



# Changing Medicare Utilization of Minimally Invasive Procedures for the Treatment of Chronic Venous Insufficiency

Anand M. Prabhakar, MD, MBA, Alexander S. Misono, MD, MBA, Rahul A. Sheth, MD, Andrew B. Rosenkrantz, MD, Jennifer Hemingway, MS, Danny R. Hughes, PhD, and Richard Duszak, Jr, MD

## ABSTRACT

**Purpose:** To examine changes in the utilization of procedures related to treatment of chronic venous insufficiency (CVI) in the Medicare population.

**Materials and Methods:** Service-specific claims data for phlebectomy, sclerotherapy, and radiofrequency (RF) and laser ablation were identified by using Medicare Physician Supplier Procedure Summary master files from 2005 through 2014. Longitudinal national utilization rates were calculated by using annual Medicare enrollment data from 2005 through 2013. Procedure volumes by specialty group and site of service were analyzed.

**Results:** Total annual claims for these procedures in the Medicare fee-for-service beneficiaries increased from 95,206 to 332,244 (Compound Annual Growth Rate [CAGR], 15%) between 2005 and 2014. Per 1,000 beneficiaries, overall utilization increased annually from 2.8 in 2005 to 9.4 in 2013. Most procedures were performed in the private office setting (92% in 2014). In 2014, radiologists had a 10% relative market share, compared with vascular surgeons, other surgeons, and cardiologists, who had 26%, 25%, and 14% market shares, respectively. Cardiologists had the fastest relative growth, with a CAGR of 51% compared with 23% for radiology, 12% for vascular surgery, and 13% for other surgery. Total venous RF ablation services grew with a CAGR of 31%, with radiology and cardiology growing most rapidly (40% and 79%, respectively). Total venous laser ablation services grew with a CAGR of 22%, with radiology growing 15% and cardiology growing most rapidly at 44%.

**Conclusions:** Utilization of CVI procedures in the Medicare population increased markedly from 2005 through 2014. The overwhelming majority are performed in the private office setting by nonradiologists.

## ABBREVIATIONS

CAGR = compound annual growth rate, CVI = chronic venous insufficiency, PSPS = Physician/Supplier Procedure Summary, RF = radiofrequency

Chronic venous insufficiency (CVI) develops as a result of incompetent valves in the superficial veins of the lower extremities and affects as many as 23% of adults (1). The annual costs of treating CVI in the United States was estimated to be \$200 million in 2001 (2), and the overall annual

US payer burden, including loss of productivity, has been estimated to be as high as \$14.9 billion in 2014 (3).

Surgical treatment for CVI consists of venous ligation, stripping, phlebectomy, and sclerotherapy. Traditional surgical interventions require sedation, even occasionally

From the Department of Radiology, Division of Cardiovascular Imaging (A.M.P., A.S.M.), Harvard Medical School, Massachusetts General Hospital, 55 Fruit St., Gray 2, Boston, MA 02114; Department of Interventional Radiology (R.A.S.), University of Texas M.D. Anderson Cancer Center, Houston, Texas; Department of Radiology (A.B.R.), New York University Langone Medical Center, New York, New York; Harvey L. Neiman Health Policy Institute (J.H., D.R.H.), Washington, DC; Department of Health Administration and Policy (D.R.H.), George Mason University, Fairfax, Virginia; and Department of Radiology and Imaging Sciences (R.D.), Emory University School of Medicine, Atlanta, Georgia. Received December 1, 2016; final revision received

February 27, 2017; accepted February 28, 2017. Address correspondence to A.M.P.; E-mail: [aprabhakar@mgh.harvard.edu](mailto:aprabhakar@mgh.harvard.edu)

A.M.P., A.B.R., and R.D. receive research support from the Harvey L. Neiman Health Policy Institute (Washington, DC). None of the other authors have identified a conflict of interest.

© SIR, 2017

*J Vasc Interv Radiol* 2017; 28:818–824

<http://dx.doi.org/10.1016/j.jvir.2017.02.034>

**Table 1.** Chronic Venous Insufficiency Procedure CPT Codes

CPT Code	Description
36468	Injection of sclerosing solution: spider vein, limb/trunk
36470	Injection of sclerosing solution: single vein
36471	Injection of sclerosing solution: multiple veins, same leg
36475	RF ablation, extremity, percutaneous, first vein
36476	RF ablation, extremity, percutaneous, second and subsequent vein(s)
36478	Laser EVAT, extremity, percutaneous, first vein
36479	Laser EVAT, percutaneous, second and subsequent vein(s)
37765	Stab phlebectomy (10–20 incisions) one extremity
37766	Stab phlebectomy (> 20 incisions), one extremity

CPT = Current Procedural Terminology; EVAT = endovenous ablation therapy; RF = radiofrequency.

general anesthesia, and are associated with complications including prolonged recovery time, bleeding, groin infection, and nerve damage. (4). Minimally invasive techniques using endovascular and radiofrequency (RF) and laser ablation have emerged and have been demonstrated to be equally efficacious (5–8). The benefits of these endovascular interventions include single-session outpatient treatments, shorter recovery time, and reduced postoperative pain.

New technologies are often associated with changes in procedure utilization, site of service, and specialty provider, which may all have implications for patient access and payer coverage decisions. However, the frequency and utilization patterns of these new venous services have not been broadly quantified. Therefore, the aims of the present study were to identify recent temporal trends in the utilization of CVI treatment procedures in the Medicare population, with attention to conventional versus new minimally invasive procedures as well as performance by site of service and physician specialty.

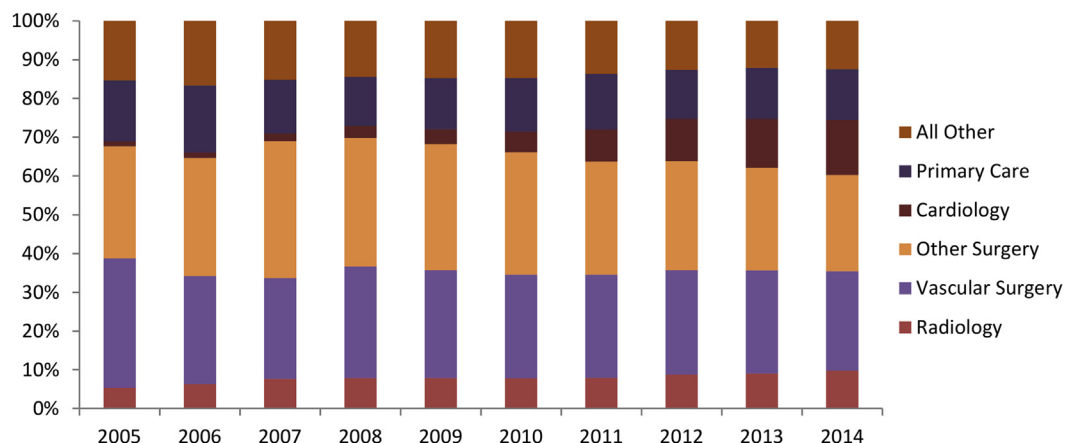
## MATERIALS AND METHODS

This study of aggregated Medicare claims data from Centers for Medicare and Medicaid Services–designated Public Use Files was granted institutional review board exempt status.

National Medicare claims tracking methodology for imaging utilization was based on previously used methodology (9–12). Annual Medicare Physician/Supplier Procedure Summary (PSPS) master files were obtained from the Centers for Medicare and Medicaid Services for years 2005 (the first year for which unique procedural codes for index services existed) through 2014. These files contain aggregated Part B Medicare billing data for all claims submitted by physicians and other providers nationally. Fields include aggregate service count information on procedures by Current Procedural Terminology code, billing provider specialty, and patient location at the time of service.

PSPS master files include summary information of all claims for all beneficiaries in the traditional Medicare fee-for-service program, which currently represents approximately 70% of all Medicare supplementary medical insurance enrollees. Between 2005 and 2013, enrollment each year remained within 32.0 to 34.0 million (9); 2014 enrollment figures had not yet been released as of the time of manuscript preparation. These files contain aggregated 100% Part B Medicare billing data for all claims submitted by physicians and other providers nationally.

Health care providers are identified within PSPS master files with self-reported specialty and profession codes. For this study, specialty codes were grouped as follows: diagnostic radiology (no. 30), nuclear medicine (no. 36), and interventional radiology (no. 94) in a “radiology” category; vascular surgery (no. 77) was categorized separately, as was cardiology (no. 6). General surgery (no. 2), cardiac surgery (no. 78), and thoracic surgery (no. 33) were grouped in an “other surgery” category. Family practice (no. 8), general practice (no. 1), and internal medicine (no. 11) were grouped



**Figure 1.** Medicare fee-for-service CVI procedures by provider type (2005–2014).

Download English Version:

<https://daneshyari.com/en/article/5727573>

Download Persian Version:

<https://daneshyari.com/article/5727573>

[Daneshyari.com](https://daneshyari.com)