

# Health Plan Joins With Physical Therapy Facility to Manage Back and Neck Pain

Capital Health Plan achieved a 79% improvement in pain scores and a 54% improvement in function scores for its members

Charles M. Tomlinson, MD, vice president for medical affairs, John D. Archbold Memorial Hospital; Chad Gray, PT, orthopedic and sports physical therapy; Tom Kane, PT, orthopedic and sports physical therapy

## ABSTRACT

Twenty-five billion dollars is spent each year on the medical care of back pain, and \$50 billion is lost in productivity. Primary care physicians might have difficulty providing thorough counselling and treatment to their patients about the condition. In 2006, Capital Health Plan (CHP) partnered with Orthopedic and Sports Physical Therapy, which employed the mechanical diagnosis and therapy (MDT) technique. After undergoing this technique, members experienced a 79% improvement in pain scores and a 54% improvement in function scores, compared to when they started treatment.

## BACKGROUND

Neck and back pain are extremely common in the general population. More than 50% of Americans will have back pain every year. Twenty-five billion dollars is spent each year

on the medical care of back pain and \$50 billion is lost in productivity each and every year.<sup>1</sup> Our patients want quick answers and quick fixes, yet this is one malady where patience is critical.

Unfortunately, patients with neck and back pain typically demand X-rays and other high-technology imaging scans, such as magnetic resonance imaging (MRI), and few health care providers are willing to explain why these are most likely unnecessary during the acute phase of back pain management. Radiology costs have skyrocketed over the past decade and Capital Health Plan (CHP) has been no exception.

Once the MRI is performed, the practitioner will refer the patient for pain management, where epidural steroid injections are likely. Pain management practices have literally multiplied in our community in recent years. Our small town now has four full-time pain management specialists. Five years ago there was only one. Yet the population has not changed significantly.

In the United States, nearly \$50 million was spent in 1999 for epidural steroid injections, and in one study of 300 patients, no improvement could be found at 24 hours, 3–6 months, or one year after treatment.<sup>2</sup> The annual trend for total pain management procedures in 2005 and 2006 for our health plan was 46% and 19%, respectively.

There are a myriad of techniques used by pain management specialists, orthopedic surgeons, and neurosurgeons. We have seen a rise in requests for IDET (intradiscal electrothermal therapy to the disc annulus), disc decompression, and microdiscectomy. There is very little literature support clearly demonstrating the benefits of these procedures. Many health plans consider most investigational.

## SURGERY

Surgical procedures of the spine are very popular in Tallahassee. Capital Health Plan (CHP), a staff-model primary care practice, has experienced surgical rates well in excess of the 90th percentile based on our NCQA *Quality Compass* comparison data over the past two years. The *American Medical News* reported that delaying surgery does not appear to cause damage. These studies were specific to the surgical treatment of spondylolisthesis, but certainly support the general knowledge that most patients with low back pain will get better over time whether they pursue medical or surgical treatment. The vast majority of these patients

### Disclosures

Charles M. Tomlinson, MD, served as vice president at Capital Health Plan from 2000 to 2008. Chad Gray and Tom Kane are physical therapists certified in mechanical diagnosis and treatment techniques by the McKenzie Institute.

### Author correspondence

Charles M. Tomlinson, MD  
Vice President for Medical Affairs  
John D. Archbold Memorial  
Hospital  
P. O. Box 1018  
Thomasville, Ga.  
E-mail: ctomlinson@archbold.org  
Phone: (229) 228-2741  
Fax: (229) 228-2768

certainly are not going to be worse from delaying surgical treatment.<sup>3</sup> Spinal fusions have increased dramatically and now disc arthroplasties (disc replacement) are on the rise. This health plan has encountered at least 15 requests for these procedures in the last two months.

Independent reviewers are giving mixed opinions about the effectiveness of these procedures. Many health plans continue to consider them investigational, but the health plans find themselves under tremendous pressure to approve them. After all, patients are living with fear that they might become paralyzed if they do not undergo an intervention quickly. Few physicians are willing to spend the time to educate their patients about their conditions and their options.

#### **DRUG THERAPY**

Drug costs for the care of these conditions continue to rise. Naturally, nonsteroidal anti-inflammatories (NSAIDs) are prescribed in high volume and usually ibuprofen is out of the question. Patients complaining of severe pain are often given opioids. If newer narcotics are prescribed, the cost of caring for their condition is escalated even further. Couple this with the fact that 24% of patients receiving narcotics for their back pain will develop drug seeking behavior, which will likely result in additional medical costs for behavioral health and other medical interventions.<sup>4</sup>

Good alternatives for the management of acute back and neck pain do exist and are very effective.

The first step is to assess patients for potential high risk conditions with a proper history and physical examination. Fears and misconceptions are common among patients with neck and back pain, and these must be addressed. The patient needs a confident explanation about his condition, and he must be empowered to resume normal activities.<sup>5</sup>

Sometimes these interventions

occur in the primary care office. Often patients have fear and seek instant relief in the form of procedures and drugs. Primary care physicians find themselves struggling to increase productivity and, as a result, have little time to adequately capture their patient's confidence, provide thorough explanations about his condition, and contradict what his neighbor told him about the benefits of being exposed to the magnetic field in the MRI machine.

Even the National Committee for Quality Assurance (NCQA) has recognized how difficult this task is, so a new HEDIS (Healthcare Effectiveness Data and Information Set) measure to track the incidence of diagnostic imaging during the acute phase of back pain has been implemented.

How can a community health plan improve the care of these patients, improve medical costs, and achieve outstanding results on this new HEDIS measure? CHP operates with a very low overhead so tacking on a complex pre-authorization process for diagnostic X-rays and procedures would not be desirable. CHP is a hybrid model HMO and operates a very effective staff model practice that provides primary care for 40% of the plan's population. Leveraging the staff model practice, CHP pursued a pilot project to test a new approach to the management of patients with back and neck pain.

The business need was clearly established because of rising diagnostic, drug, and procedure costs. In fact, CHP estimated total costs for patients with spinal conditions and their associated pain syndromes at \$4 million annually. This amount is comparable to the unavoidable heroic expenditures incurred for all solid organ and bone marrow transplants and their associated drug costs. So, how could the cost of back and neck pain be reduced?

Many good physicians and consultants in the community readily reported that patients were not receiv-

ing rapid access to good conservative treatment with practitioners who could spend adequate time and energy evaluating, educating, and training these patients. The potential care settings, techniques, philosophies, and capacity of many practitioners were evaluated. Capital Health Plan then formed a collaborative project with Orthopedic and Sports Physical Therapy.

#### **PILOT PROJECT**

The project was designed to provide the CHP population with rapid access to this physical therapy practice. This population comprised 40% of CHP's overall population. These physical therapists agreed to track each patient entering and completing the program by assessing level of pain and functional score. Each patient completing the program received a telephone survey call at three-month intervals. In addition to rapid access, the therapists agreed to do anything in their power to eliminate barriers to access, such as providing occasional early or late appointments and also waiving copayments if this was perceived as a barrier, but this was rare.

Orthopedic and Sports Physical Therapy employs the mechanical diagnosis and therapy (MDT) technique. Pain syndromes respond in various patterns to the MDT assessment. Based on this assessment, a treatment that is specific for the resolution of the discomfort produced by the individual's pain source is designed. The patient must then be extensively educated on the techniques to relieve their symptoms as well as encouraged to employ these techniques with any recurrence. The outcomes of the MDT technique have been extensively studied for lumbar-related pain syndromes. Ronald Donelson, MD, a 20-year veteran of nonoperative spine care at the State University of New York, reports that the MDT techniques are also highly effective for cervical region pain syndromes. He expects this opinion to be

validated in the coming years as cervical pain syndromes become more extensively studied.<sup>6</sup>

### STUDY DESIGN

The CHP pilot project was designed as a prospective study to determine patient outcomes with respect to pain and function scores. All newly symptomatic patients from the CHP staff-model primary care practice were eligible for participation and became enrolled upon referral to the Orthopedic and Sports Physical Therapy practice. Financial and utilization outcomes of the study group compared to those who received usual referrals and care from other primary care practices will be extremely interesting and important to the health plan and will be the subject of future analysis.

The project encountered incredible success early on, so five months into the project, access was expanded to CHP members seeking their primary care with Tallahassee Primary Care

Associates, an independent primary care physician group not part of the CHP staff model practice.

This provided an additional 15% of the total CHP population, such that 55% of the CHP population now had access to this pilot project during the final 7 months of the study. The outcomes from this pilot project have been excellent.

During the course of the one-year pilot study, 171 patients enrolled in the program. These patients averaged 3.96 total visits to orthopedic and sports physical therapy. Pain and function scores were recorded by patient survey with a very simple scale. The patient was asked to report their level of pain from zero to 100, with 100 representing the worst pain possible. Patients rated their physical functioning on a scale from zero to 100, with 100 representing fully functional status with no deficits.

Average pain scores improved from 53.65 to 11.32 and average function scores improved from 59.21 to

91.13. (See Table 1: Study results).

Follow-up telephone surveys assessed whether the patient was experiencing an A (free of pain with no limitations or lost time at work), B (mild pain with no loss of function), or C (pain with limited function) result. Eighty-four patients participated in three-month surveys and the majority were distributed evenly with A and B results. Only four patients reported a C result. At six months, 39 patients participated in the surveys. Again these were evenly distributed with A and B results and only three patients reported a C result.

### EXPANDING THE STUDY

Based on the outcomes in this pilot study, Capital Health Plan will give the entire plan population access to these physical therapy services. Additional expertise will be needed as this program expands to manage those who have experienced chronic pain. Chronic pain syndromes are some-

*continued on page 54*

**TABLE 1**  
**Study results**

Quarter	Q1	Q2	Q3	Q4	Total
Visits per patient	3.60	4.53	3.38	4.55	3.96
Average pain at entry	51.46	56.25	53.94	53.63	53.65
Average pain at discharge	8.33	11.94	12.66	12.75	11.32
Total improvement in pain score	43.13	44.31	41.28	40.88	42.34
Percent pain improvement	83.81%	78.77%	76.53%	76.22%	78.91%
Average function at entry	61.04	52.92	61.49	60.00	59.21
Average function at discharge	91.88	90.28	93.40	88.33	91.13
Total improvement in function score	30.83	37.36	31.91	28.33	31.92
Percent function improvement	50.51%	70.60%	51.90%	47.21%	53.91%
Percent with imaging prior to entry	58.33%	72.22%	59.57%	50.00%	59.65%
<b>3-month survey:</b>					
<b>Responses</b>	35	20	29		84
A Result	19	10	14		43
B Result	14	10	13		37
C Result	2	0	2		4
<b>6-month survey:</b>					
<b>Responses</b>	30	8	1		39
A Result	15	3	1		19
B Result	12	5			17
C Result	3	0			3

**Back and Neck Pain, continued from page 49**

times associated with underlying anxiety or depression, and when these conditions are addressed, much of the pain will resolve. CHP has identified a cadre of behavioral health professionals to assist with issues of functional overlay and narcotic abuse as well as a physiatrist and tertiary orthopedic and neurosurgery specialists who support the philosophy of a conservative care program. In July 2007, CHP began a partnership with Health Dialog for disease management, a 24-hour nurse help line, and provision of educational materials and counseling for conditions described by Health Dialog as preference sensitive, i.e., the patient has optional treatment plans that should be based on the preference of a fully informed patient. The goal of this partnership is to make sure CHP patients have the ability to make fully informed decisions.

Capital Health Plan now seems poised to provide rapid access to effective conservative care, and to have the ability to provide tremendous educational resources, counseling, and physical training so that the members of the health plan can achieve a fully informed treatment plan related to the management of cervical and lumbar related pain syndromes. Naturally, CHP will be gathering the proprietary information related to the achievement of its business goals in the coming year while relishing the knowledge that clinical care, outcomes, and satisfaction are already greatly improved.

**REFERENCES**

1. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. *Ann Int Med.* 2003; 138:898-906.
2. Hampton, T. Epidurals' benefit for back pain questioned. *JAMA.* 2007; 297: 1757-1758.
3. Elliott, V. Delaying back surgery works for some. *Am Med News.* 6/25/07.
4. Martell B, O'Connor P, Kerns R, Becker W, et al. Systematic review: opioid treatment for chronic back pain: prevalence, efficacy, and association with addiction. *Ann Int Med.* 2007; 146:116-127.
5. Gatchel R. Preventing chronic disability in patients with acute low back pain. *Drug Benefit Trends.* March 2006: 196-198.
6. Donelson R. *Rapidly Reversible Low Back Pain.* 2007. Hanover, New Hampshire, SelfCare First.

**ADVERTISING INDEX**

<b>FOREST LABORATORIES</b>	<b>SOLVAY PHARMACEUTICALS</b>
Bystolic .....27-28	Corporate .....43
Lexapro .....37-39	
Namenda .....17-18	<b>TEVA HEALTH SYSTEMS</b>
<b>MEDIMMUNE, INC.</b>	Epoprostenol .....C2
Synagis .....31-32	<b>UCB</b>
<b>RECRUITMENT</b>	Cimzia.....7-12
<b>ADVERTISING</b> .....52	
<b>SANOFI-AVENTIS, U.S.</b>	<b>WYETH PHARMACEUTICALS</b>
Managed Care .....3	Pristiq .....54,C3,C4