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IMPROVING PATIENT CARE THROUGH INCREASED PRACTICE EFFICIENCY

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*May 2006*

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## Expert Foresaw Rise of the Internet in Medicine

In an interview seven years ago, Tom Ferguson, MD, predicted that refusing to use the Internet would not be an option for physicians. At the time, his prediction might have seemed unusual, at least for some physicians. But, of course, he was correct. A Harris Interactive Survey showed that 98% of graduating medical students and 90% of practicing physicians have Internet access today.

In his career, Ferguson had an uncanny ability to predict the future accurately. He articulated the concept of health care consumers using the Internet to educate themselves. He coined the terms “e-patients” and “disease tribes,” meaning patients who search the Web for disease-specific information and discuss their conditions in chat rooms.

Ferguson established a journal, *Medical Self-Care*, and served as its editor from 1975 to 1989. In 1998, he became editor and publisher of *The Ferguson Report*, the newsletter of consumer informatics and online health.

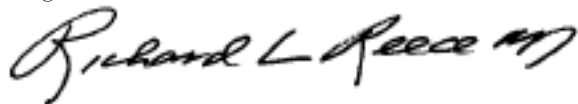
He was a senior associate at the Center for Clinical Computing, a research institution at the Harvard Medical School. He also served as an associate faculty member at the Texas Health Science Center and at the University of Arkansas Medical Sciences Center, and was a senior research fellow at the Pew Internet and American Life Project.

Perhaps earlier than many others, Ferguson recognized that health care consumers are willing to do their own research on the Internet. “The Web provides an environment in which some patients can play a role that differs from their traditional role,” Ferguson said in an interview in this newsletter in 1999. “The online revolution is changing the roles of both physicians and patients. Patients spend a good portion of their time away from the physician’s office, caring for themselves. When patients are motivated, they are willing to put almost endless time and energy into being a resource for their own care.

“Online technology has made it possible for people to gain access to disease support groups and to research information about their diseases,” he said. “Patient knowledge is different from physician knowledge. Depending on area of specialization, a specialist might have to stay current on 200, 300, or 400 medical conditions. A general practitioner might have to keep up with 600. Patients have to know about only one disease: their own.”

When asked what online patient self-education meant for physicians, Ferguson said, “Physicians who live in high-tech urban areas and want to treat well-educated young adults will have to be proficient on the Internet or they won’t have any patients left in five years.”

Sadly, Ferguson died last month in Little Rock, Arkansas, at the age of 62 of a long-term illness.



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# Treatment Options for GERD

By Sharon L. Cross, PhD

**A**s any parent knows, almost all infants spit up occasionally, and usually at the most inconvenient times. This gastroesophageal reflux (GER) is a normal part of childhood, and most children outgrow it. When GER becomes chronic and produces worrisome symptoms such as pain or recurrent vomiting, however, it is termed gastroesophageal reflux disease (GERD) and may require treatment.

Parents and physicians do not always recognize GERD in children. "GERD is both underdiagnosed and undertreated in children because of a lack of communication about the significance of GERD symptoms among children, their parents, and their physicians," observes David A. Gremse, MD, professor and chair of Pediatrics at the University of Nevada School of Medicine in Las Vegas.

## An Underdiagnosed Condition

Susan R. Orenstein, MD, professor of Pediatric Gastroenterology at the University of Pittsburgh School of Medicine, concurs that GERD is often underdiagnosed, particularly in children who are unable to describe their symptoms. "Abdominal pain due to GERD may often be dismissed as a nervous stomach rather than a potentially treatable medical condition," she says. "But on the other hand, GERD may be over-diagnosed in infants who have physiologic regurgitation ("happy spitters"), in infants who are fussy and overfed, or even in infants with other diseases, such as volvulus or brain tumor."

Once GERD is diagnosed, the next question is whether it should be treated, or whether a wait-and-see approach should be used. A recent study helped clarify this issue by providing evidence that at least some children do not grow out of GERD (Orenstein et al., *Am J Gastroenterol* 2006;101:628). An analysis of 19 children who were randomized to the placebo arm of a GERD treatment trial found that while symptoms improved in most of these children, esophageal histology remained abnormal.

Such alterations in the esophagus may predispose individuals to serious GERD-related complications, including strictures, Barrett's esophagus, and esophageal adenocarcinoma. "Patients with GERD throughout childhood may be at greater risk of developing these complications due to the increased number of years that the esophagus may be exposed to acid damage," explains Gremse. Other conditions that may be related to pediatric GERD include weight loss or poor weight gain, dental caries, and pulmonary complications ranging from asthma to recurrent pneumonia.

## Treatment Guidelines

In 2001, the North American Society of Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) published guidelines concerning the treatment of pediatric GER (available at [www.cdhnf.org](http://www.cdhnf.org)). The American Academy of Pediatrics has endorsed these recommendations. "The guidelines were prepared using a symptom-based approach," comments Colin

Rudolph, MD, PhD, professor of Pediatrics at the Medical College of Wisconsin in Milwaukee. Since then, a number of clinical studies involving the treatment of GERD in children have been published. In recognition of this new information, the NASPGHAN guidelines are currently being revised and updated under Rudolph's direction.

The current NASPGHAN guidelines list several conditions that may benefit from GERD treatment, including recurrent vomiting in infants, heartburn in children or adolescents, and children of any age with esophagitis. Anti-reflux therapy may also be appropriate for patients with apnea, apparent life-threatening events (such as choking), or asthma. The association between GERD and these conditions has not been fully clarified, but the frequency at which they occur concurrently suggests that they may be linked.

As with other pediatric conditions, one difficulty in providing guidelines for the treatment of GER is the relative dearth of controlled clinical trials of GER therapies in children. In some cases, findings are extrapolated from adult trials. Rudolph highlights extraesophageal symptoms and long-term safety as two areas that would benefit from further study in children.

## Lifestyle Management

When treating a child suffering from GERD symptoms, the first step usually involves changing the child's diet, feeding pattern, or position after feedings or during sleep. For infants

*(Continued on page 4)*

**"Patients with GERD throughout childhood may be at increased risk of developing complications," says David A. Gremse, MD, University of Nevada School of Medicine.**

(Continued from page 3)

with allergies to a specific ingredient, such as cow's milk protein, changing formulas may be helpful. Milk-thickening agents decrease vomiting, but do not necessarily improve reflux. Placing an infant in the prone position ("on the tummy") reduces reflux, but this position should be avoided since it is associated with sudden infant death syndrome.

Older children may benefit from dietary modifications, such as avoiding spicy foods, chocolate, alcohol, and foods and beverages high in caffeine. Weight loss may help control reflux in overweight children. Other measures, such as elevating the head of the bed, left side positioning during sleep, and refraining from eating two to three hours before bedtime, may help decrease GERD symptoms. Finally, smoking is associated with GERD in adults, so cessation of smoking or avoidance of passive exposure to tobacco smoke may help reduce GERD in children.

### Acid Suppressant Therapies

If lifestyle changes do not alleviate the symptoms of GERD or if esophagitis persists, a two- to four-week trial of acid suppressant therapy is usually initiated. There are two major classes of acid suppressants for the treatment of GERD: histamine-2 receptor antagonists (H2RAs) and proton pump inhibitors (PPIs). Several medications have pediatric indications for GERD (see table). The U.S. Food and Drug Administration (FDA) has approved these agents for pediatric use. All of these agents have been approved for use in adults, and off-label use of these medications in younger or older children is common. Other acid suppressant therapies that have been

## Medications with Pediatric Indications for GERD

Agent	Age*	Dose*
<i>Histamine-2 receptor antagonists</i>		
Cimetidine	≥ 16 years	800 mg BID or 400 mg QID
Famotidine	1 to 16 years	1 mg/kg/d divided BID
Nizatidine	≥ 12 years	150 mg divided BID
Ranitidine	1 month to 16 years	5 to 10 mg/kg/d divided BID or TID
<i>Proton pump inhibitors</i>		
Esomeprazole	12 to 17 years	20 or 40 mg
Lansoprazole	1 to 17 years	15 to 30 mg once daily
Omeprazole	2 to 16 years	10 to 20 mg

\* Note: The age and dosage recommendations are listed in the prescribing information for the medications named. Off-label use of these agents in younger and older children is common, and all are approved for adults.

approved for adult GERD are also sometimes prescribed off label for the treatment of pediatric GERD. The lack of a pediatric indication generally reflects the fact that clinical studies in children have not been conducted with that drug, or that the manufacturer has not filed an FDA application for pediatric use.

H<sup>+</sup>/K<sup>+</sup> ATPase pumps (proton pumps) present in parietal cells in the stomach lining produce gastric acid when stimulated by three different pathways, one of which involves binding between histamine and its receptor on the cell surface. H2RAs decrease acid secretion by blocking the histamine-2 receptor on parietal cells. In randomized, placebo-controlled trials of nizatidine and cimetidine, erosive esophagitis healing rates of about 70%

have been reported. Improvements in symptoms and reductions in the use of antacids also have been observed.

PPIs bind to and deactivate proton pumps in the parietal cells of the stomach lining, thereby blocking all three of the pathways that produce gastric acid. Erosive esophagitis healing rates of 80% to 100% have been noted in pediatric subjects treated with omeprazole or lansoprazole. Improvements in symptoms also have been observed. Clinical trials in adults have found that PPIs are superior to H2RAs in healing esophagitis and relieving GERD symptoms.

Orenstein agrees that PPIs provide more potent acid suppression than H2RAs, but points out that other factors should be considered as well. "For infant GERD there is less published,

**"Fundoplication should be considered only if the diagnosis is certain, and maximal use of available pharmacotherapies have had inadequate benefits," asserts Susan R. Orenstein, MD, University of Pittsburgh School of Medicine.**

controlled evidence for PPI efficacy, and there are several reasons to suspect that acid suppression may not be the only or the paramount goal," she says. "Further, the literature suggests that H2RAs may provide some important prokinetic benefit that would be most advantageous in young infants."

In addition to efficacy and safety, specific drug characteristics, including taste, may also influence the choice of an acid suppressant for a child. "The formulation and dosing schedule will play a role in medication choice, for instance, simple, infrequent doses that can be given at home to school-age children and formulations that are easy to administer to infants," Orenstein says. Scheduling issues may mean one type of agent would be preferred over another. In particular, H2RAs work better with food, while PPIs work better on an empty stomach followed by a feeding (ideally, about 30 minutes after the PPI is taken). Finally, cost may be a factor, particularly if long-term treatment is required.

### Optimal Duration

The optimal duration of therapy of acid suppressants is an open issue. Some children may benefit from maintenance therapy, but this benefit has not been well-studied in the pediatric population. "Published studies in the pediatric literature have reported PPI use in children for as long as 11 years, but more research is needed to confirm the safety of long-term use of PPIs in children," Gremse explains. Rudolph concurs, "The long-term safety of PPIs has not been established in pediatric patients. Also, drug exposure during fetal or early life may have unanticipated long-term consequences, so I am always careful to use time-limited therapy if I am not sure that symptoms are due to GERD. In such patients with erosive esophagitis, long-term treatment is indicated. These patients generally cannot be weaned to other therapies without relapse."

Antacids, another form of acid

## GERD and the Irritable Infant

**A**lthough PPIs are extremely effective in reducing episodes of reflux in infants, this result may not translate into improvements in irritability. "The biggest change in the new NASPGHAN guidelines may be the approach to the irritable infant," says Colin Rudolph, MD, PhD, professor of pediatrics at the Medical College of Wisconsin in Milwaukee.

The 2001 guidelines suggest that empiric treatment with acid suppressants may be appropriate in irritable infants, but controlled studies published since then question the validity of this approach, and suggest that PPI therapy should be reserved for infants with documented esophagitis. Of particular importance is a placebo-controlled, crossover study in irritable infants with GER by Moore et al. (*J Pediatr* 2003;143:219). Episodes of crying or fussiness were not reduced by PPI therapy compared to placebo; these behaviors improved over time independent of treatment. Such findings suggest that other factors may contribute to irritability in infants with GER, including non-acid-related reflux events or food intolerance. —SLC

suppressant, are generally not recommended for the treatment of GERD in children, as safer and more effective agents are now available. In particular, aluminum-containing antacids are a concern, as pediatric patients taking these agents have been found to have serum aluminum levels that place them at risk for osteopenia and neurotoxicity.

Prokinetic agents improve gastrointestinal motility and therefore reduce reflux. These drugs, which include metoclopramide and bethanechol, have not been shown to be effective in treating children with GERD. Some data support the efficacy of cisapride in the pediatric population, but this drug is no longer available commercially in the United States due to concern about cardiac irregularities in adult patients. Accordingly, prokinetic agents are not recommended for the treatment of pediatric GERD at this time.

### Surgical Therapy

Another alternative for the management of GERD in children is a surgical procedure called fundoplication, or more informally, a "fundo" or "wrap." This procedure can be performed either as open surgery or laparoscopically, and involves wrapping the upper portion of the stom-

ach (fundus) around the lower part of the esophagus.

Children who have failed pharmacologic treatment may be candidates for surgical therapy. However, Orenstein recommends that physicians approach this decision with caution. "If currently available powerful pharmacotherapies, used optimally, do not provide benefit, it suggests that the diagnosis may be incorrect and fundoplication may not improve the situation," she explains. "Thus, fundoplication should be considered only if the diagnosis is certain, and maximal use of available pharmacotherapies superimposed on lifestyle measures have had inadequate benefits, unacceptable side effects, or other costs associated with their use."

Case reports indicate that some patients benefit from fundoplication, but about two-thirds still have symptoms or receive medical therapy for reflux, and about 10% require another operation within two years. The limitations of surgical management suggest that pharmacological therapy is the best first-line treatment for children with GERD.

—Sharon L. Cross, PhD, is a writer in Mission Viejo, Calif. More information on physician practice strategies is available on our Web site (see page 8).

# Mega-Groups Boost Efficiency, Revenue

By Albert Santalo

As health care has become more complex, many physicians have found it is virtually impossible to see more patients while also attending to such business functions as billing, collections, and insurance eligibility. While costs rise, reimbursement has declined.

Recognizing these trends, physicians are seeking ways to increase efficiency and revenue while also improving billing and collections.

## Revenue Cycle Management

Physicians who struggle with labor-intensive insurance claims, re-submissions, and slow payments or denials have several options. One is to buy and maintain billing software. A second option is to contract with a billing service. And a third option is to contract with a vendor that provides billing service software and support and collection services. Those physicians who choose this third option find that these vendors help them increase collections and decrease the time spent on back-office operations. What's more, contracting with such vendors enables the physicians to consolidate their operations with other practices, increasing size and efficiency.

Before they even consider consolidating with other practices, however, most physicians are seeking billing service software and support and collection services. Some of the systems that provide these services have no capital costs and no software maintenance or upgrade fees. The charge to a physi-

cian group is a percentage of revenue collected or a fee per encounter.

The benefits of a comprehensive, Internet-based practice management and billing and collections system are significant. Physician group personnel can use personal computers with an Internet connection to determine whether a patient is insured, ensure

physicians can focus more on patient care and evaluate ways to grow or enhance the practice.

## Larger Groups

One way physicians can enhance their practices is by consolidating with other physicians, and some billing and collection systems available online are

**Contracting with some system vendors enables physicians to consolidate their operations with other practices.**

accuracy in claims coding, and track the billing until payment.

The best vendors in this relatively new field provide automatic updates on changes in covered procedures and charges. They also catch errors in coding at the point of entry, saving time and improving cash flow. Collection success rates for such vendors can exceed 90%.

The advantages of contracting with such a vendor are a low initial investment, variable costs based on patient volume, a reduced number of back office employees, better access to key performance metrics, fewer denials, daily tracking of unpaid claims, and an account manager who is responsible to track billing and to follow up with payers. Having an account manager who takes on these responsibilities may mean the physician practice could reduce the number of office support employees on staff.

Practice management experts find that such billing systems offer physicians the ability to review a number of office metrics at once. This real-time "dashboard" includes data on patient and billing activity, receivables, and payment and denial analysis.

Once a system is in place, the physi-

facilitating such consolidations. Some observers believe that the solo practitioner and small-group models in which physicians had fee-for-service payment and paper-based information systems are being replaced by technology-savvy physicians who merge and acquire other practices to form a mega-group, which is composed of many physicians in previously unaffiliated practices who join together to operate as one large group.

The purpose of mega-groups is to increase profits and leverage with payers, obtain additional managed care contracts, and use technology to increase efficiencies. In a mega-group, physicians can negotiate higher rates with managed care companies, purchase supplies and equipment at volume discounts, and eliminate redundant costs.

In addition, a mega-group offers important benefits concerning physician ownership and on-site availability of ancillary services as specified in the Stark laws. If a physician is part of a mega-group, an exception enables the physician to own and prescribe ancillary services such as laboratory testing and diagnostic imaging. For many doctors, this exception not only improves

*Albert Santalo is the founder of Avisena, a health care management company in Miami that uses technology to improve front and back office processes. Founded in 2001, Avisena (at [www.avisena.com](http://www.avisena.com)) services more than 150 physician practices throughout the Southeast United States.*

the quality of care provided to patients, it also can result in additional revenue.

While the mega-group affords benefits, the transition and implementation process requires careful planning. When structuring a new practice organization, it is important to ensure the cultures, personnel, contracts, and systems work together. Doing so requires attention to detail in the form of pre-planning meetings, financial accounting and legal audits, and an analysis of managed care agreements.

### Size Matters

With any medical practice, the practice management and billing and collection system can mean the difference between having a thriving, efficient mechanism to handle patient flow, insurance, eligibility, bill processing, and collections, or having one that slows the practice through inefficiency.

For physicians forming larger groups and seeking a practice management and billing system that will increase efficiency, the typical issues to consider include minimizing the initial investment, avoiding disruptions in cash flow during the transition to a new system, and standardizing daily functions such as coding, billing, and collections.

Many mega-groups are working with vendors that offer practice management technology and billing and collection services together in one system. In some instances, virtually all information, claims processing, communications, and reporting is done via the Internet. These vendors typically charge a percentage of collected revenue or a fee per encounter.

Unlike a traditional medical billing company, these vendors have the software and support to streamline the billing process, decrease errors in coding and billing, and increase the likelihood of payment. These systems enable a physician's office staff to determine insurance eligibility for a procedure, avoid entering information

## Practices Have Billing Options

**P**hysicians have several options when choosing a billing system. Two of the most popular options are buying software and contracting with a billing service. Here are the advantages and disadvantages of these options.

The first method is buying and maintaining software for billing and reimbursement. This method requires an initial investment in software that can be significant and is likely to require ongoing maintenance and upgrade fees. Although some of these systems provide support for collecting from insurers, most do not, and so most of these systems would require the practice to incur costs for staff payroll and benefits. The practice still has to invest in forms, office supplies, postage, and telephone and office costs as well.

These systems mean keeping up with changes in billing codes and coverage restrictions. The initial investment can be well over \$100,000, depending on the size of the practice. Typical collection success rates range from 70% to 90%.

The advantages of such a system are that the physician has 100% control since the practice owns the software. The disadvantages include a high capital investment, challenges involving staff training, the need for software updates, and a focus on billing but not necessarily on collections. Also, such software does not support the practice in adopting industry best practices, typically has poor reporting capabilities, and the reimbursement rates are frequently lower than they are with other options.

The second method involves contracting with a billing service. Claims are submitted using off-the-shelf billing software and staff manually follow up on late payers and denials. Costs range from 6% to 15% of collections depending on volume and specialty, and collection rates range from 70% to 90%.

The advantages of contracting with a billing service are a minimal capital investment, fewer back-office employees, and access to billing expertise and experience through the service's staff.

The disadvantages include a loss of control since much of the billing work is done off site, and a focus on billing but not necessarily on collections.

that would result in claim denials, record and access real-time information regarding daily business activity, generate reports relating to patient claims and payments, and track all billings until payment is received. Also, these systems allow physicians to scan and store identification, medical records, and financial records for easy retrieval at any time.

Since practice information is available to physicians over the Internet, it is always accessible from any computer with Internet access. This means a physician can access patient records from home, the office, or a hospital. It also means a physician can affiliate with other groups with

no additional costs for software. The newly affiliated physicians would simply access the practice's records as the other physicians do: via the Internet.

In today's health care environment, forming a mega-group can make sense for many physicians. With a sound yet flexible structure, a mega-group will adapt to the changing trends in health care. The next step, partnering with a management company that continually invests in processes and technology, will help reduce administrative and financial problems, improve collections, and increase profit.

—More information on physician practice strategies is available on our Web site (see page 8).

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