

## Top Growth Areas in the Outpatient Market

A Report from Solucient, LLC

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The growth in outpatient care, driven by advances in medical technology, demand from patients wanting to avoid hospital stays, and cost-containment pressures, shows no signs of abating. Hospital outpatient spending jumped 11.2 percent in 2000—the largest increase since 1992, according to a 2001 article in *Health Affairs*. In contrast, inpatient spending rose only 2.8 percent in 2000. The following year, spending on outpatient services grew 16.3 percent, outstripping prescription drug spending as the fastest growing component of total health care spending.

Within the burgeoning outpatient market, a variety of medical procedures are experiencing meteoric growth. Several factors contribute to the impressive volume—a new technology or technique that makes shifting the procedure to an outpatient setting possible, a change in physician practice patterns resulting from updated clinical guidelines or research, a recent decision by insurers to cover the procedure, and increased patient demand or need.

This report highlights four procedures that have had noteworthy growth in the last three years:

- Colonoscopy due to altered physician practice patterns;
- Acupuncture and chiropractic resulting from physician acceptance, patient demand, and insurers covering the therapies;
- Positron emission tomography (PET scans) driven by new clinical applications;
- And, dual energy X-ray absorptiometry (DEXA bone density tests) in response to the aging of the population and superior screening technology.

Figure 1 shows the gains among some of the fastest growing outpatient procedures.

**FIGURE 1: Estimated Encounters by Procedure Group With More Than a 15% Change Over Three Years**

CPT Procedure Group	1999	2000	2001	1998-2001
Chiropractic Treatment	60,534,483	69,808,382	115,505,330	90.81%
Physical Therapy	235,474,919	264,307,055	400,477,975	70.07%
Nuclear Medicine	12,401,927	15,229,747	18,508,535	49.24%
Neuro Testing and Other Neurological Procedures	25,921,678	29,795,704	34,892,634	34.61%
Chemotherapy	9,068,775	11,950,743	12,198,171	34.51%
Diagnostic and Other Digestive Tract Procedures	17,268,009	19,460,663	21,147,120	22.46%
Radiation Oncology	30,716,020	36,479,861	36,336,399	18.30%
Dermatological and Tissue Procedures	89,139,379	99,292,177	104,644,590	17.39%
Diagnostic Radiology	327,760,589	368,605,186	384,351,086	17.27%
Endoscopy and Other Respiratory Procedures	5,037,962	5,434,475	5,857,294	16.26%
Musculoskeletal Procedures	28,816,474	31,433,669	33,358,545	15.76%

Source: Solucient's *OutpatientView*™, 1999-2001

In the quickly changing environment of medical technology, accurate measurement of diagnosis and procedure volumes is essential for pharmaceutical and medical device manufacturers to make smart business decisions. The companies that remain competitive understand how many patients are being treated, who is treating them, and where they are receiving care.

Solucient’s procedural and diagnostic data—both inpatient and outpatient—give key insights into market potential for new and existing products and services, and it helps define future growth opportunities for product development and service lines. Solucient helps hundreds of subscribers from major pharmaceutical and device manufacturers size the inpatient and outpatient markets through its Web-based products: InpatientView™ and OutpatientView™.

### A Shift in Screening Technologies for Digestive Disorders

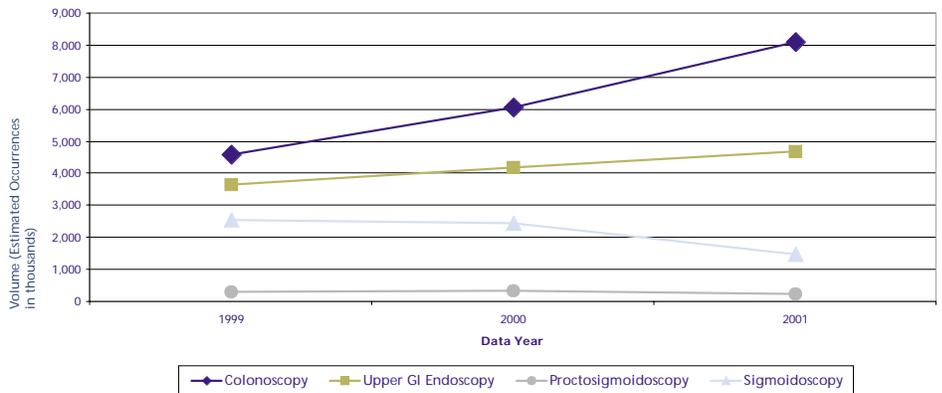
Screening for colorectal cancer is undergoing a sea change as physicians alter their practice patterns based on new research and guidelines. Solucient’s data show that the number of colonoscopies increased by 76.6 percent from 1999 to 2001, while 41.7 percent fewer sigmoidoscopies were performed during that same period. (See Figure 2 and Figure 3)

**FIGURE 2: Select Digestive Procedures With More Than a 10 Percent Change Over Three Years**

CPT Procedure Group	1999	2000	2001	1999-2001 % Change
Colonoscopy	4,593,549	6,071,206	8,110,719	76.57%
Upper GI Endoscopy	3,647,476	4,168,548	4,698,012	28.80%
Laparoscopy Biliary Tract	1,655	1,726	1,922	16.13%
Dentoalveolar Procedures	141,980	147,311	160,940	13.35%
Laparoscopy Cholecystectomy	700,092	754,168	785,021	12.13%
Proctosigmoidoscopy	316,552	330,340	245,245	-22.53%
Sigmoidoscopy	2,537,713	2,445,464	1,480,555	-41.66%

Source: Solucient’s OutpatientView™, 1999-2001

**FIGURE 3: Growth and Decline of Select Digestive Procedures**



Source: Solucient’s OutpatientView™, 1999-2001

Recent studies have shown colonoscopy to be not only much more accurate in detecting cancer in asymptomatic adults than sigmoidoscopy, but also more cost effective. According to OutpatientView, in 2001 the mean Medicare payment for colonoscopy procedures was \$199 versus \$100 for sigmoidoscopy procedures. The mean commercial payment was \$272 and \$125 for colonoscopies and sigmoidoscopies, respectively. While colonoscopies can be double the cost of sigmoidoscopies, the recommended interval for repeat screening for colonoscopy is 10 years versus five years for sigmoidoscopy. Additional cost savings may be attributed to not doing both procedures in many patients. And colonoscopy allows physicians to screen for and remove polyps in one process instead of subjecting the patient to multiple procedures. In early 2003, the U.S. Multisociety Task Force on Colorectal Cancer issued revised clinical guidelines that recommend colonoscopy as the preferred test for patients at increased risk for colon cancer.

#### Alternative Care Becoming More Mainstream

The limitations of conventional medicine and a desire for more holistic, less procedurally oriented care are causing many patients to seek adjunct therapy through practitioners of complementary and alternative medicine (CAM). According to the often quoted 1998 JAMA article on alternative medicine trends, 42 percent of Americans used some form of alternative therapy in 1997, and made an estimated 629 million visits to alternative medicine practitioners, exceeding the number of visits to U.S. primary care physicians that year. Individuals spent \$21.2 billion on alternative care in 1997, and paid at least half out of their own pockets. A more recent study published in the *Annals of Internal Medicine* in 2001 found that seven out of 10 post-baby boomers have used CAM therapy by age 33, compared to half of baby boomers, and three out of 10 individuals born before 1946. And at least half of the individuals who have tried CAM continue to use alternative medicine therapies.

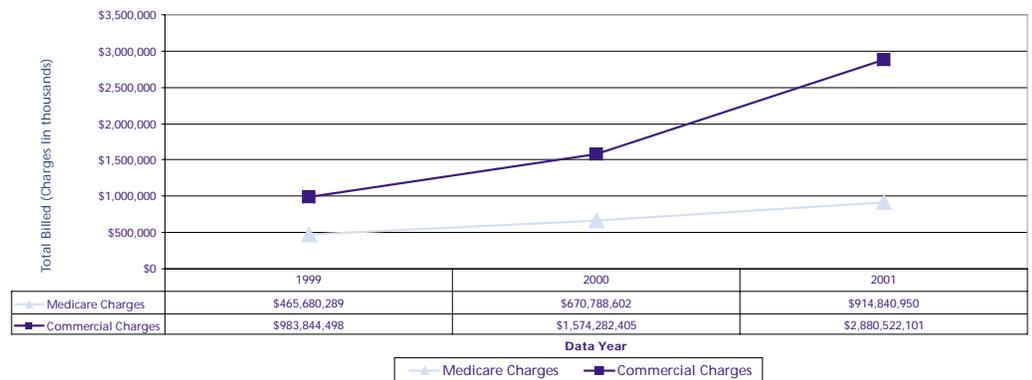
Solucient's OutpatientView confirms the growing popularity of acupuncture, which had a 200 percent increase in volume from 1999 to 2001, and chiropractic care, which rose 91 percent in that three-year period.

Women, individuals with a holistic orientation to health, and those with a higher level of education are most likely to try alternative medicine. A national survey conducted by Solucient found that 61 percent of individuals visiting chiropractors, acupuncturists, homeopaths, and massage therapists are women; 47 percent are between the ages of 35 and 54; more than half earned \$50,000 or more; and 68 percent have attended college. Respondents who visited alternative medicine practitioners reported a high incidence of allergies, arthritis, chronic back problems, weight problems, migraines, and high cholesterol, according to the survey. Other studies have found that individuals with depression and anxiety try alternative medicine, and one survey of surgery patients found that half were interested in using acupuncture to relieve preoperative anxiety.

Studies of the cost effectiveness of CAM treatments have prompted insurers to cover a limited number of alternative therapies, particularly acupuncture and chiropractic. The status of acupuncture was further elevated in 1997 when the National Institutes of Health declared that there is evidence that acupuncture is effective for treating pain, nausea and vomiting, addiction, stroke rehabilitation, and asthma. The NIH also called for health insurers, including Medicare and Medicaid, to expand their coverage to include acupuncture treatments.

And that reimbursement is undoubtedly contributing to the enormous growth of acupuncture and chiropractic care. Figure 4 illustrates how the volume of one chiropractic procedure correlates with increasing coverage by insurers and the increasing volume of patients. Managed care organizations and other third-party payers have strong incentive to reimburse for chiropractic care as studies demonstrate that the therapy reduces the rate of surgical interventions and inpatient stays. One recent study published on the online Chiropractic Resource Organization reported that the cost of treating episodes of low back pain was 28 percent lower in patients whose health plan provided chiropractic coverage compared to health plans without coverage. And total health care costs were 12 percent less for patients in plans that reimbursed for chiropractic services.

**FIGURE 4: Three-Year Trend of Spinal Chiropractic Manipulation Charges**



Source: Solucient's OutpatientView™, 1999-2001

Spurred by their patients, physicians are increasingly recommending CAM, especially for chronic conditions, such as back problems, anxiety, depression, and headaches. A 1996 survey of providers at the Kaiser Permanente Northern California medical group found that 90 percent of adult primary care physicians and obstetrics-gynecology clinicians recommended at least one alternative therapy to their patients, primarily for pain management. Researchers at Stanford University School of Medicine reported in a 1998 Archives of Internal Medicine article that acupuncture had the highest rate of physician referral (43 percent)

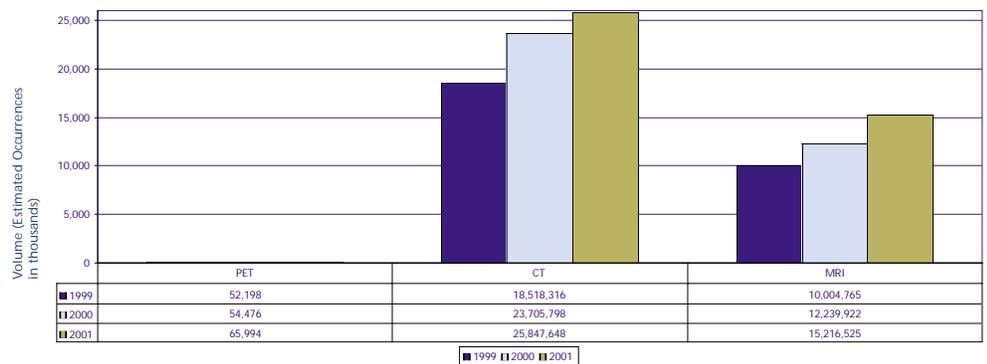
followed by chiropractic (40 percent), and half of the physicians believed the treatments were effective. And among family practitioners, 48.7 percent said they would be willing to use acupuncture in their own practices and 29 percent were open to integrating chiropractic in their practices, according to a 1998 article in the Journal of the American Board of Family Practice.

The top five specialties submitting claims for acupuncture treatment are chiropractic, physical medicine and rehabilitation, neurology, internal medicine, and general and family practice<sup>1</sup>.

### Growth Explosion in Imaging Procedures

Although positron emission tomography (PET) was invented more than a quarter century ago, only recently has the technology extended beyond the research lab and into clinical medicine, particularly oncology. Unlike computed tomography (CT) scans and magnetic resonance imaging (MRI), PET provides images of metabolic and physiologic processes, which allow physicians to detect disease sooner and more precisely differentiate scar tissue, necrosis, and tumor mass so they can better evaluate whether cancer has spread or recurred. PET's superior accuracy over other imaging modalities has resulted in reduced costs through the elimination of unnecessary surgeries and the need for other diagnostic tests. Researchers at Albert Einstein College of Medicine and Montefiore MedicalCenter writing in Seminars in Nuclear Medicine in 2000 predict that the "next decade will witness an explosive growth of PET technology in oncologic imaging."

FIGURE 5: Three-Year Trend in PET, CT, and MRI Volume



Source: Solucient's OutpatientView™, 1999-2001

<sup>1</sup>The procedure codes included in the analysis were CPT codes 97780 and 97781, acupuncture with and without electrical stimulation.

PET scans' rapid rise in outpatient settings—volume grew a mere 4.4 percent from 1999 to 2000 but then leapt 21.1 percent the following year—was bolstered by the Centers for Medicare and Medicaid Services' approval of PET as an imaging tool to diagnose six types of cancer and as a diagnostic test for heart disease in late 2000. Medicare is now covering PET scans to diagnose nearly half of the cancer cases in elderly Americans each year, according to a report on MedTech, an Internet site devoted to medical technologies.

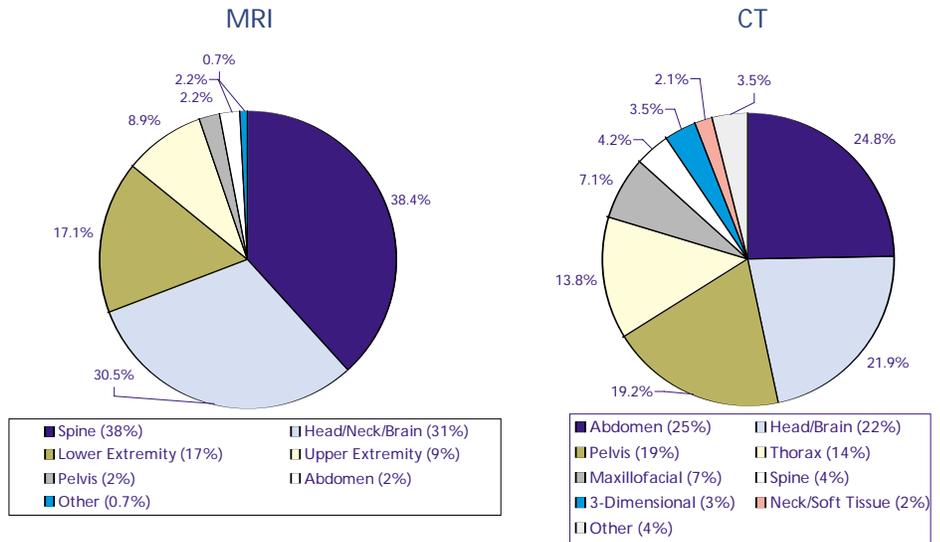
Since PET has only recently been adopted for clinical applications, its growth is expected to continue to explode. Yet other well-established major imaging procedures, such as CT and MRI, also are experiencing impressive growth. The volume of MRI increased 22 percent from 1999 to 2000 and rose another 24 percent the following year, according to Solucient's OutpatientView. CT scans experienced a 28 percent growth from 1999 to 2000, which tapered to a 9 percent increase from 2000 to 2001. The major areas of decrease in CT utilization were for the abdomen and pelvis. Likewise, these were major growth areas for MRI utilization.

**FIGURE 6: Growth Trends of CT and MRI by Imaged Body Part**

CPT Procedure Group	% Change from 1999 - 2000	% Change from 2000 - 2001
CT 3-Dimension	4.34%	17.86%
<b>CT Abdomen</b>	<b>36.11%</b>	<b>8.32%</b>
CT Brain/Ear	4.28%	0.11%
CT Guidance	4.28%	3.85%
CT Head/Brain	31.07%	2.60%
CT Lower Extremity	4.33%	5.39%
CT Maxillofacial	12.07%	9.39%
CT Neck/Soft Tissue	4.36%	18.98%
<b>CT Pelvis</b>	<b>36.48%</b>	<b>15.01%</b>
CT Spine	4.48%	1.89%
CT Stereo Local	4.79%	1.83%
CT Thorax	36.68%	12.88%
CT Upper Extremity	4.25%	3.05%
<b>MRI Abdomen</b>	<b>4.34%</b>	<b>48.92%</b>
MRI Bone Marrow	4.42%	0.49%
MRI Breast	4.95%	1.28%
MRI Chest	4.42%	31.46%
MRI Head/Neck/Brain	23.59%	15.38%
MRI Lower Extremity	26.80%	30.04%
MRI Myocardium	4.38%	1.55%
<b>MRI Pelvis</b>	<b>4.35%</b>	<b>68.04%</b>
MRI Spine	19.67%	21.74%
MRI TMJ	4.31%	1.83%
MRI Upper Extremity	34.71%	50.18%

Source: Solucient's OutpatientView™, 2001

**FIGURE 7: Applications of CTs & MRIs in 2001**



Source: Solucient's OutpatientView™, 2001

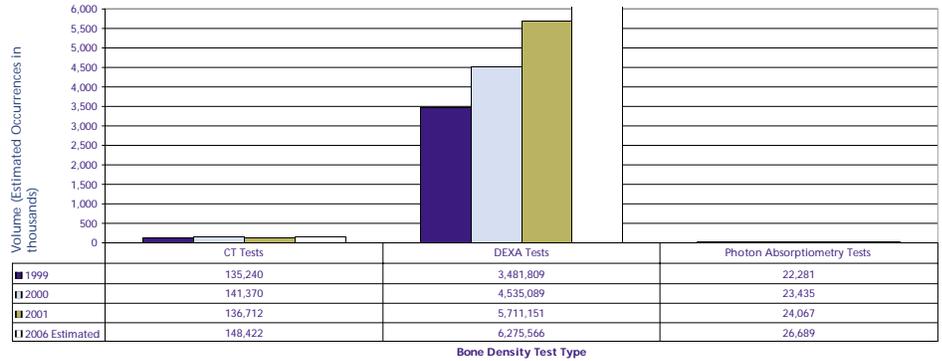
Proactive patients often ask for the noninvasive CT scans and MRIs because they want the best and latest technology and assume that the more sophisticated the imaging, the more accurate the diagnosis. Figure 7 depicts the applications of CT scans and MRIs.

### Increased Osteoporosis Screening

As greater numbers of baby boomers transition into their senior years, osteoporosis and low bone mass are expected to rise dramatically. Over 10 million people currently have osteoporosis, and the National Osteoporosis Foundation (NOF) estimates that 14 million Americans will suffer this debilitating disease by 2020 with an additional 47 million at high risk for developing osteoporosis if current trends persist. Both the NOF and the U.S. Preventive Services Task Force (USPSTF) recommend that all women older than 65, regardless of other risk factors, be screened for osteoporosis, and Medicare began covering bone density tests in mid-1998. A heightened awareness of osteoporosis and the new reimbursement regulations likely contributed to the 31 percent increase in osteoporosis diagnoses during outpatient visits from 1999 to 2001, according to Solucient's OutpatientView. Considering that research indicates that only 12 percent of women over age 65 have had a bone mineral density test, the potential for osteoporosis screening is enormous as the population ages and if physicians and patients follow NOF's and the USPSTF's screening recommendations.

Dual energy X-ray absorptiometry (DEXA) is widely accepted as the most accurate screening method for identifying patients with low bone mineral density. The volume of outpatient DEXA bone density tests increased by 64 percent from 1999 to 2001, according to Solucient's data.

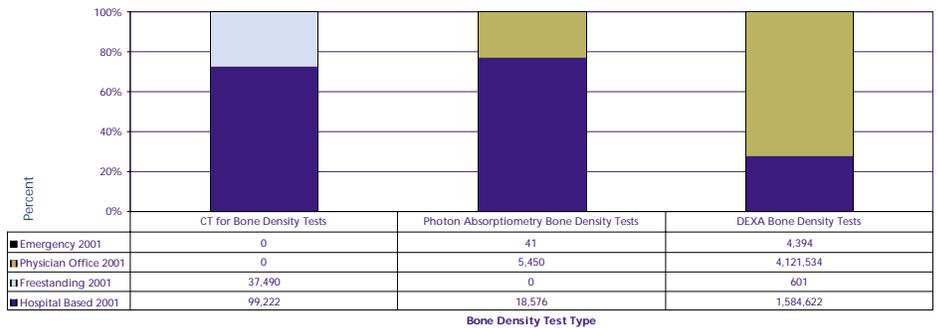
**FIGURE 8: Growth Trends by Type of Bone Density Test<sup>2</sup>**



Source: Solucient's OutpatientView™, 1999-2001

DEXA has become the gold-standard screening test. It's highly accurate and precise, has low radiation, and is readily available. Single photon absorptiometry (SPA) tests can only measure bone density at the forearm, wrist, or finger, it requires a radionuclide, and it's not very precise. Quantitative computer tomography (qCT) is expensive, emits a high radiation dose, and isn't considered that precise. As Figure 8 shows, the growth rate for DEXA tests far exceeds CT and photon absorptiometry tests, which are showing fairly flat trends.

**FIGURE 9: Type of Bone Density Test by Site of Care**



Source: Solucient's OutpatientView™, 1999-2001

### Solucient's Methodology for OutpatientView

A person's experience with the health care system is defined by a series of encounters with health professionals in a variety of settings. An encounter is defined as a one-time, face-to-face meeting between a patient and a health

<sup>2</sup>The procedure codes used for this analysis are: 76070 CT bone density study; G0131 CT bone density-axial skeleton (e.g., hips, pelvis, spine); G0132 CT bone density-peripheral skeleton (e.g., radius, wrist, heel); 76075 DEXA bone density-axial skeleton (e.g., hips, pelvis, spine); 76076 DEXA bone density-peripheral skeleton (e.g., radius, wrist, heel); G0130 SEXA bone density-peripheral skeleton (e.g., radius, wrist, heel); 78350 Bone density-single photon absorptiometry; 78351 Bone density-dual photon absorptiometry.

professional. It is the collection of all procedures, diagnoses, and services performed by a single provider, for a single patient, in one place of service, on a single day. Solucient carefully builds estimates for these encounters to quantify demand for specific services performed within the context of the encounter. These estimates form the basis of Solucient's OutpatientView.

Health care utilization differs dramatically by age, sex, and payer. Solucient creates OutpatientView by carefully constructing utilization rates by all these variables, and then multiplies these rates by their appropriate populations to yield volume estimates. The majority of the utilization rates are built directly from the 2001 Standard Analytical File produced by the Centers for Medicare and Medicaid Services, and 2001 commercial claims data from Solucient's proprietary Claims Data Warehouse. National federal survey data is also integrated to create use rates for the Medicaid and uninsured populations, and as a source for validation.

The OutpatientView database integrates more than 180 million health care service records used to estimate demand and patient volumes for over 6,000 procedure codes and 8,000 diagnosis codes, across three years.

#### About Solucient

Solucient is the nation's leading source of health care business information. Through its products, services and tools, Solucient provides comprehensive, results-oriented, mission critical intelligence that helps organizations drive business growth, manage costs, and deliver high quality care.

Acknowledged throughout the industry as a leader in providing strategic and actionable health care intelligence, Solucient offers unique research, proprietary databases and advanced analytical models to help organizations improve performance, advance clinical care, grow market share, and increase return on investment.

**For more information on the findings and trends in this report, please call your Service Account Manager, or email [pharmainfo@solucient.com](mailto:pharmainfo@solucient.com).**