members can complete the questionnaire online. Then, based on the responses provided, the system will automatically trigger nurses to contact members by phone for further consultation.

**Multiple gestations on the rise**

While Richmond, VA-based Health Management Corporation (HMC) has offered maternity management since the early 1980s, administrators there have also seen an up-tick in demand for services in the last two years. “With all the fertility drugs out there, we are seeing a lot more multiple gestations than in the past, and very few triplets get to full term,” explains Donna Snow, staff VP of Disease Management at HMC. “[Payers] realize that one preterm baby can set them back $2 million, so while they need to manage chronically ill patients,
they also need to manage pregnant moms.”

Currently, HMC is actively managing more than 6,000 pregnant women in its Baby Benefits program, which assigns a primary nurse to all women who are identified as having modifiable risk factors. “That nurse is going to stay with the member through the whole pregnancy, and she will contact her daily, weekly, or monthly, depending on risk severity,” notes Snow, emphasizing that the nurse’s job is to take advantage of any opportunity to insure a full-term pregnancy.

If a woman has been assigned to bed rest, for example, the nurse may need to arrange for child care assistance if there are toddlers in the house. Alternatively, a woman who is experiencing pregnancy-induced hypertension will need to have a BP cuff at home so she can monitor her own BP. “We are truly managing the individual,” stresses Snow. “We are educating her about the risk factors, educating her about what we can do and what health benefits she has, and then assisting her in adhering to her physician’s plan of care.”

Other available interventions include referral to a dietitian for nutritional guidance, or referral to a mental health specialist if there are indications of depression, anxiety, or any other behavioral health issues that could interfere with the pregnancy. A pharmacist may also be called in for consultation if there are issues with adherence or potential adverse drug interactions involved.

**Pre-conception intervention**

An evaluation conducted in 2003, comparing a group of pregnant women managed in the Baby Benefits program with a matched group receiving usual care, suggests that the approach is cost-effective, delivering a return of $3.80 for every dollar invested in the program. However, HMC administrators are striving to achieve a greater impact by reaching more eligible women and engaging them earlier in the program. Consequently, the organization plans to aggressively market a pre-conception program targeted at women who are planning future pregnancies.

The promotion for this program seeks to attract inbound calls from women who are thinking about becoming pregnant. “We will go over an assessment with these women that covers their lifestyle choices and what is going on that might impact a pregnancy,” explains Snow. Immediately after the assessment, HMC mails educational materials on pregnancy planning to the member. “Then six weeks after we have spoken with the member, we will call her back to see if she is pregnant, and if she is pregnant, we will enroll her in our maternity management program.”

**Physician incentives**

Silver Spring, MD-based APS Healthcare has also established a strong focus on reaching pregnant members while they are still in their first trimester.

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**Birth complications: An early warning sign for heart disease?**

It is routine practice to closely monitor women who experience pregnancy complications, but such follow-up typically concludes upon delivery. However, a new study suggests that pregnancy-related complications such as preeclampsia, gestational diabetes, and preterm birth are, in fact, an early warning sign of impending heart disease. And both patients and health care organizations stand to gain with prompt action to mitigate risk.

These findings come from investigators at Duke University who analyzed data from the Perinatal Health Services Outcomes Database, which includes all women who gave birth at Duke between 1979 and 2005, and the Duke Information System for Cardiovascular Care, which includes all patients who have received a cardiac catheterization since 1969.

By comparing outcomes from women who appeared in both databases, the researchers found that pregnancy complications added a 1.6-fold risk for the development of cardiovascular disease. Pregnancy complications also increased mortality risk more than two-fold. Additionally, the researchers found that smoking more than doubled the risk of all-cause death, it nearly tripled the risk of cardiac death, and it nearly doubled the risk of developing coronary artery disease.

The findings strongly suggest that providers have an opportunity to short-circuit the course of heart disease in women who experience these birth complications. “What happens is a woman has preeclampsia, gestational diabetes, or a preterm birth, and then goes for an OB/GYN checkup, and everything is fine after delivery,” notes Mimi Biswas, MD, the Duke cardiologist who conducted the analyses. “That would be a great time to take the woman aside, and to go through a cardiac risk factor evaluation with her. This could include everything from going through her family history and really checking her BP and cholesterol, to measuring her abdominal girth.”

Biswas emphasizes that providers should then follow the women more closely, even at this early age, and get on top of treating risk factors such as early hypertension, metabolic syndrome, and diabetes. “The women [in the analyses] were very young -- in their twenties -- at delivery, and they were getting MIs and they were dying in their forties,” she says. “Compared to the population as a whole, these women are having heart attacks and dying much younger.”

In light of these findings, Duke is taking steps to implement organizational changes that will trigger appropriate intervention in women who experience these birth complications. “OB/GYNs are really busy doing other things, but [we want to develop] some really easy guidelines for them,” says Biswas. “Everyone has a postpartum follow-up. And if they have any of these red flags, then they should get a quick risk factor evaluation either by the OB/GYN or they should get referred to get one.”
Program developers do this by working with clients to promote the organization’s Healthy Additions program to eligible members, and by establishing incentive programs for participation. Additionally, the organization has had good success nurturing physician referrals into program by implementing provider incentives as well.

“We have a very large customer in Hawaii, and we have had huge success with giving physicians frequent flyer miles for making referrals into the program,” explains Kristin Blasko, VP of product development at APS Healthcare. “On average, physicians are spending 9 to 11 minutes with any given patient, so they have been very open to having our health coaches out in Hawaii meet with them and explain the program. And they have certainly been enticed by the frequent flyer miles program that we have put in place.”

**Traditional and non-traditional risk factors**

Like the programs offered by CIGNA and HMC, APS’s program begins with an outbound phone call and risk assessment questionnaire. During this process, nurses look for the traditional risk factors associated with pregnancy such as high BP and diabetes, but they also look for socioeconomic and psychosocial risk factors, stresses Blasko. “We know that someone who is just trying to get food on the table is not going to be focused on their pregnancy,” she says. “And given that we have a lot of experience not only with health, wellness, and DM, but also our core [business] in behavioral health, we really have a lot of experience in looking for and finding people with anxiety issues, or depression, and managing those behavioral co-morbidities so that we can get our arms around them and have a positive medical outcome.”

Women with risk factors receive ongoing education and support from their health coach and referrals back to their physician as necessary, and every point of contact is documented, adds Blasko. “We reassess the situation, comparing the data that we have collected to the baseline, and we make sure we are following-up with the physician,” she says. “We send out [educational information], and establish plans for emergency situations so that we can really mitigate those risks and get these women to a healthy pregnancy.”

**Positive outcomes**

Women categorized as low risk typically receive three or four calls over the course of their pregnancy, at which point they are reassessed for any new risk factors or complications. A final call from the health coach is typically initiated 2-4 weeks following delivery. “We assess the mother’s condition, confirm that they have established an appointment for follow-up with their physician and an initial appointment for their baby with a pediatrician, and discuss any issues around breast feeding or healing, if they have had a cesarean delivery,” adds Blasko.

Looking at APS’s entire book of business, Blasko notes that the program consistently delivers an ROI of $3 for every $1 invested, and this is reflected in clinical outcomes as well, with 92.5% of women enrolled in the program delivering full-term versus a national average of 87.9%. Additionally, the cesarean rate is less than half the national average, and surveys suggest that the program satisfaction rate is greater than 95%.

**Identify & engage**

Going forward, APS has recently developed informatics tools designed to identify any gaps in care through claims analysis, and members are empowered to share that data with their physicians. All of these enhancements are important, but like Ferris and Snow, Blasko emphasizes that you cannot underestimate the importance of early identification and engagement. “We have continued to evolve our incentive programs to encourage participation because, although we find a fair number of participants through claims, the primary method of identification is through physician and self-referrals.”

**Editorial note:** More information about the maternity management programs discussed in this article can be accessed through the following Web addresses: www.apshealthcare.com, www.choosehmc.com, and www.cigna.com.

**Medicaid plan turns its attention to chronic care**

**Generous provider incentives deliver dramatic returns**

Long before the phrase “pay-for-performance” came into vogue, California-based Inland Empire Health Plan (IEHP) was experimenting with provider-focused incentives to boost performance in targeted areas, such as immunizations and well-child visits. However, now the Medicaid health plan has expanded this approach to include key quality indicators in the management of chronic disease and, in some cases, the plan is even rewarding specific clinical outcomes.

It’s an unusual program because the incentives offered to providers are substantial, costing the plan upwards of $12 million annually. However, the approach has been highly successful, boosting HEDIS scores and other performance measures to enviable levels while at the same time earning the loyalty of participating providers.
There have been challenges and complications along the way -- and there are areas where even generous incentives have failed to make a sizable difference in care quality. But as plan administrators revealed recently at a conference focused on pay-for-performance strategies sponsored by the Princeton, NJ-based Center for Health Care Strategies, IEHP has established a clear roadmap for success, and it is now pushing the envelope into the DM arena to see how much care improvement it can accomplish with a system of rewards.

**Missed opportunities**

Administrators began looking at incentives as a way to impact provider behavior almost from the health plan’s inception in 1996, and they established specific goals that remain in effect even as the program has evolved to include chronic care management. “One of the biggest things that I think most of us are aware of are missed opportunities around immunizations, well child visits, pap smears, and other preventive services,” explains Bradley Gilbert, MD, IEHP’s medical director. “When members come in for an acute or a semi-acute problem, we are not as necessarily organized as we could be to provide those other preventive services when they can be done appropriately.”

Consequently, the program is intended to motivate physicians to provide targeted services, and to make sure that incentive funds go to physicians specifically to provide these services. **(See Figure 1.)** Additionally, Gilbert notes that a third goal of the program is to bind physicians to the health plan. “Although physicians have a relationship with their IPA, we wanted them to be getting the check from IEHP, and we wanted that check to be a significant portion of their income,” he adds, noting that IEHP’s current pay for performance program provides, on average, 15% to 20% of a physician’s income, and it can provide as much as 40% of the physician’s income.

**PIP program evolves**

The health plan’s physician incentive program (PIP) program began modestly in 1997 with direct payments to physicians to provide immunizations from birth to age 2, but it was expanded in 2002 to include payments for well-child visits, adult physicals, and especially prenatal services. “We were really trying to get our OB/GYNs to [engage] patients early in their pregnancy, so we stratified the payments for that,” notes Gilbert, emphasizing that the incentives are in addition to the regular global fee for prenatal services. **(See Figure 2.)** “Our goals with this were for the OB/GYNs to be very cognizant of access to care early, so that they would make appointments quickly and bring the members in for care.”

Incentives in the amount of $25 were added in 2001 for Pap tests and chlamydia screenings, and in 2003, IEHP added a diabetes component to the program whereby physicians were given $25 each to perform HbA1c tests, LDL screening, retinal exams, and foot exams on their diabetic patients.

**HEDIS-centered approach**

The payments were producing a positive impact on targeted services, but in 2004 IEHP revamped the

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**Figure 1: Goals**

- Motivate Physicians to Provide Services
  - Outreach to assigned Members
  - ‘Capture’ when Member in office
  - Report the event
- Increase Physician Reimbursement
  - Beyond Capitation payments
  - Pediatricians
  - OB/Gyns
- ‘Bind’ Physicians to IEHP
  - Direct Payments from IEHP
  - Significant Percent of Income

**Figure 2: PIP: The Physician Incentive Program**

- Perinatal Services Component
  - Designed to ensure that all IEHP Members receive timely prenatal and postpartum care
  - Reimbursement Schedule
    - $200 if date of service for initial visit in the 1st trimester
    - $100 if the 2nd trimester
    - $50 if in the 3rd trimester
    - $50 for a postpartum exam within 8 weeks of delivery

**Figure 3: PIP: Pay For Performance**

- Implemented a $100 bonus for
  - Completion of 6 well child visits by 15 months
  - Submission of a complete immunization record prior to age 2
- Significantly increased perinatal payments
- Implemented outcomes bonuses for Diabetes:
  - $50 For HgbA1c of 7.0 or less
  - $50 For LDL of 100 or less
- Added Asthma Component (9/1/05)
  - $25 for asthma progress note on-line
  - $20 for paper

Source: Center for Health Care Strategies, Inc.
program in response to a significant increase in emphasis on HEDIS scores by the Department of Health Services in California. “They are now assigning default membership based on HEDIS scores, and HEDIS scores have become a major component of NCQA accreditation scoring,” notes Gilbert, “so we have re-named the program “Pay for Performance” and made it very HEDIS-centered.”

This shift in focus prompted IEHP to implement a series of generous bonus payments based on evidence of comprehensive care. (Figure 3 on page 41.) For example, physicians receive bonus payments in the amount of $100 for the completion of six well-child visits by 15 months of age, and also for the submission of a complete immunization record. Gilbert notes that the immunization bonuses, in particular, have turned into a great source of data for the plan, which is then able to enter the information into a database. “Physicians receive the bonus for submitting the immunization cards before age two, and this has become a major motivator for our physicians to get members caught up on their immunizations and get the form completed.”

The bonuses for prenatal care were also substantially increased to $400 for appointments in the first trimester, $300 for appointments in the second trimester, and $200 for appointments in the third trimester and for postpartum care. “Where we have had the biggest impact is we have made our OB/GYNs work with their referring providers, which are generally our PCPs, so there is this very strong link that has developed between the OB/GYNs in the community and the individuals who are often doing the pregnancy tests, so that the members are referred [quickly] to the OB/GYN for care,” says Gilbert. “Also, secondarily, the OB/GYNs have gotten very good at facilitating a quick entrance into care, meaning appointment availability.”

**Chronic care management**

In the chronic care arena, IEHP initiated bonus payments for diabetes-related outcomes: $50 for HbA1c results of 7 or less, and $50 for LDL readings of 100 or less. The most recent addition to the program is an asthma component where physicians fill out an asthma progress note. It is directly based on the national guidelines for asthma care in terms of what questions you should ask, components of the physical exam, medication usage, and assessment of the member’s disease status.

“It really directs them to follow the guidelines,” notes Gilbert, adding that physicians submit the form via the Internet, and get paid for it. “We have great uptake for this. It has only been in place since September 1, 2005 and we’ve already got 200 doctors participating with it. We think it will have a major impact on our asthma care scores.”

**Dramatic improvement**

The pay for performance program has been a stunning success, boosting HEDIS scores substantially in most of the areas targeted. Child immunization rates, well-child visits in the first 15 months, and prenatal services are way up, putting IEHP in the 90th percentile for a Medicaid plan on all three benchmarks. (See Figure 4.) Further, cervical cancer screening and chlamydia screenings have improved, although not as substantially. (See Figure 5 on page 43.) And all facets of diabetes care that have been linked with incentives have improved significantly with the exception of retinal eye exams -- an anomaly that analysts are looking into to see if improvements can be made. (See Figure 6 on page 43.)

With the success of the provider incentives, IEHP has eliminated almost all member-focused incentives,
although the health plan still sends out mail-based reminders for various preventive services.

“What I have found works incredibly well is that immediate financial feedback -- that immediate positive reinforcement for providing a service,” stresses Gilbert, noting that most of IEHP’s physicians are solo practitioners who do not have access to sophisticated computer-based registries or other decision support resources.

Further, while analysis of the program has thus far focused largely on preventive services for which an ROI is difficult to calculate, Gilbert believes the program’s newer components relating to diabetes and asthma may ultimately offer the best opportunity for measurable financial results.

A broad approach is key

One of the chief reasons behind the success of IEHP’s physician incentive approach may be that it has designed a system in which all participating providers can benefit. It is a critical aspect that is missing from many pay for performance programs, according to Meredith Rosenthal, PhD, a health economist at Harvard’s School of Public Health who has done extensive research into pay for performance methodologies. She notes that many of these programs fail to boost overall health plan performance because the incentive dollars typically go to those providers who are already performing at a high level.

While it is obviously important for a health plan to maintain optimal relationships with its best providers, Rosenthal maintains that a broader approach is needed to achieve significant improvement. “There is fairly good evidence that that people do behave as we expect them to in economic models, but basic economics would tell you that for every provider there needs to be some incremental benefit to improving,” she explains. “That would mean, in the very simplest form, you would want a payment system that rewards every physician for getting as many patients as they could treated in a way that was consistent with quality measures.”

Potential consequences

Another important factor to consider when designing an incentive program is determining how much of an incentive is appropriate. Rosenthal suggests that the size of the incentive needs to be consistent with what you are asking physicians to do. “The notion of making sure that a population of diabetic patients receives routine HbA1c testing or cholesterol screening shouldn’t conflict with what physicians think their role is, but having systems in place to track people who aren’t immediately in front of you in your office may well be something new,” she stresses, noting that such a change may require technical assistance as well as financial incentives. “It has to do with what is the true financial cost of improvement.”
The biggest issue of concern with any system of provider incentives -- and particularly in cases where clinical outcomes are rewarded -- is that providers may avoid sicker patients in order to keep their performance measures high. It’s a factor that administrators at IEHP are keeping close tabs on in relation to the plan’s bonus payments for clinical outcomes related to diabetes care. And Rosenthal maintains that organizations interested in developing pay for performance programs need to consider this potential consequence. “My subjective opinion is that pay for performance programs offer an incremental improvement over what we had before,” she notes. “There are lots of ways to use them to make things worse, however, and it takes careful forethought about what the downsides might be as well as putting as many protections in place as possible.”

Reference


Noninvasive tests bolster treatment decisions
Impedence cardiography: A new tool in the treatment of hypertension

Options for the treatment of hypertension are abundant, but knowing which drug or combination of drugs will be most efficacious is, in most cases, largely a matter of trial and error. This is one of the reasons why only about one-third of patients diagnosed with hypertension have their blood pressure under adequate control. And it’s a big problem because high BP is a major risk factor for stroke, heart attack, heart failure, and kidney disease.

However, there is convincing new evidence that a process referred to as impedence cardiography, or ICG, can give physicians the information they need to prescribe treatments that have the best chance of addressing the underlying cause of hypertension. In the past, hemodynamic monitoring could only be accomplished through invasive tests typically done in a hospital setting, but technology is now available that enables physicians to gather this information through non-invasive means in the outpatient setting.

Reimbursement for ICG testing continues to be an issue -- particularly with regards to patients who are presenting with hypertension for the first time, but a growing number of community-based physicians are finding ways to take advantage of ICG technology to guide their treatment decisions.

New data boosts ICG

The value of hemodynamic monitoring in the treatment of mild to moderate hypertension has been bolstered in recent months by the results of the CONTROL (Consideration of Noninvasive Hemodynamic Monitoring To Target Reduction of Blood Pressure Levels) trial, a randomized controlled study in which family practice and internal medicine physicians from 11 centers followed 164 patients on one or more antihypertensive medications over a period of 14 weeks.1 Half of the patients received treatment guided by non-invasive hemodynamic monitoring, and the other half received usual care.

The results indicate that the patients who underwent hemodynamic monitoring had 8mm Hg greater systolic BP reduction and 7 mm Hg greater diastolic BP reduction than patients receiving usual care. When added to previous data showing the value of hemodynamic monitoring in patients with more severe hypertension, advocates maintain that there is a strong argument for expanded use of ICG testing early on in the disease process.2

“It has been used on over 4 million patients since the technology was introduced in 1998, so it is not unheard of,” explains Paul Jansen, VP of clinical and market development at CardioDynamics, the San Diego, CA-based company that developed the BioZ ICG technology used in both studies. “But [the CONTROL trial] is also the type of study that people have been waiting for to really determine whether the technology can conclusively help them in the treatment of high BP.”

Zeroing in on the cause

Undergoing measurement with the BioZ device is much like undergoing an EKG, notes Jansen. However, he points out that where the EKG measures the electrical function of the heart, ICG essentially gives physicians a better look at the overall function of the heart. “We put a few sensors on either side of the neck and a few on the chest, we emit a small electrical current, and that current finds the path of least resistance which is in the artery leading away from the heart,” he explains, “so as blood pumps into the aorta, there are impedence changes in the chest, and our device measures and processes those changes to calculate parameters that physicians understand.”

These parameters include how much blood is pumping from the heart -- cardiac output, the amount of force that the heart is pumping against or vascular resistance, and how much fluid is in the chest -- thoracic fluid content. With this information, physicians can zero in on what is actually causing the hypertension and prescribe accordingly, notes Jansen. “What is happening today is that physicians have no ability to assess this information by physical exam, so they
basically just guess. They use a form of trial and error that they call the step method of therapy, which basically means try this, and if that doesn’t work, then try that,” he stresses. “Instead, what our device allows them to do is determine what is causing the BP to be elevated, and then pick a drug based on that.”

For example, Jansen notes that if a patient has high vascular resistance, they should be placed on a drug that reduces resistance such as an ACE inhibitor, an angiotensin receptor blocker, or a calcium channel blocker. Alternatively, patients with a high cardiac output would more likely benefit from a beta blocker. (See Figure 1.)

**A patient tool**

Physicians note that the technology is not only useful in helping them to make better prescribing decisions, it also helps them illustrate to their patients why they need to take their medicines. “When you begin to talk to a patient about taking a life-long drug therapy for a disease that is for most patients asymptomatic, it is very helpful to show them what the target is,” explains Marc Silver, MD, clinical professor and chairman of the Department of Medicine and director of the Heart Failure Institute at Advocate Christ Medical Center in Oak Lawn, IL. “You can show them what their arterial pressure is, you can show them what their systemic vascular resistance is, and have them understand why we are trying to lower that -- that it is something that will prevent heart failure, kidney failure, stroke, and blindness.”

When discussing treatment with their patients, physicians often use the computer printout/status report that the BioZ device produces following a patient evaluation. (See Figure 2.) This report highlights what parameters need to be altered to lower BP, and it includes space where physicians can add information regarding what medicines the patient is taking.

**Future potential**

Today, both Medicare and commercial payers largely restrict reimbursement for ICG testing to more complex cases, where patients are on at least three different BP drugs. However, with the results of the CONTROL trial just published, Jansen is hopeful that these restrictions will be liberalized, enabling many more physicians to use such testing earlier in the disease process. “We have always believed, and our customers believe, that it is helpful in patients who are on one or two drugs, and their BP is still not under control,” he stresses.

Using hemodynamic monitoring for the treatment of hypertension is, in fact, a relatively new application. The information gleaned from such an evaluation is much more widely used in the care of heart failure patients, where many of the same parameters can help physicians monitor disease status and assess whether current therapy is efficacious. (See Figure 3.) Additionally, studies have shown that ICG testing can help clinicians accurately assess the underlying causes of shortness of breath.
breath. A lot of patients have both cardiac disease and pulmonary disease, and when they come to the ER, clinicians don’t know which disease is getting worse at that moment,” explains Jansen. “Our device helps to tell them whether the patient has normal cardiac function so they can rule out a cardiac cause.”

While ICG’s usefulness in the treatment of heart failure and shortness of breath is well validated, Jansen believes the technology’s greatest potential is in the treatment of hypertension. “It is more difficult to get private insurance carriers to see the immediate impact of improving BP control because, in most cases, it is months or years away from developing into a more serious disease or event, but nonetheless we believe it will improve long-term outcomes, and hopefully payers will see that and start to cover it.”

Editorial note: For more information about CardioDynamics, visit the organization’s web address at www.cdic.com.

References


Figure 3: Hemodynamics in Heart Failure

![Hemodynamics in Heart Failure Diagram]

Intervention produces sustained improvements

Using performance feedback to change provider behavior

Although physicians are loathe to admit it, data suggest a majority of them are impacted by what researchers refer to as clinical inertia -- a failure to initiate or intensify therapy when it is clearly indicated. In research on the subject, Lawrence Phillips, MD, a professor of medicine in the Division of Endocrinology at Emory University School of Medicine in Atlanta, GA, notes that the problem is particularly apparent in the treatment of hypertension, elevated cholesterol, and diabetes -- largely asymptomatic diseases for which patients are treated to goal less than half the time.1

What accounts for these huge gaps in care? There are numerous contributing factors ranging from training deficiencies and a tendency for clinicians to over-estimate their own adherence to standardized care to, perhaps, a bias in favor of conservative treatment -- even when long-standing guidelines recommend otherwise. Regardless of the underlying causes, however, successful remedies must focus squarely on changing provider behavior.

It’s a difficult task under the best of circumstances, but Phillips and colleagues at Emory believe they have devised a cost-effective intervention that can address clinical inertia with respect to all of these chronic conditions. In fact, they have data to show that the approach can boost HbA1c scores -- a prime indicator of care quality for what is arguably the toughest of the three diseases to bring under control.

Focusing on provider behavior

Once Phillips and colleagues identified the existence of clinical inertia -- a topic Phillips reviews extensively, along with epidemiological evidence, in a 2001 article in the Annals of Internal Medicine1 -- they then combed through the literature on provider behavior to determine what approaches have been successful at altering practice patterns.

“If you want to get physicians to do something, and all you do is give a lecture, they nod their heads, but they don’t walk away with enough impact to change what they do,” notes Phillips. However, he points to two approaches that have shown promise in changing provider behavior: a system of reminders and performance feedback.

Phillips emphasizes that in both instances, to be effective the information must be relevant, individualized, and timely. “You can’t just send out a reminder that says when your diabetic patients have high sugars, do something about it,” he stresses. “It needs to be specific to that patient, and it needs to be given at a time so that the intervention has a chance of being effective.”
Computerized reminders

Having identified two strategies that showed promise in changing provider behavior, Phillips and colleagues then devised interventions based on each approach and compared them to usual care among an urban population of diabetic patients receiving primary care through a public hospital system in Atlanta. The physicians included 345 residents in training who were randomized to a control group or to one of three intervention groups.

One group of providers received computerized reminders, indicating when therapy needed to be changed or intensified. “When patients came in, they had a glucose check from a research assistant who then plugged the findings into a computer,” explains Phillips. “The computer then looked to see what medicines the patient had been using, went to an algorithm that considered what the glucose was today and what the past record of glucose had been, and came up with a reminder from the algorithm as to how much of a change was needed.”

Provider feedback

Providers randomized to the “feedback” group regularly received graphic report cards, depicting their performance with regards to diabetic patients. Further, the report cards were given to the providers every two weeks within the context of a face-to-face consultation with an endocrinologist. Scripts were developed for the specialists providing the feedback so that they would, essentially, prompt the residents to state what they should do in order to improve glucose control, explains Phillips.

“This format was based on the educational principle that you are more likely to remember something if you read it than if you hear it, and if you say it more than if you read it,” he adds. Some of the residents reacted defensively to the feedback, but anonymous questionnaires completed by the participants suggest that most were appreciative of the input. Finally, residents in the third intervention group received both the computerized reminders and the feedback.

Poor performance at baseline

In measuring performance, investigators looked only at those patients with high glucose readings (exceeding 150 mg/dl), and they categorized physician performance in one of three ways: the providers did nothing to intensify therapy when it was clinically indicated, they did anything to intensify therapy, or the action taken was enough to meet recommended standards of care.

Astoundingly, baseline measurements taken before implementation of any of the interventions showed that the residents did anything only 35% of the time, and did enough intensification to meet recommended care in only 21% of cases. Phillips notes that such poor statistics are, unfortunately, not uncommon with respect to BP, cholesterol and glucose control. “What is hard to understand -- not just in our study, but across the country -- is what goes on in those sessions where nothing happens,” he stresses. “We say it goes by halves: Half of high BP is diagnosed, half of the diagnosed are treated, and half of those treated are treated enough. What are the physicians doing? These are doctors who think well of themselves, and the patients think well of their doctors because they keep going back.”

Further, Phillips points out that while physician performance has improved in recent years with respect to hypertension and high cholesterol, some studies suggest that fewer diabetics are being treated to goal than in the past.

Sustained improvement?

Measurements taken following the first year of intervention indicate that provider behavior improved with regards to intensification of therapy in all groups being studied, but it improved the most in the two groups receiving performance feedback. However, by the end of the third year of the study, provider behavior in the reminders-only and control groups had slipped back to baseline levels, while significant improvements were sustained in the two groups receiving provider feedback. Further, investigators found that the improvements in

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provider behavior -- resulting in more frequent intensification of therapy -- produced improved glucose control as well.

In light of the strong results produced by the provider-feedback approach, the hospital system has implemented the intervention as a matter of routine care, and cost-benefit analyses are underway, although Phillips notes that administrators clearly believe that approach will deliver financial dividends.

What is less clear is why the computerized reminders failed to deliver sustained improvements in provider behavior, as this type of approach has shown promise in other studies. Phillips suggests the novelty of the reminders eventually wore off. “Lacking the capability to force a response to the reminders, I have a feeling that after a while -- even though they were right on top of the chart, and even though we designed them to be easy to read and noticeable -- they were ignored, whereas you cannot escape feedback on performance,” stresses Phillips. “Someone is going to show up every two weeks.”

‘Immune to gaming’

Another benefit of the provider-feedback intervention -- at least as it is designed here -- is that by focusing only on those patients who have high glucose levels, it prevents physicians from getting around the system. “It’s a strategy that is immune to gaming because everybody is going to have patients every once in a while with high sugars, and what do you do? You can’t give everyone with high sugars a bus ticket to Alabama,” comments Phillips. “The providers know that every two weeks we are going to come in and give them some feedback on their care.”

Given the success of the provider-feedback intervention in a public hospital setting where most of the patients are on Medicaid and/or Medicare, Phillips is getting calls from other organizations interested in implementing the same type of approach in their settings. In fact, a randomized controlled trial of the approach in a large managed care organization is in the planning stages.

Reference