

A Primer on Office-Based Specialty Care, Other Major Ambulatory Care Settings, and Medicare Reimbursement

Prepared for:

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Executive Summary

Ambulatory care refers to care rendered on an outpatient basis. The three major ambulatory care settings are the physician's office, hospital outpatient department (HOPD), and ambulatory surgery center (ASC). Similar services may be provided safely in each of these settings, offering individuals multiple access points to receive care.

Physicians with advanced training who focus their practice on a specific area of medicine or body system provide office-based specialty care. This level of care often involves providing critical and sophisticated services to diagnose, treat, and manage complex health conditions, disorders, and diseases. Physicians and qualified healthcare professionals (QHPs) also may have focused their education, training, licensure, and practice on providing care in an office-based setting. Though the clinical efficacy of most services provided in ambulatory settings is established,¹ the difference in outcomes or quality benefits between ambulatory sites of care have not been fully documented. Nonetheless, noted benefits of office-based care include improved access, lower costs and cost sharing, greater physician autonomy and control, provider efficiency, consistent or improved patient satisfaction, scheduling flexibilities, and increased comfort for patients.

There are important distinctions between the three major outpatient care settings and significant differences in how professional and facility providers are paid for their services. The United Specialists for Patient Access (USPA) engaged The Moran Company, a Health Management Associates (HMA) company, to provide a lay explanation of these settings and an overview of Medicare reimbursement mechanisms, including payments made to physicians versus fees paid to facilities.

Across all settings, the services that a physician or QHP provides to Medicare beneficiaries enrolled in the traditional Medicare program (i.e., fee-for-service [FFS]) are reimbursed under the Medicare Physician Fee Schedule (PFS). These services are commonly referred to as professional services. When a physician or QHP provides an office-based service, the technical expense necessary to furnish the service also is included in the reimbursement amount. When a physician or QHP provides a service in a facility setting (e.g., HOPD or ASC), the clinician is reimbursed for their professional service under the PFS, and the facility receives a separate payment (the facility fee) through a different reimbursement system, such as the Hospital Outpatient Prospective Payment System (OPPS) or the ASC payment system for the technical expense necessary to furnish the service. In brief:

- Office setting. When a physician or QHP provides a service in the office setting, a *single* payment is made under the PFS to the healthcare professional and includes both the professional service and technical expenses (or relative resource costs) attributable to a service provided to the patient.
- HOPD/ASC setting. The total amount Medicare pays for a service provided in the HOPD or ASC setting is equal to the payment made to the facility for the technical expenses (through the hospital outpatient or ASC prospective payment systems) *plus* reimbursement to the physician or QHP for the professional service paid through the PFS.

Introduction

Overview of Ambulatory Care Settings

Ambulatory care encompasses all healthcare services provided to individuals on an outpatient basis; these services do not typically require an overnight stay in a hospital or other facility.^{2,3,4} Major ambulatory care settings include the physician office, HOPD and ASC.⁵ Individuals typically receive nonemergent care in these settings. Similar services and procedures may be provided safely in each of these settings; however, each setting has a distinct Medicare payment system upon which reimbursement is based.

In general terms, a physician's office is a setting (other than a hospital, skilled nursing center, or other facility setting) where the medical professional⁶ is legally authorized and licensed by the state to practice medicine and provide outpatient care.⁷ These services include evaluation, management, diagnosis, and treatment of an illness or injury. Physicians and QHPs are professional, non-institutional suppliers of care. Physician offices are a non-facility place of service (POS) and may be referred to as freestanding, private practice, or independent physician offices (IPOs) as they are physician-owned and not financially integrated with another entity such as a hospital.⁸

Physician offices may comprise a single physician (solo practice) or small practice, a single-specialty group practice with multiple physicians, or a multispecialty group practice. Non-physician QHPs may also independently provide services in the office setting. Such professionals might include physical therapists, clinical psychologists, and physician assistants, among others. For this reason, offices are also referred to as freestanding clinician offices.

A recent American Medical Association (AMA) survey of physician practice arrangements identified that approximately 49% of physicians worked in a private practice in 2020, down from approximately 60% since 2012 (an 11% decline).⁹ Private practice physicians choose from a variety of business structures, including limited liability companies (LLCs), S corporations, C corporations, partnerships and sole proprietorships.¹⁰ The majority of practices, 72.9% of those included in the AMA survey, are comprised of fewer than 50 physicians.¹¹ The Small Business Administration (SBA) defines a small business as an independent business having fewer than 500 employees,¹² among other industry specific standards. It is accordingly likely that a significant number of private physician practices qualify as a small business. An increase in practices owned by hospitals and in employed physicians has also been documented.^{13,14,15}

Hospitals are institutional providers of care. There are different types of hospitals (e.g., general acute care, psychiatric care, long-term care, etc.), and hospitals have different departments. Hospitals and their departments are considered facility places of service. An HOPD is a department where diagnostic, treatment, and rehabilitation services are provided to patients who are not formally admitted as hospital inpatients. HOPDs may be located on a hospital's main campus (on-campus) or may be located apart from the main campus, which is referred to as off-campus. The hospital's emergency department (ED) provides emergency diagnosis and treatment.¹⁶

An ASC is a facility where same day operations (and services provided integral to surgery) or certain diagnostic procedures, which often require sedation or anesthesia, are provided on an outpatient basis.¹⁷ ASCs may be freestanding, physician-owned, or hospital-operated¹⁸ and may provide services concentrated within a specific surgical discipline or offer multidisciplinary same day surgical care. ASCs tend to be equipped to provide eye, nervous system, musculoskeletal, digestive, cardiovascular, and genitourinary system same day procedures.¹⁹

Services Provided in Ambulatory Care Settings

Advances in technology and clinical practice have driven a shift in care from the inpatient hospital setting to ambulatory care settings in recent years.²⁰ The Centers for Medicare & Medicaid Services (CMS) continues to identify complex surgical procedures that the agency will reimburse when performed in a hospital outpatient department rather than in an inpatient hospital setting²¹ and intends to further expand the list of services deemed safe to perform in other ambulatory surgical settings as medical practice and technology continues to advance.²² Given advances in technology, techniques, and standards of care, both primary care and specialty physicians are providing an increasingly complex scope of services in ambulatory settings. Nonetheless, research has identified that, for certain service categories, volume in the physician/QHP office has begun to fall, whereas volume in the HOPD setting has increased.²³ This shift may be attributable to consolidation and more physicians now employed by hospitals rather than in private practices.

Primary and Specialty Care

Physicians and QHPs provide primary and specialty care in all sites of service.

Primary care involves a comprehensive and continuous focus on overall health and well-being (e.g., preventive services, treatment of common conditions), care coordination, and management services,²⁴ often serving as a patient's first contact with the healthcare system.²⁵ Specialty care is provided by physicians with advanced training in a particular discipline and focus on a specific area of medicine or body system (e.g., cardiology, radiation oncology, urology, vascular surgery). Specialty care often involves the provision of critical and sophisticated services to diagnose, treat, and manage complex conditions, disorders, and diseases.

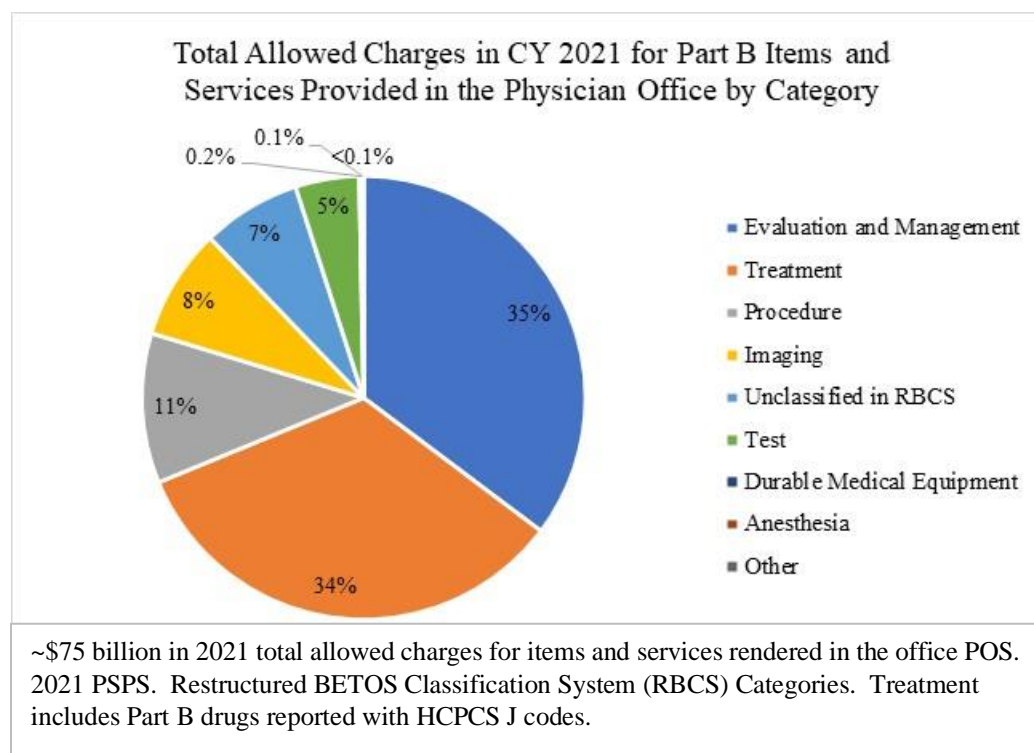
Office-Based Specialty Care

Specialty practices offer a breadth of services spanning all disciplines of medicine. Specialists generally are consulted for specific treatment or diagnostic advice, management of chronic conditions, or to perform specific procedures.²⁶ Services offered within these practices might range from outpatient physical therapy (PT) to advanced medical imaging and tumor biopsies, to care for conditions that require intensive visits, such as cancer, end stage renal disease, cardiac, and vascular conditions, among others. To deliver specialized treatments, physicians might own and operate sophisticated, high-technology equipment in their offices or other freestanding settings; for example, intensity modulated radiation therapy or proton beam treatment to target radiation therapy to cancer cells while sparing normal tissue. Specialists' offices also may be required to meet core safety standards, regulations, and accreditation requirements to maintain

surgical suites where they can perform minimally invasive procedures or surgical interventions.^{27,28}

As Figure 1 illustrates, the top three service categories (by allowed charges) provided in the physician office setting across all specialties were evaluation and management (E/M) services; treatment services such as injections, infusions, chemotherapy, radiation oncology, dialysis related services, among others; and procedures. Collectively, E/M, treatments, and procedures represent 80 percent of total allowed charges on items and services provided in the physician office setting in calendar year 2021.

Figure 1. In-Office Services Provided to Medicare FFS Beneficiaries, 2021.



Descriptive examples of services provided by specialties represented in the USPA, which commissioned this primer, were written and provided by USPA representatives, and are included in Appendix A.

Noted Benefits of Office-based Specialty Care

Over the last decade it has become common for minimally invasive procedures and treatments to be performed in office-based specialty settings rather than hospitals.²⁹ Furthermore, CMS and the Medicare Payment Advisory Commission (MedPAC) typically encourage the migration of services to the lower cost setting when safe and appropriate to do so. However, MedPAC also

has raised concern that consolidation of physician practices with hospitals may have contributed to volume declines in the office and increases in the HOPD.³⁰

Though the effects of ambulatory sites of service on outcomes and quality of care have yet to be fully documented, a sampling of available research suggests that office-based procedures offer several advantages to patients and providers. These benefits may include economic value related to the cost of care and lower copayments, as well as noneconomic value, including greater efficiency and potentially increased patient engagement and satisfaction.^{31,32}

For example, one study reviewed the logistics, finances, and potential benefits of treating patients in outpatient interventional suites rather than hospitals.³³ Findings from this study suggest that patients are more comfortable in the office than the hospital setting and experience faster and more flexible scheduling.³⁴ The study also indicates higher levels of work satisfaction for physicians and less work-related burnout, a critical area of focus given the levels of burnout that emerged during the COVID-19 pandemic.³⁵ Additionally, in-office care may improve access opportunities as more procedures can be done during the office working hours than in a similar timeframe at a hospital.³⁶

Another study, initially conducted in 2013 and updated in 2017, analyzed patients with ESRD who received dialysis vascular access (DVA) treatment in free-standing office settings compared with DVA treatment in an HOPD.^{37, 38} Results from both studies indicate that patients who were treated in the freestanding office-based center had significantly better outcomes—fewer hospitalizations and vascular access-related infections—than people treated in a hospital outpatient department.^{39,40} Studies on orthopedic interventions, such as hand surgery, identified positive health outcomes, high patient satisfaction, and the potential for cost savings when orthopedic treatment occurs in the office setting.⁴¹ Further research on outcomes and differences in outcomes by place of service is necessary, particularly as other studies have identified that Medicare beneficiaries treated in HOPDs are more likely to be lower income or sicker than patients treated in the physician office setting.⁴²

The Role of COVID-19 in Highlighting the Importance of Ambulatory Care

As the COVID-19 PHE revealed, beneficiary access to outpatient care settings is essential to care delivery. The pandemic also highlighted the need to ensure that outpatient facilities are properly staffed and equipped with necessary technology and other site of care flexibilities to ensure continuity of care. As acute care hospitals delayed or canceled non-emergent services to address workforce shortages and provide surge capacity for COVID-19 patients,⁴³ the ability to meet patient needs in other settings of care was critical.

At the onset of the PHE, many physicians' offices closed temporarily to modify their treatment protocols to safely accommodate in-person visits or telemedicine appointments.^{44,45} Temporary, yet sudden, closures or capacity constraints led to a need for flexibility to treat patients in a variety of outpatient settings using communication-based technologies to meet specific patient needs. PHE flexibilities allowed hospital services, like essential operations, to be performed in ASCs.⁴⁶ CMS provided guidance on flexibilities related to surgical and medical procedures, once

primarily performed in a hospital or HOPD, that could be safely performed in the office or ASC setting.⁴⁷

The use of telemedicine provided consistent care management, specifically for patients with chronic health conditions and behavioral health conditions that need continuous monitoring.⁴⁸ CMS established flexibilities that allowed office-based providers to perform procedures for beneficiaries needing emergent or urgent attention to save their lives, preserve organ function, and avoid further harms from underlying conditions or diseases.^{49,50} Without flexibilities in place, the mortality rates for patients with chronic diseases, like diabetes,⁵¹ were likely to rise.⁵² Evidence appears to suggest that patients seeking care from specialists managing their diabetes, prenatal care, emergency ophthalmological disorders, couple and family therapies, colorectal surgery, and cancer, among others, were satisfied with the care they received via telemedicine during the COVID-19 PHE.⁵³ These specialty practices maintained an uninterrupted follow-up care routine for people with complex conditions throughout the pandemic and beyond.⁵⁴

Care Provided in Rural Areas

Ambulatory care, including office-based specialty care, is a critical component of rural healthcare in the US as well. A recent study found, however, that rural Medicare beneficiaries have less access to ambulatory care specialists. This study also revealed that reduced access to ambulatory care specialists contributes to the sizable difference in preventable hospitalization and mortality rates between rural and urban beneficiaries. The authors note that policies to expand primary care access in rural areas without specialty care access are unlikely to reduce rural health disparities.⁵⁵

Overview of Medicare Reimbursement for Ambulatory Care

CMS is the single largest purchaser of healthcare in the US, making Medicare systems of payment critically important to the healthcare ecosystem. More than half of the 65 million Medicare beneficiaries⁵⁶ are enrolled in “traditional Medicare.”⁵⁷ Under traditional Medicare, Part A covers hospital services provided to inpatients (beneficiaries who stay in the hospital), hospice, and some home health services, whereas Part B covers physician services and medically necessary outpatient care. Suppliers and Providers of healthcare services are paid on a FFS basis, meaning they are reimbursed for each service provided or, in some instances, for a prospectively set bundle of services.

Medicare FFS reimbursement systems are complicated and nuanced, but, in broad terms, pay suppliers and providers of outpatient services for two overarching categories of fees: payment to the physician or QHP for their professional services and payment for the technical services or relative resource costs incurred to furnish a service to a patient. The professional service provided in the office, hospital (e.g., HOPD), or ASC setting is reimbursed under the PFS. The

resource costs used to provide care (the technical aspect of the service) may be paid under the PFS or other ambulatory payment systems, such as the OPSS or ASC payment system (Table 1).

Table 1. Overview of Medicare Payment Systems and Professional v Technical Payment

Medicare Payment System	Includes Professional Service Payment	Includes Technical Service*
Physician Fee Schedule (PFS)	✓	✓
Hospital Outpatient Prospective Payment System (OPPS)	✗	✓
Ambulatory Surgical Center (ASC) Payment System	✗	✓

*In this table, the technical service under the PFS refers to the non-facility practice expense (PE) relative value unit (RVU) which is the PE RVU used to calculate payment for office-based services. The technical service also refers to services reported with a technical component (TC) modifier and standalone technical-only codes paid under the PFS. The technical service under OPSS refers to the ambulatory payment classification (APC) payment amount paid for services provided in a hospital outpatient department setting. The technical service under ASC payment system refers to the amount paid to the ASC for the covered service. Under traditional Medicare, physicians/QHPs are reimbursed for their professional service through the PFS across all sites of service in which they practice, including the office, HOPD or ASC with payment to the professional varied based on either the non-facility or facility PE RVU as discussed in the PFS section of this primer. Other payment mechanisms or adjustments not discussed.

Professional Service

The professional service reflects the time the physician spends providing a clinical service or procedure, as well as the intensity (skill, effort, judgment, stress) associated with doing so. Reimbursement to the professional for this “physician work,” along with some amount of payment intended to cover practice expenses (PE) and of maintaining professional liability insurance (PLI), may be referred to as the professional fee. The amount paid to the professional differs based on where the services is provided and if the professional incurs the costs to provide care, such as when furnished in an office setting.

Technical Service

The relative resource costs incurred to furnish a service are sometimes referred to as the technical service or technical expense. These expenses may include nursing and clinical staff services related to patient care, medical and surgical procedure rooms, equipment, and single use medical supplies or other costs attributable to the provision of a service to a patient. Technical expenses or direct practices expenses are paid under the PFS when a physician or QHP provides the service in their office or other freestanding setting. Certain other types of freestanding suppliers, such as independent diagnostic testing facilities (IDTFs), also receive technical reimbursement under the PFS.

When a physician or QHP cares for patients in a facility setting like in a hospital or an ASC, the facility incurs the technical expense (and other operating expenses) to furnish care and is reimbursed through the OPSS and ASC payment system. When care is provided in a facility

setting, under traditional Medicare, two healthcare claims or bills are generated. One claim is submitted by the physician or QHP for the professional service provided in a facility setting, and the facility submits a separate claim for the technical service.

When the physician or QHP provides care in the office, only that provider submits a claim to Medicare, and reimbursement to the healthcare professional is for the full service, including both the physician work and reimbursement for the technical expenses to provide the service in the office setting.⁵⁸

Ambulatory Care Reimbursement Involves Weights Multiplied by a Conversion Factor

Under each ambulatory care payment system, “weights” represent the relative resource intensity of different services or service components. These weights are multiplied by a conversion factor to arrive at national average payment amounts.

Significantly different conceptual, data inputs, and methodologies are used to calculate weights, and a unique conversion factor is applied to each system, contributing to material differences in rate setting across ambulatory payment systems. To ensure that changes in methodology and payment amounts remain within total specified levels, each payment system incorporates different mechanisms to maintain budget neutrality.⁵⁹ Further, the conversion factor for the OPPS and ASC payment systems is updated annually to account for cost increases, but the PFS conversion factor is not.⁶⁰

Over the last several years, physicians and other clinicians reimbursed under the PFS are increasingly concerned with PFS payment volatility due to adjustments resulting from budget neutrality requirements. For example, in 2021 significant reductions to the conversion factor occurred to budget-neutralize increases in valuation of the evaluation & management (E/M) office visit code set.⁶¹ Beginning in 2022, adjustments to practice expense relative value units were transitioned into the payment system to budget-neutralize clinical labor pricing updates. In general, redistributive effects of these policies have disadvantaged certain office-based specialties.⁶²

The Physician Fee Schedule

The PFS is a list of billing codes and associated amounts used to calculate payment for individual services. Reimbursement is based on the relative resources used to provide a service and reflects three components: physician work, practice expenses (direct and indirect), and professional liability insurance. For each billing code used to report a medical service or procedure, each component is assigned a weight or an RVU. CMS publishes two sets of PE RVUs (facility and non-facility) to account for the different costs a physician incurs based on where the care is rendered. A facility PE RVU is assigned when the physician provides a service in a facility place of service such as a hospital or ASC. A non-facility PE RVU is used to calculate the payment amount when the service is provided in a physician’s office or other freestanding setting and is usually higher than the facility PE RVU because the physician incurs

the full cost of the service. The three RVU components are added together and converted to a dollar amount for Medicare reimbursement using a conversion factor.⁶³

Hospital Outpatient Prospective Payment System

Hospitals are reimbursed for care provided to beneficiaries on an outpatient basis under the OPSS. Payment to the hospital for outpatient services is intended to reimburse the hospital for the operating and relative costs⁶⁴ associated with the provision of care (such as nursing and clinical staff services, medical and operating rooms, equipment, and supplies) provided to a beneficiary on a hospital outpatient basis. CMS uses a process to group services into Ambulatory Payment Classifications (APCs) under OPSS based on clinical and cost similarity.

CMS creates weights for each APC and applies an OPSS-specific conversion factor to translate weights into dollar amounts. CMS pays roughly the weighted average amount across all the services in each APC. The OPSS fee schedule reflects the technical service, or amount paid to the facility, and does not include the physician's professional service. A separate payment is made to the physician or QHP under the PFS.

Ambulatory Surgery Center Payment System

ASCs are separately reimbursed for covered surgical procedures, certain surgery-like procedures, and some ancillary⁶⁵ services integral to surgical procedures under the ASC payment system. Services that CMS has determined can be safely delivered in an ASC⁶⁶ are eligible for reimbursement. To set payment amounts for ASC services, CMS scales down the APC relative weights under OPSS and refers to the scaled weights as the ASC relative payment weight. CMS then applies an ASC-specific conversion factor to translate weights into dollar amounts for ASC services.⁶⁷ Similar to the OPSS, payment under the ASC fee schedule reflects the technical service or facility fee and does not include the physician's professional service. A separate payment is made to the physician or QHP under the PFS for their professional services.

Clinical Description of Service Examples

Descriptive examples of services provided by specialties represented in the USPA, along with other information as written and provided by USPA representatives are included in Appendix A. USPA is a coalition of practitioners and affiliated entities involved in providing office-based specialty care including cardiology, interventional nephrology, interventional radiology, physical therapy, radiation oncology and dialysis vascular access.

More than 500,000 physicians, QHPs and other suppliers submitted claims to Medicare for services furnished to beneficiaries in an office setting in calendar year 2021.⁶⁸ Within the specialties of interest to USPA, a count of National Provider Identifiers (NPIs) finds the following specialty billing counts in an office place of service: cardiology (17,872), diagnostic radiology (19,381), interventional radiology (1,253), physical therapy (68,497), urology (8,000), radiation oncology (2,267), and vascular surgery (3,127).

- ¹ By nature of obtaining a Category I Current Procedural Terminology (CPT)® code, the clinical efficacy of the procedure or service is documented in the literature and meets the literature requirements set forth by the CPT Editorial Panel. For more information, go to: <https://www.ama-assn.org/practice-management/cpt/criteria-cpt-category-i-and-category-iii-codes>.
- ² Centers for Medicare & Medicaid Services. Glossary. Available at: <https://www.cms.gov/apps/glossary/default.asp?Letter=A&Language=English>. Accessed April 6, 2023.
- ³ Medicare Payment Advisory Commission (MedPAC). Ambulatory Care Settings. Available at: https://www.medpac.gov/research_area/ambulatory-care-settings/. Accessed April 10, 2023.
- ⁴ Certain observation services may require an overnight stay, a patient’s care is generally no longer outpatient if care in the hospital lasts more than “two midnights.”
- ⁵ Providers of care enroll in the Medicare program and meet different criteria or definitions under CMS rules and regulations to provide services to beneficiaries and submit claims to Medicare for reimbursement. Rules, regulations or other criteria for enrollment and ownership notification requirements are not discussed in this primer.
- ⁶ A physician may be a doctor of medicine (MD) or osteopathy (DO), a doctor of dental surgery or dental medicine, a doctor of podiatric medicine, a doctor of optometry, or a chiropractor, as defined in section 1861(r) of the Social Security Act.
- ⁷ Full definition: Location, other than a hospital, skilled nursing facility (SNF), military treatment facility, community health center, state or local public health clinic, or intermediate care facility (ICF), where the health professional routinely provides health examinations, diagnosis, and treatment of illness or injury on an ambulatory basis. Centers for Medicare & Medicaid Services. Glossary. Available at: <https://www.cms.gov/apps/glossary/default.asp?Letter=A&Language=English>. Accessed April 6, 2023.
- ⁸ American College of Physicians. Medical Practice Types. Available at: <https://www.acponline.org/about-acp/about-internal-medicine/career-paths/residency-career-counseling/resident-career-counseling-guidance-and-tips/medical-practice-types>. Accessed April 10, 2023.
- ⁹ American Medical Association (AMA). (2021). Policy Research Perspectives. Recent Changes in Physician Practice Arrangements: Private Practice Dropped to Less Than 50 Percent of Physicians in 2020. Available at: <https://www.ama-assn.org/system/files/2021-05/2020-prp-physician-practice-arrangements.pdf>.
- ¹⁰ *Ibid.*
- ¹¹ *Ibid.*
- ¹² U.S. Small Business Administration Office of Advocacy. (2016). Frequently Asked Questions. Available at: https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf.
- ¹³ American Medical Association (AMA). (2021). Policy Research Perspectives. Recent Changes in Physician Practice Arrangements: Private Practice Dropped to Less Than 50 Percent of Physicians in 2020. Available at: <https://www.ama-assn.org/system/files/2021-05/2020-prp-physician-practice-arrangements.pdf>.
- ¹⁴ American Medical Association (AMA). (2021, May 5). AMA Analysis Shows Most Physicians Work Outside of Private Practice. Available at: <https://www.ama-assn.org/press-center/press-releases/ama-analysis-shows-most-physicians-work-outside-private-practice#:~:text=private%20equity%20firms,-,Practice%20size,of%2010%20or%20fewer%20physicians>. Accessed April 10, 2023.
- ¹⁵ Hait A. (2021, January 19). The Majority of US Businesses Have Fewer than Five Employees. Available at: <https://www.census.gov/library/stories/2021/01/what-is-a-small-business.html>. Accessed March 31, 2023.
- ¹⁶ Centers for Medicare & Medicaid Services. Place of Service Codes for Professional Claims. Available at: <https://www.cms.gov/medicare/medicare-fee-for-service-payment/physicianfeesched/downloads/website-pos-database.pdf>. Accessed April 10, 2023.
- ¹⁷ CMS defines an ASC as a freestanding facility, other than a physician’s office, where surgical and diagnostic services are provided on an ambulatory basis in the *Medicare Claims Processing Manual*, Chapter 26. Available at: <https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/clm104c26pdf.pdf>. Accessed April 10, 2023.
- ¹⁸ Cubanski J, Neuman T. (2023, January 19). What to Know About Medicare Spending and Financing. Available at: [https://www.kff.org/medicare/issue-brief/what-to-know-about-medicare-spending-and-financing/#:~:text=In%202021%2C%20Medicare%20spending%2C%20net,defense%20spending%20\(Figure%202\)https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/payment-basics/medpac_payment_basics_20_asc_final_sec.pdf](https://www.kff.org/medicare/issue-brief/what-to-know-about-medicare-spending-and-financing/#:~:text=In%202021%2C%20Medicare%20spending%2C%20net,defense%20spending%20(Figure%202)https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/payment-basics/medpac_payment_basics_20_asc_final_sec.pdf). Accessed April 10, 2023.

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- ²⁰ Kaiser Family Foundation. What to Know about Medicare Spending and Financing. Accessed March 2023 at: <https://www.kff.org/medicare/issue-brief/what-to-know-about-medicare-spending-and-financing/>. This is a repeat of a previous citation.
- ²¹ Centers for Medicare & Medicaid Services. (2022, July 15). CMS Fact Sheet. CY 2023 Medicare Hospital Outpatient Prospective Payment System and Ambulatory Surgical Center Payment System Proposed Rule (CMS 1772-P). Available at: <https://www.cms.gov/newsroom/fact-sheets/cy-2023-medicare-hospital-outpatient-prospective-payment-system-and-ambulatory-surgical-center>. Accessed April 10, 2023.
- ²² Department of Health and Human Services. (2022, November 23). Medicare Program: Hospital Outpatient Prospective Payment System and Ambulatory Surgical Center Payment Systems and Quality Reporting Programs Final Rule with comment period. 87 FR 71748. Available at <https://www.govinfo.gov/content/pkg/FR-2022-11-23/pdf/2022-23918.pdf>.
- ²³ Medicare Payment Advisory Commission. (2022, June). Report to the Congress: Medicare and the Health Care Delivery System, Chapter 6. Available at: https://www.medpac.gov/wp-content/uploads/2022/06/Jun22_MedPAC_Report_to_Congress_v2_SEC.pdf. Accessed March 31, 2023.
- ²⁴ Healthcare.gov. Glossary. Available at: <https://www.healthcare.gov/glossary/>
- ²⁵ AAFP. Primary Care. Accessed March 2023 at: <https://www.aafp.org/about/policies/all/primary-care.html>
- ²⁶ Edwards, S., et al. (2014). Trends and Quality of Care in Outpatient Visits to Generalist and Specialist Physicians Delivering Primary Care in the United States, 1997–2010. *Journal of General Internal Medicine*. 29 (6): pp. 947-955. Accessed February 2023 via <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4026490/>
- ²⁷ American College of Surgeons. Patient Safety Principles for Office-Based surgery. Accessed March 2023 at: <https://www.facs.org/for-patients/patient-resources/patient-safety/office-based-surgery/>.
- ²⁸ Physicians may also own and operate other entities that are independent from their office, such as Independent Diagnostic Testing Facilities (IDTFs) or Ambulatory Surgical Centers (ASCs). Ownership arrangements, associated disclosure, regulatory or legal requirements regarding ownership are not discussed here.
- ²⁹ Dippel, E. (2020, December). Why I Choose an Office-Based Lab. Cardiovascular Learning Network: Vascular Disease Management. Accessed March 2023 via <https://www.hmpgloballearningnetwork.com/site/vdm/content/why-i-choose-have-office-based-lab>
- ³⁰ Medicare Payment Advisory Commission (MedPAC). Report to the Congress: Medicare and the Health Care Delivery System. Chapter 6. June 2022.
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- ³³ *Ibid.*
- ³⁴ *Ibid.*
- ³⁵ *Ibid.*
- ³⁶ *Ibid.*
- ³⁷ El-Gamil, A. Dobson, A., et al. (2017, September, 2). What is the best setting for receiving dialysis vascular access repair and maintenance services? *Journal of Vascular Access* 18(6):473-481. doi: 10.5301/jva.5000790. Accessed March 2023 via https://www.dialysisvascularaccess.org/_files/ugd/4d8e3a_e5ef7d7139264a7c9bcd6c361ab36693.pdf
- ³⁸ Dobson, A., et al. (2013). Clinical and Economic Value of Performing Dialysis Vascular Access Procedures in a Freestanding Office-Based Center as Compared with the Hospital Outpatient Department among Medicare ESRD Beneficiaries. *Seminars in Dialysis* (26);5, pp 624-632. Accessed March, 2023 via <https://onlinelibrary.wiley.com/doi/epdf/10.1111/sdi.12120>

³⁹ (El-Gamil, et al., 2017)

⁴⁰ *Ibid.*

⁴¹ Wide-awake, local anesthesia, no tourniquet (WALANT)

⁴² American Hospital Association. (2021, April). Comparison of Care in Hospital Outpatient Departments and Independent Physician Offices. Accessed March 2023 at: <https://www.aha.org/guidesreports/2021-04-14-comparison-care-hospital-outpatient-departments-and-independent-physician>

⁴³ Sathya, Chethan. (2020, March 16). “Your elective surgery will be canceled. It’s for everyone’s good”. The Washington Post. Available at: <https://www.washingtonpost.com/outlook/2020/03/16/your-elective-surgery-will-be-canceled-its-everyones-good/>

⁴⁴ Mehrotra, A. et al. (2021, February 20). The Impact of COVID-19 on Outpatient Visits in 2020: Visits Remained Stable, Despite a Late Surge in Cases. The Commonwealth Fund. Accessed February 2023 <https://www.commonwealthfund.org/publications/2021/feb/impact-covid-19-outpatient-visits-2020-visits-stable-despite-late-surge>

⁴⁵ Mohammad, I. et al. (2020, July 17). Ambulatory care practice in the COVID-19 era: Redesigning clinical services and experiential learning. *J Am Coll Clin Pharm*. Vol 3(6):1129-1137. doi: 10.1002/jac5.1276. Epub 2020 Jul 7. PMID: 32838219; PMCID: PMC7280713.

⁴⁶ ASPE. (2022, May 3). Impact of the COVID-19 Pandemic on the Hospital and Outpatient Clinician Workforce. Accessed February 2023 <https://aspe.hhs.gov/sites/default/files/documents/9cc72124abd9ea25d58a22c7692dcc6/aspe-covid-workforce-report.pdf>

⁴⁷ Centers for Medicare and Medicaid Services (CMS). (n.d.). CMS Adult Elective Surgery and Procedures Recommendations: Limit all non-essential planned surgeries and procedures, including dental, until further notice. Retrieved March 2023 via <https://www.cms.gov/files/document/covid-elective-surgery-recommendations.pdf>.

⁴⁸ Núñez A, et al. (2021 May 14). Access to Healthcare during COVID-19. *Int J Environ Res Public Health*. Vol 18(6):2980. doi: 10.3390/ijerph18062980. PMID: 33799417; PMCID: PMC7999346

⁴⁹ *Ibid.*

⁵⁰ The decisions to move forward with such procedures were still the responsibility of health systems, local and state governments, and the physician directly responsible for the patient.

⁵¹ Centers for Medicare and Medicaid Services (CMS). (2020, August 17). Key Components for Continued COVID-19 Management for Dialysis Facilities. Memorandum to Regional Offices, State Survey Agency Directors, Dialysis Facilities, Stakeholders. Accessed March 2023 via <https://www.cms.gov/files/document/qso-20-36-esrd.pdf>.

⁵² (Mohammad, et al., 2020)

⁵³ *Ibid.*

⁵⁴ *Ibid.*

⁵⁵ Johnston KJ. (2019, December). Lack of Access to Specialists Associated with Mortality and Preventable Hospitalizations of Rural Medicare Beneficiaries. *Health Affairs*. 38(12). <https://doi.org/10.1377/hlthaff.2019.00838>

⁵⁶ Centers for Medicare and Medicaid Services Fast Facts. August 2022 Version. Available at: <https://data.cms.gov/sites/default/files/2022-08/4f0176a6-d634-47c1-8447-b074f014079a/CMSFastFactsAug2022.pdf>

⁵⁷ *Ibid.*

⁵⁸ Services reported with a technical component (TC) or professional component (-26) modifier may be “split” with different freestanding providers submitting separate claims under the PFS for the component of the service the respective provider furnishes.

⁵⁹ PFS budget neutrality requirements are specified under section 1848(c)(2)(B)(ii)(II) of the Act which requires that increases or decreases in RVUs may not cause the amount of Medicare Part B expenditures for the year to differ by more than \$20 million from what expenditures would have been in the absence of these changes. If this threshold is exceeded, adjustments are made to preserve budget neutrality (87 FR 69404).

⁶⁰ MedPAC and PFS stakeholders have called for a physician payment updated tied to the Medicare Economic Index (MEI). Legislation was introduced in April 2023 to provide an annual physician payment update tied to inflation.

⁶¹ Congressional action partially alleviated a budget neutral reduction to the conversion factor in that year and subsequent years. From 2020 to 2021 the conversion factor decreased 3.3% instead of an anticipated almost 11 percent cut.

⁶² Department of Health and Human Services. (2021, November 19). Medicare Program: CY2022 Payment Policies Under the Physician Fee Schedule and Other Changes to Part B Payment Policies; 86 FR 64996, page 65621. Available at <https://www.govinfo.gov/content/pkg/FR-2021-11-19/pdf/2021-23972.pdf>.

⁶³ The national average payment is calculated as: (Physician work RVU + Practice Expense RVU_{facility or nonfacility} + Professional Liability RVU) * CF.

⁶⁴ Under OPSS the concept of cost is derived from hospital reported charges reduced to costs using hospital cost to charge ratios calculated from hospital cost reports. In this manner, cost under OPSS is a payment system term and does not reflect the actual cost to hospitals of providing outpatient medical services and procedures.

⁶⁵ ASC covered ancillary items and services that are integral to ASC covered surgical procedures include: brachytherapy sources, certain implantable items that have pass-through payment status under the OPSS, certain contractor-priced items, certain drugs and biologicals for which separate payment is allowed under the OPSS, certain radiology services for which separate payment is allowed under the OPSS; and non-opioid pain management drugs that function as a supply when used in a surgical procedure.

⁶⁶ Covered ASC surgical services do not typically require an overnight stay and are not expected to require active monitoring at midnight following the performance of the procedure, among other standards or exclusion criteria.

⁶⁷ In some instances, ASC payment for a service is based on the non-facility PE RVU under the PFS.

⁶⁸ Counts of NPIs submitting Medicare FFS claims with an office place of service (POS 11), 2021 100% Carrier SAF. NPIs with less than 11 claims billing POS 11 have been removed from this count. About 0.4% of NPIs billed claims under 2 or more specialties (with at least 11 claims in each specialty), these NPIs are included in counts for both specialties.

Appendix A.¹ Clinical Descriptions of Specialty Care Services Examples Written by USPA Representatives²

¹ Images presented throughout Appendix A are Adobe stock images unless otherwise noted.

² Descriptive examples and other information included in Appendix A were written and provided by USPA. The content does not reflect an endorsement or position of TMC/HMA.

Appendix A.1. USPA Description of Cardiology / Vascular Surgery / Interventional Radiology Service Example

Service – Revascularization for Patients with Peripheral Artery Disease

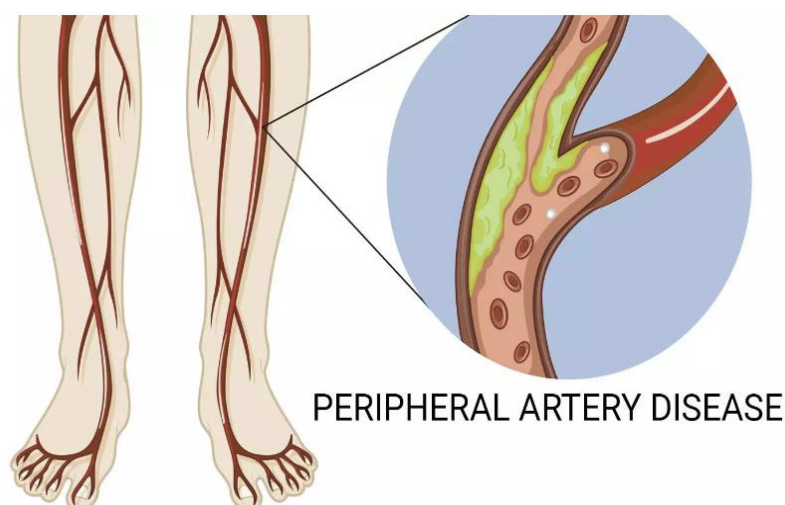
I. Background

Peripheral Artery Disease (PAD) in the lower extremities is the narrowing or blocking of the arteries that carry blood from the heart to the legs (see Figure 1). Symptoms and effects of PAD include impaired walking function, rest pain, nonhealing wounds, gangrene, and limb loss. For some patients, these symptoms can impair daily living, at which time an endovascular revascularization procedure may be recommended. Findings show that chronic limb threatening ischemia had a five-year mortality rate - nearly double that of all cancers.³ Many endovascular procedures are minimally invasive and can be performed in ambulatory settings, including physicians' offices. Revascularization procedures performed in the hospital outpatient department can be more than 2.5 times more costly to Medicare than when done in other ambulatory settings.⁴

Arterial endovascular revascularization techniques typically include:

- Angioplasty, which is the insertion and expansion of a small balloon in the vessel to restore blood flow;
- Atherectomy, which is the removal of plaque build-up within the vessel using a sharp blade or laser; and
- Stenting, which is the expansion of a tube or mesh within to maintain proper blood flow following a revascularization procedure.

Figure 1. Narrowing of the Arteries in the Leg



³ Armstrong, D. Swerdlow, M., Armstrong, A., et al. (2020). Five year mortality and direct costs of care for people with diabetic foot complications are comparable to cancer. *J Foot Ankle Res*; 13(16). <https://doi.org/10.1186/s13047-020-00383-2>

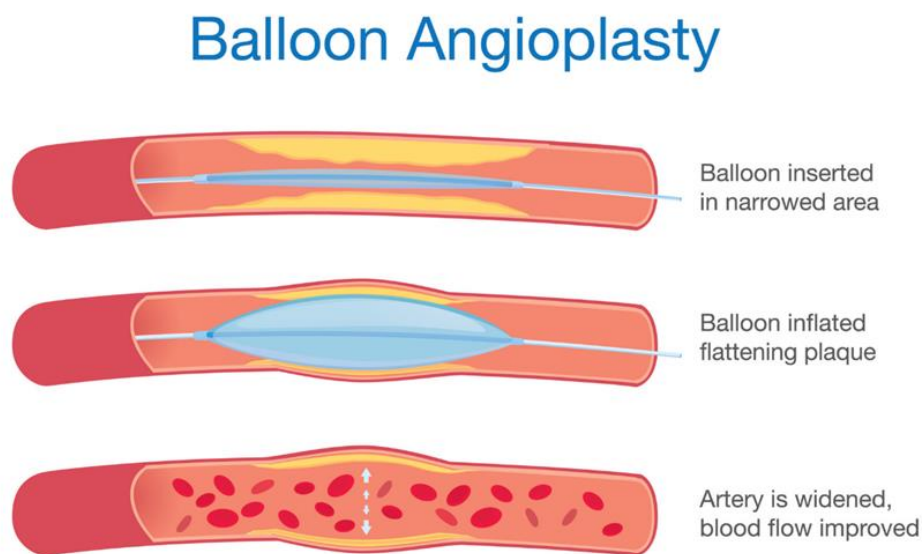
⁴ Including all technical and professional reimbursement in the 2023 HOPPS and PFS Fee Schedules, the national average rates for 37228 are \$4,241 in the office and \$11,149 in the HOPD, though is not directly comparable as payment to the HOPD reflects reimbursement for a larger bundle of services.

II. Example of an Office-Based Endovascular Angioplasty

A patient with critical limb ischemia presents with severe claudication and nonhealing wounds. Imaging has shown occlusion of the tibial artery. To revascularize the vessel, the surgical team takes the following steps:

- Accesses the artery using a micro-puncture needle;
- Injects contrast to assess the occlusion;
- Crosses the blockage with a guidewire and catheter;
- Treats the blockage with a combination of balloons, atherectomy catheters or stents depending on the nature of the lesion;
- Injects contrast to assess the patency/occlusion of the vessel;
- Removes the catheter system; and
- Closes the hole used to access the artery with a special device under X-ray guidance.

Figure 2. Balloon Angioplasty



III. Related Studies

A. Quality

Procedural and 3-Year Outcomes of Peripheral Vascular Interventions Performed in Office-Based Labs⁵

⁵ Giannopoulos S., Pliagas G., Armstrong E. (2021, May). Procedural and 3-Year Outcomes of Peripheral Vascular Interventions Performed in Office-Based Labs: LIBERTY 360 Sub-Analysis. *J Invasive Cardiol.*33(5):E365-E377. PMID: 33932282.

Synopsis

Treatment for the most advanced stage of PAD, chronic limb-threatening ischemia (CLTI), costs more than \$4 billion per year in the U.S. Hence, payers are increasingly focusing on alternative treatment locations with the goal of improving patient access and decreasing total medical expenses. Office-Based Labs (OBLs) are commonly thought to meet both goals and recent research shows that clinical outcomes for procedures performed in the office-based lab are equivalent to those done in the hospital setting. Observing both short- and long-term outcomes for more than 700 patients showed no significant differences based on site of service.

B. Health Equity / Patient Access

Racial and Ethnic Disparities in Peripheral Artery Disease⁶

Synopsis

Black people in the U.S. are more likely to experience delayed detection and treatment of PAD and less likely to be treated with optimal medical therapy for PAD. Black Americans also are more likely to undergo amputation and less likely to undergo procedures focused on limb salvage. These patients have a higher mortality rate from major cardiovascular events.

CY (Calendar Year) 2023 Physician Fee Schedule⁷

Synopsis

- According to the Centers for Medicare & Medicaid Services, amputations occur at a rate of 5.6 per 1,000 people with diabetes, affecting approximately 130,000 patients in 2016, and evidence indicates that amputations are on the rise.
- There are known health equity concerns, with amputation rates substantially higher among Black, Native American, and Hispanic patients than for White non-Hispanic patients.

⁶ Hackler E., Hamburg N., White Solaru K. (2021, Jun 11). Racial and Ethnic Disparities in Peripheral Artery Disease. *Circ Res.*128(12):1913-1926. doi: 10.1161/CIRCRESAHA.121.318243. Epub 2021 Jun 10. PMID: 34110901

⁷ 87 FR 46282

Appendix A.2: USPA Description of Diagnostic Radiology Service Example

Service – Screening Mammography

I. Background

Breast cancer is the most common cancer among women in the U.S. and the second leading cause of cancer deaths in this population, behind lung cancer. Breast cancer deaths have decreased since 1989, which is most attributable to early detection through screening and advances in treatment.

A mammogram is an X-ray of the breast. Screening mammograms are performed on people who do not currently have any signs or symptoms of breast cancer for the purpose of detecting masses not palpable on physical exam or microcalcifications, both of which may be signs of cancer. The technology used to conduct these imaging studies has improved since the early 2000s and now routinely includes full-field digital mammography with tomosynthesis. Computer-aided detection algorithms also may be employed to search for abnormal areas of breast density, mass, or calcification.



II. Example of an Office-Based Screening Mammogram Service

A 52-year-old asymptomatic woman presents for her regular screening mammogram and the following steps are taken:

- The patient's history questionnaire and technologist notes are reviewed to ensure the patient is a candidate for screening and not in need of a diagnostic study for any sign or symptom.
- The mammogram is conducted using a mammography imaging machine.
- The screening mammographic images are reviewed to ensure adequate quality for interpretation or determine whether any images require repeating.
- Current screening images are compared with any older exams to evaluate for any changes and to evaluate whether any findings require additional evaluation with diagnostic mammography.
- It is determined whether the patient is a candidate for diagnostic mammography to further assess any areas flagged in the screening images.
- A radiologist, a specially trained type of physician, reviews the images and generates a report for the patient and her primary care physician. The report summarizes the findings on the images, their meaning, and appropriate next steps.

III. Related Studies

A. Quality

Major medical organizations, including the American College of Radiology, American Cancer Society, and the US Preventive Services Task Force, recommend women receive regular mammograms.^{8,9,10}

B. Health Equity / Patient Access

Is there a relationship between race and access to newer mammographic technology in women with Medicare insurance?¹¹

- Black women have less access than White women to new mammographic imaging technology, despite having similar Medicare coverage.

Barriers to breast cancer screening during COVID-19 pandemic¹²

- Black and Hispanic women's access to screening mammograms is lower than for White women. The COVID-19 pandemic further negatively affected rates of

⁸ American College of Radiology. (2017, September 22). Breast Cancer Screening for Average Risk Women: Recommendations for the ACR Commission on Breast Imaging. Accessed via <https://www.acr.org/Advocacy-and-Economics/ACR-Position-Statements/Breast-Cancer-Screening-for-Average-Risk-Women>

⁹ American Cancer Society. (n.d.) American Cancer Society Recommendation for the Early Detection of Breast Cancer. Accessed via <https://www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/american-cancer-society-recommendations-for-the-early-detection-of-breast-cancer.html>

¹⁰ United States Preventive Services Task Force, Breast Cancer: Screening, May 2023. Accessed via <https://www.uspreventiveservicestaskforce.org/uspstf/draft-recommendation/breast-cancer-screening-adults>

¹¹ Christensen, E., Waid, M., Scott, J., et al. (2022). Relationship between Race and Access to Newer Mammographic Technology in Women with Medicare Insurance. *Radiology*, 306(2). <https://doi.org/10.1148/radiol.221153>

¹² Tsapatsaris, A., Babagbemi, K., & Reichman, M. (2021). Barriers to breast cancer screening are worsened amidst COVID-19 pandemic: A review. *Clinical Imaging*, 82, 224–227. <https://doi.org/10.1016/j.clinimag.2021.11.025>

screening mammography for women of color, which will likely affect early breast cancer detection and outcomes.

Appendix A.3: USPA Description of Interventional Radiology Service Example

Service – Embolization for Women with Uterine Fibroids

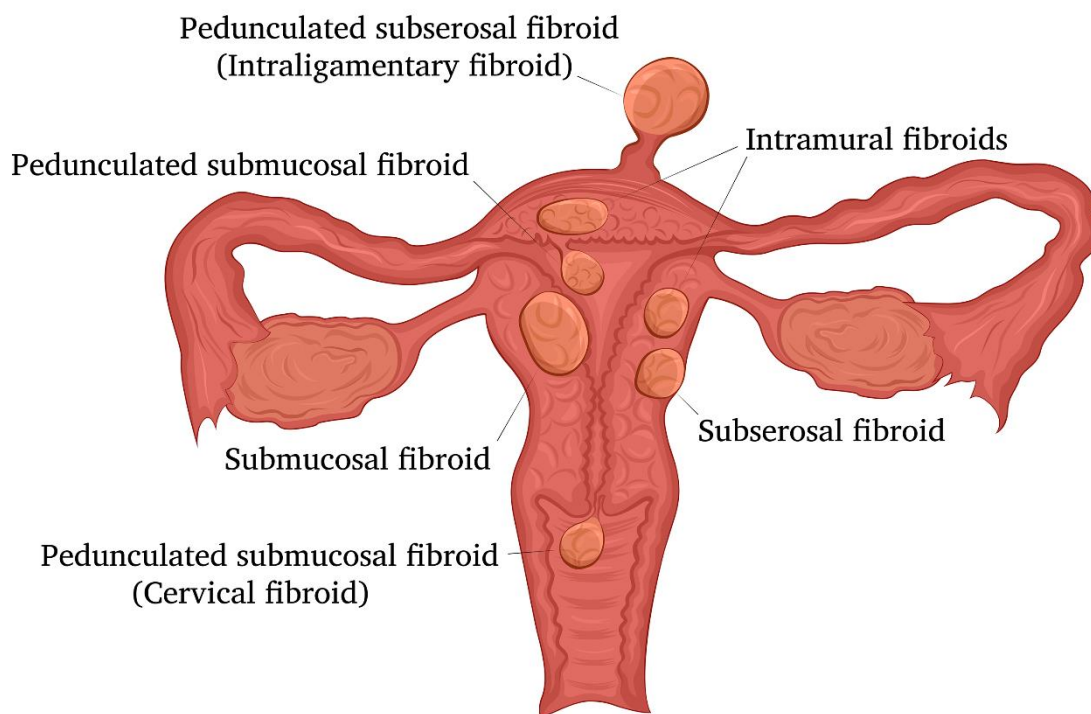
I. Background

Uterine fibroids are non-cancerous growths in the uterus that can cause a range of symptoms, including heavy menstrual bleeding, pelvic pain, and infertility (see Figure 1). Uterine fibroid embolization (UFE) is a minimally invasive procedure that uses a catheter to deliver small particle embolic material to the blood vessels that feed the fibroids. By blocking the blood flow to the fibroids, UFE causes them to shrink and reduces or eliminates the associated symptoms.

Unlike surgery, which requires general anesthesia and a longer recovery period, UFE is typically performed under local anesthesia and can be completed in an office-based setting. Hence, patients can return home the same day and resume their normal activities within a week or two. Another benefit of UFE is that it is less invasive than an open operation. An open operation, also known as a hysterectomy, involves cutting into the uterus to remove the fibroids, whereas UFE requires only a small incision in the groin area to insert the catheter, resulting in less scarring and a lower risk of complications.

Figure 1: Types of Uterine Fibroid Tumors

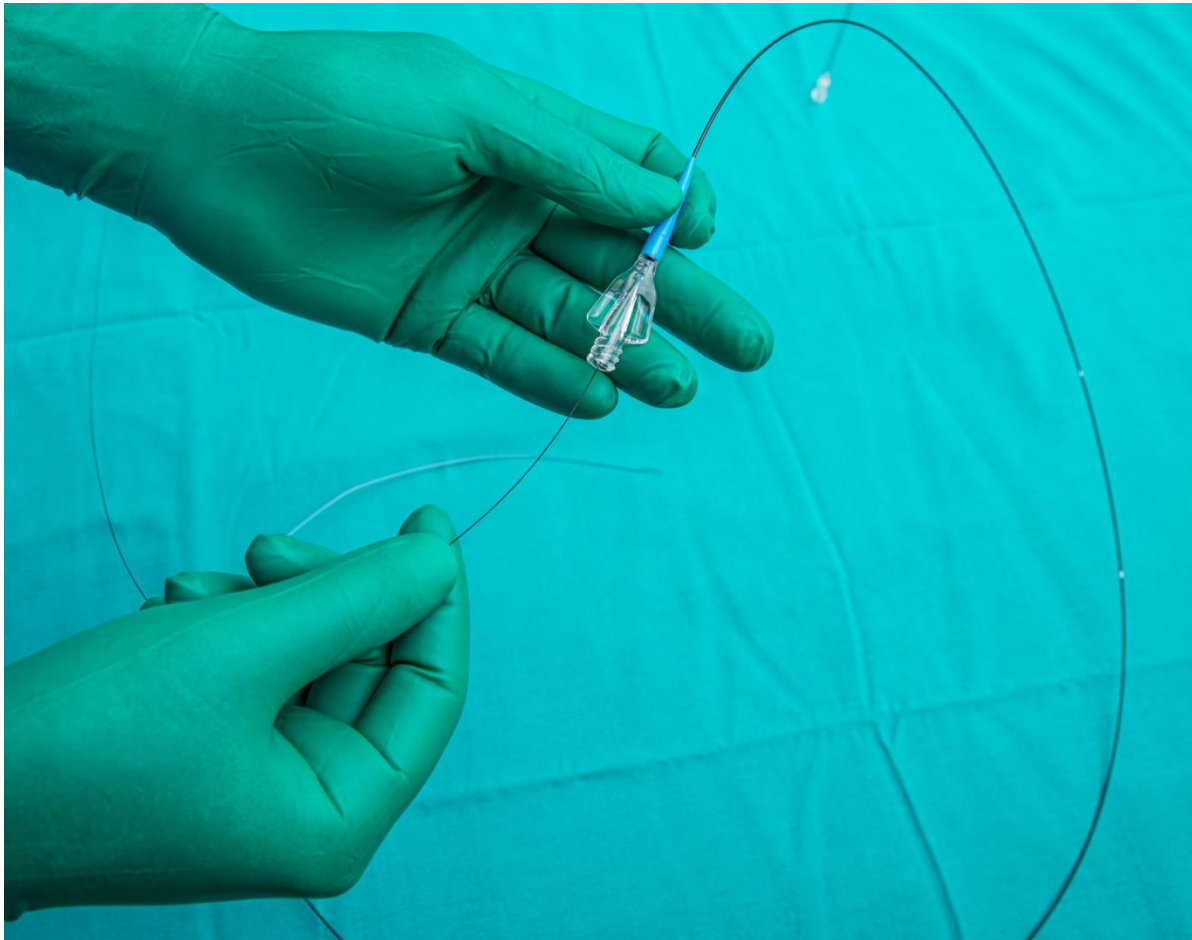
Types of uterine fibroids



II. Example of an Office-Based Fibroid Embolization Service

A patient presents with a non-cancerous growth in the uterus that is causing discomfort and bleeding. Treatment for a fibroid tumor involves the following steps:

- Using fluoroscopic guidance, an embolization microcatheter and guide wire are advanced into target vessels supplying blood to the fibroid.
- Embolic material is delivered to the vascularity of the fibroid and embolization is performed.
- Intermittent arteriograms are performed to assess continued blood flow in the parent artery.
- Arteriography is performed demonstrating cessation of flow to the fibroid and absence of vessel injury.
- When fibroid embolization is complete, the catheter system is removed.



III. Related Studies

A. Quality

Uterine Artery Embolization versus Hysterectomy in the Treatment of Symptomatic Uterine Fibroids: 10-year Outcomes from the Randomized EMMY Trial¹³

Synopsis

- In about two thirds of uterine artery embolization-treated patients with symptomatic uterine fibroids a hysterectomy can be avoided.
- Health-related quality of life 10 years after uterine artery embolization or hysterectomy remained comparably stable.
- Uterine artery embolization is a well-documented and less invasive approach to hysterectomy for symptomatic uterine fibroids. Patients should be counseled on the benefits of the procedure.

B. Health Equity / Patient Access

The Health Disparities of Uterine Fibroids for African American Women: A Public Health Issue¹⁴

Synopsis

- Uterine fibroids (leiomyomas) are the most common benign pelvic tumors in women and are the major indication for hysterectomy.
- Fibroids are more common and more severe among African American women.
- In addition to having a greater lifetime incidence of fibroids, African American women have a 3-fold increased age-adjusted incidence rate and 3-fold increased relative risk of fibroids when adjusted for other factors.

¹³ de Bruijn A., Ankum W., Reekers J., et al. (2016, December). Uterine artery embolization vs hysterectomy in the treatment of symptomatic uterine fibroids: 10-year outcomes from the randomized EMMY trial. *Am J Obstet Gynecol.* 215(6):745.e1-745.e12. doi: 10.1016/j.ajog.2016.06.051. Epub 2016 Jul 5. PMID: 27393268.

¹⁴ Eltoukhi H., Modi M., Weston M., et al. (2014, March). The health disparities of uterine fibroid tumors for African American women: a public health issue. *Am J Obstet Gynecol.* 210(3):194-9. doi: 10.1016/j.ajog.2013.08.008. Epub 2013 Aug 11. PMID: 23942040; PMCID: PMC3874080.

Appendix A.4: USPA Description of Phlebology / Vascular Surgery / Cardiology / Interventional Radiology Service Example

Service - Radiofrequency Vein Ablation for Patients with Venous Ulcers

I. Background

A venous ulcer is an open sore that develops on the skin of the lower leg or ankle due to poor circulation of blood in the veins (see Figure 1). Venous ulcers are caused by venous insufficiency, which occurs when the valves in the veins of the legs are damaged or weakened, leading to a buildup of blood and pressure in the veins. This condition can cause the veins to leak fluid into the surrounding tissues, leading to swelling, skin changes, and eventually a venous ulcer. Venous ulcers can be painful, slow to heal, and prone to infection.

Radiofrequency ablation (RFA) is a minimally invasive treatment that is used to treat underlying venous insufficiency – a leading cause of venous ulcers. RFA uses a catheter that is inserted into the affected vein through a small incision in the skin. The catheter delivers heat energy in the form of radiofrequency waves to the walls of the vein, which causes the vein to seal shut. By closing the diseased vein, RFA helps to redirect blood flow to healthy veins in the leg, which can improve circulation and reduce swelling and other symptoms associated with venous insufficiency. This procedure can help to promote healing of the ulcer and prevent it from recurring. Patients generally tolerate this procedure well and experience minimal discomfort and downtime.

RFA can be performed in ambulatory settings, including office-based centers, although Medicare pays almost three times more for RFA procedures performed in the hospital outpatient department than when the procedure is conducted in other outpatient setting.”¹⁵

Figure 1: Examples of Venous Ulcers



¹⁵ Including all technical and professional reimbursement in the 2023 HOPPS and PFS Fee Schedules, the national average rates for 36475 are \$1,100 in the office and \$3,254 in the HOPD, though is not directly comparable as payment to the HOPD reflects reimbursement for a larger bundle of services.

II. Example of an Office-Based Radiofrequency Ablation Service

A patient presents with an open sore and painful leg swelling and has been diagnosed with vein insufficiency. To treat the venous ulcer, the following steps are taken:

- Fluoroscopy or ultrasound guidance is used to locate the abnormal tissue.
- A thin, flexible electrode is inserted through a small incision in the skin and guided to the site of the abnormal tissue.
- Once the electrode is in place, a high-frequency electrical current heats the abnormal tissue to create a small lesion, which causes the vein to seal.
- The electrode is removed.



III. Related Studies

A. Quality

A Randomized Trial of Early Endovenous Ablation in Venous Ulceration¹⁶

¹⁶ Gohel, M. Heatley, F. Liu, X. et al. (2018). A Randomized Trial of Early Endovenous Ablation in Venous Ulceration. *N Engl J Med.* 378:2105-2114. DOI: 10.1056/NEJMoa1801214

Synopsis

- Patients who received early endovenous ablation of superficial venous reflux experienced faster healing of venous leg ulcers and more time free from ulcers than patients who postponed endovenous ablation.

B. Health Equity / Patient Access**The Impact of Race on Advanced Chronic Venous Insufficiency¹⁷***Synopsis*

- Black patients with a primary diagnosis of venous stasis present with more advanced venous disease at a younger age than their White counterparts. Consequently, Black patients are more likely to experience deep vein thrombosis, which requires hospitalization.

¹⁷ Dua A., Desai S., Heller J. (2016, July). The Impact of Race on Advanced Chronic Venous Insufficiency. *Ann Vasc Surg*.34:152-6. doi: 10.1016/j.avsg.2016.01.020. Epub 2016 May 12. PMID: 27179983.

Appendix A.5: USPA Description of Physical Therapy Service Example

Service - Therapeutic Activity for Patients with Chronic Pain¹⁸

I. Background

Certain physical therapy services involve the “use of dynamic activities to improve functional performance.” Dynamic activities include lifting, carrying, pulling, bending, reaching, catching, and transferring. Patients presenting for physical therapy services are limited in their ability to perform functional tasks because of pain, pathology, weakness, fear avoidant behaviors, pain catastrophizing, kinesiophobia, or any combination of these impairments.

To address these concerns, physical therapists implement a variety of dynamic exercises based on graded exposure and graded activity.



II. Example of an Office-Based Therapeutic Activity Service

¹⁸ Also can be performed by occupational therapists and other specialists.

A 75-year-old patient presents to the clinic with chronic right shoulder pain. The patient shows signs of fear avoidance with all lifting, carrying, and reaching related activities and reports worsening pain with household tasks such as putting away dishes and taking out the trash. To reduce the patient's pain, the following steps are taken:

- Assess house-related tasks, noting the levels of pain and fear associated with each task.
- Instruct the patient on various lifting, carrying, and reaching techniques for the different objects the patient will lift and carry at home;
- Assign and observe exercises begin with modified versions of the activities, such as picking up a five-pound weight from a table at knee height and carrying it five feet;
- Use a Hi-Lo hydraulic table to fine-tune the height of the weight to personalize the exercise;
- As the patient's pain declines, lower the table height until the patient is able to lift the weight from the floor and increase the distance until it replicates taking trash to the end of the driveway;
- Increase the amount of weight and volume of repetitions to build strength and enhance lifting and carrying capacity;
- Use a variety of exercise equipment, including cable column pulleys, free weights and household objects to improve strength and stability in a variety of positions;
- Track improvement in strength and power using handheld dynamometers and isokinetic machines; and
- If deficits in strength or power are detected, design a targeted exercise to strengthen the muscles necessary for upper extremity functional activity.

III. Related Studies

A. Quality

The Influence of Physical Therapy Guideline Adherence on Healthcare Utilization and Costs among Patients with Low Back Pain: A Systematic Review of the Literature¹⁹

Synopsis

- Adherence to established physical therapy clinical practice guidelines may assist with decreasing healthcare utilization and costs.
- Patients participating in an adherent physical therapy treatment program were associated with reduced healthcare utilization and lower costs.

¹⁹ Hanney WJ, Masaracchio M, Liu X, Kolber MJ. (2016, June 10). The Influence of Physical Therapy Guideline Adherence on Healthcare Utilization and Costs among Patients with Low Back Pain: A Systematic Review of the Literature. *PLoS One*. 11(6):e0156799. doi: 10.1371/journal.pone.0156799. PMID: 27285608; PMCID: PMC4902217.

B. Health Equity / Patient Access

Disparities Exist in Physical Therapy Use and Time to Utilization Between Black and White Patients with Musculoskeletal Pain²⁰

Synopsis

- In a nationally distributed cohort, Black patients were less likely than White patients to use physical therapy and had a longer time to utilization of physical therapy for musculoskeletal pain.

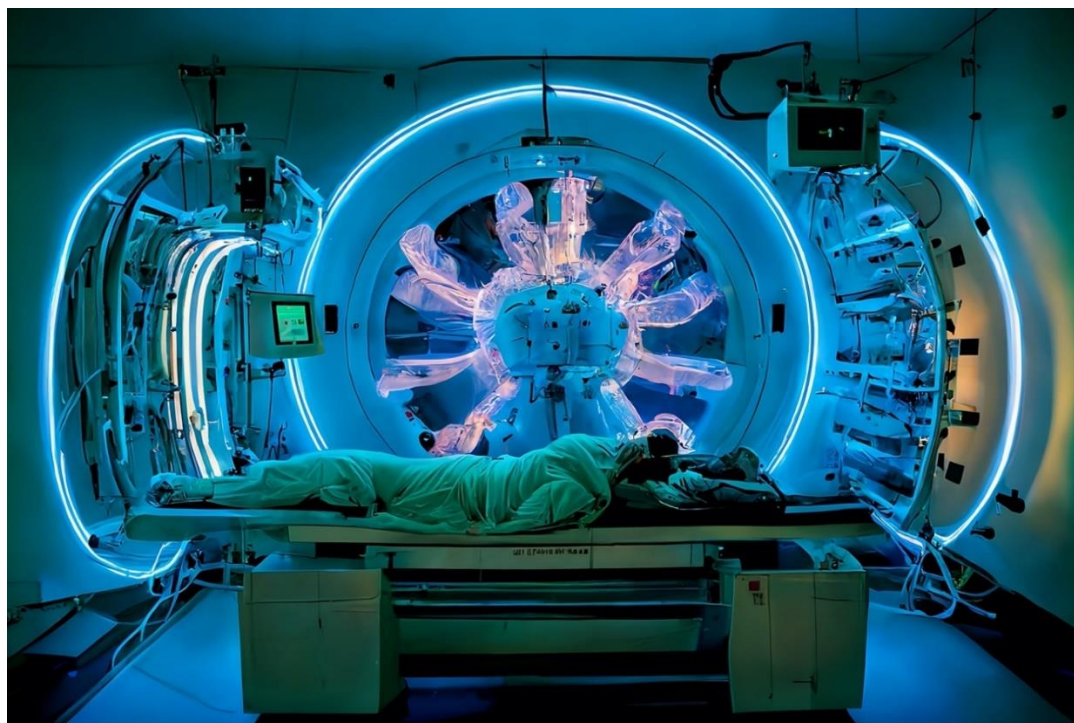
²⁰ Richter, R., Chrusciel, T. Salsich, G. et al. (2022, October). Disparities Exist in Physical Therapy Utilization and Time to Utilization Between Black and White Patients With Musculoskeletal Pain, *Physical Therapy* (102);10. pzac095, <https://doi.org/10.1093/ptj/pzac095>

Appendix A.6: USPA Description of Proton Therapy Service Example

Service – Proton Treatment for Cancer Patients

I. Background

Proton therapy was first used for localized cancer treatment in 1954 and has continued to be considered an effective treatment modality for primary and additional therapy. Protons are positively charged subatomic particles that can be highly focused to deliver to a specifically planned cancer target. As the proton beam travels to the targeted site, it enters the body with a low dose of radiation, deposits most of its energy in a concentrated burst near the end of the range (i.e., the planned cancer target) and quickly stops with no exit dose through the other side. As a result, radiation oncologists can deliver higher doses of radiation to the intended target, rather than critical and sensitive organs and tissues and with fewer side effects than other radiation treatment modalities.



II. Example of an Office-Based Proton Therapy Cancer Treatment

A seven-year-old pediatric patient presents with painful swelling on right side of jaw which is diagnosed as cancerous sarcoma. Proton therapy is prescribed and the following steps are taken:

- A therapeutic radiology simulation is performed to design the setup for the patient.
- A proton treatment plan is designed using an angled beam with a customized block and compensator to shape the beam to the size and shape of the target.

- Each day of proton treatment, the patient is positioned in accordance with the design established during the simulation.
- Imaging occurs before the proton treatment to make any minor adjustments to the patient's position to ensure the proton therapy is delivered precisely as planned.
- The proton treatment is delivered using an electronic record and verify system to ensure accurate delivery of the prescribed dose and active monitoring of the patient with audio and video while the beam is on.
- Proton treatments are delivered daily until the total dose that the radiation oncologist has prescribed is achieved.
- Throughout the course of proton treatment, the physician meets with the patient to (1) manage overall prescribed daily treatments and associated services as well as any side effects and (2) monitor tumor response to proton treatment.

III. Related Studies

A. Quality

Proton Therapy for Pediatric Head and Neck Malignancies²¹

Proton Therapy in the Most Common Pediatric Non-Central Nervous System Malignancies: An Overview of Clinical and Dosimetric Outcomes²²

Synopsis

- Rhabdomyosarcoma is the most common soft tissue sarcoma in pediatric patients and is highly malignant and locally invasive.
- Proton beam therapy for pediatric head and neck patients has lower acute toxicity, minimal late toxicity, and improved quality of life. Use of protons allows the pre-adult patient to grow to normal heights and reduce stunted bone growths.

B. Health Equity / Patient Access

Race, Ethnicity, and Socioeconomic Differences in Incidence of Pediatric Embryonal Tumors in the United States²³

²¹ Vogel J, Both S, Kirk M, et al. (2017, October 23). Proton Therapy for Pediatric Head and Neck Malignancies. *Pediatr Blood Cancer*. Accessed April 21, 2023 via <https://onlinelibrary.wiley.com/doi/10.1002/pbc.26858>.

²² Sardaro A, Carbonara R, Petruzzelli MF, et al. (2019). Proton Therapy in the Most Common Pediatric Non-Central Nervous System Malignancies: An Overview of Clinical and Dosimetric Outcomes. *Ital J Pediatr*.45:170. doi: 10.1186/s13052-019-0763-2

²³ Geris JM, Spector LG. (2020). Race, Ethnicity, and Socioeconomic Differences in Incidence of Pediatric Embryonal Tumors in the United States. *Pediatr Blood Cancer*.67(9):e28582. doi: 10.1002/2Fpbc.28582.

Pediatric Rhabdomyosarcoma Incidence and Survival in the United States: An Assessment of 5,656 cases, 2001–2017²⁴

Synopsis

- Hispanic and non-Hispanic Black pediatric patients experience rhabdomyosarcoma more frequently than their non-Hispanic White counterparts.
- Health equity survival is multifactorial, but a key driver is unequal access to care.

Race Disparities in Proton Radiotherapy Use for Cancer Treatment in Patients Enrolled in Children’s Oncology Group Trials²⁵

Synopsis

- Black patients are less likely than non-Hispanic White patients to receive proton radiotherapy.
- Black pediatric patients were less likely to receive proton radiotherapy, despite being enrolled on national prospective trials in which treatment is highly standardized.
- The location of enrolling institution was associated with proton radiotherapy and patients treated with proton radiotherapy traveled further for treatment, possibly reflecting sparse, unequal distribution of proton radiotherapy centers.

²⁴ McEvoy M., Siegel D., Dai S., et al. (2022, September 7). Pediatric Rhabdomyosarcoma Incidence and Survival in the United States: An Assessment of 5656 cases, 2001–2017. *Cancer Med.* Accessed April 21, 2023 via: <https://onlinelibrary.wiley.com/doi/full/10.1002/cam4.5211>.

²⁵ Bitterman D., Bona K., Laurie F., Kao P. et al. (2020). Race Disparities in Proton Radiotherapy Use for Cancer Treatment in Patients Enrolled in Children’s Oncology Group Trials. *JAMA Oncol.* 6(9):1465–1468.doi: 10.1001/jamaoncol.2020.2259.

Appendix A.7: USPA Description of Radiation Therapy Service Example

Service – Intensity Modulated Radiation Therapy (IMRT)

I. Background

Radiation therapy involves the use of ionizing radiation to treat cancers and certain benign tumors and diseases. More than 50% of cancer patients receive radiation therapy.²⁶ Advances in delivery technique have enabled treatments that have few, if any, painful side effects for most patients.

Intensity modulated radiation therapy (IMRT) is an advanced technique that delivers external beam radiation. Compared with other forms of radiotherapy, IMRT delivers a more precise radiation dose to the tumor and areas at risk of cancer spread, while sparing the surrounding normal tissues by using non-uniform radiation beam intensities. The intensity of each beam can be varied or customized to the particular patient, resulting in precisely controlled, safe, and effective treatment with fewer side effects. Radiation therapy procedures performed in the hospital



outpatient department can be more than 60% more costly to Medicare than when done in other ambulatory settings.²⁷

²⁶ World Health Organization. (2021, March 5). New WHO/IAEA publication provides guidance on radiotherapy equipment to fight cancer. *World Health Organization*. Accessed April 2023 via <https://www.who.int/news/item/05-03-2021-new-who-iaea-publication-provides-guidance-on-radiotherapy-equipment-to-fight-cancer>.

²⁷ In the 2023 HOPPS and PFS Fee Schedules, the national average rates for radiation treatment delivery services (77385 / G6015) are \$364 in the office and \$572 in the HOPD.

II. Example of an Office-Based Radiation Therapy Cancer Treatment

A breast cancer patient presents with a tumor. IMRT is prescribed and the following steps are taken:

- A radiation oncologist evaluates and examines the patient, explaining the procedures;
- A special computed tomography (CT) scan is performed to three-dimensionally model areas at risk of cancer recurrence;
- All areas at risk of cancer recurrence and areas at risk of side effects (such as the heart, spinal cord, and lungs) are drawn onto the CT images;
- Optimal parameters for treatment design are developed, specifying required doses to target tissues and dose limits for normal tissues;
- Advanced calculation systems help determine optimal treatment design and treatment plan is tested for quality;
- The patient is scheduled to begin their course of daily radiotherapy;
- Radiation therapy treatment is delivered painlessly to the tumor through a linear accelerator over the entire course of treatment; and
- A radiation treatment vault contains radiation within the treatment delivery room.

III. Related Studies

A. Quality

Patient-Reported Toxicity during Pelvic Intensity-Modulated Radiation Therapy²⁸

Intensity-modulated radiotherapy for prostate cancer²⁹

Synopsis

- Pelvic cancer patients experienced significantly less gastrointestinal and urinary toxicity with IMRT than when treated with conventional radiation therapy, and reduced toxicity results in improved quality of life.
- Men who received IMRT were less likely to experience severe gastrointestinal toxicity than males who received conventional radiation therapy. Hence, IMRT has become the standard of care for prostate and other cancers.³⁰

²⁸ Klopp, A. Yeung, A., Deshmukh, S. et al. (2018, June 10). Patient-Reported Toxicity During Pelvic Intensity-Modulated Radiation Therapy: NRG Oncology–RTOG 1203 *Journal of Clinical Oncology*. 36(24): 2538-2544. doi: 10.1200/JCO.2017.77.4273.

²⁹ Fischer-Valuck B., Rao Y., Michalski J. (2018, June). Intensity-modulated radiotherapy for prostate cancer. *Transl Androl Urol*. 7(3):297-307. doi: 10.21037/tau.2017.12.16.

³⁰ Jacobs B., Zhang Y., Schroeck, F. et al. (2013, June 26). Use of advanced treatment technologies among men at low risk of dying from prostate cancer - PubMed (nih.gov). *JAMA*.309(24):2587-95. doi: 10.1001/jama.2013.6882. PMID: 23800935; PMCID: PMC3857348.

B. Health Equity / Patient Access

Worsening Racial Disparities in Utilization of Intensity Modulated Radiation Therapy³¹

Racial and Ethnic Health Disparities in Delay to Initiation of Intensity-Modulated Radiotherapy³²

Synopsis

- Black, Hispanic, and Asian patients were found to experience delays in beginning IMRT treatment compared with non-Hispanic White (NHW) patients, which may contribute to differences in cancer outcomes.
- Prostate cancer patients living in rural areas experience decreased treatment choices and provider availability leading to increased deviation from national guidelines. Freestanding treatment centers are the foundation of rural cancer care, though cuts to freestanding radiotherapy reimbursement have been significant, leading to reduced access to care for these patients.

³¹ Hutten R., Weil C., Gaffney D., et al. (2022, January 20). Worsening Racial Disparities in Utilization of Intensity Modulated Radiation Therapy. *Adv Radiat Oncol.* 7(3):100887. doi: 10.1016/j.adro.2021.100887.

³² Hutten, R., Weil, C., Gaffney, D. et al. (2022). Racial and Ethnic Health Disparities in Delay to Initiation of Intensity-Modulated Radiotherapy. *JCO Oncology Practice.* 18:10, e1694-e1703.

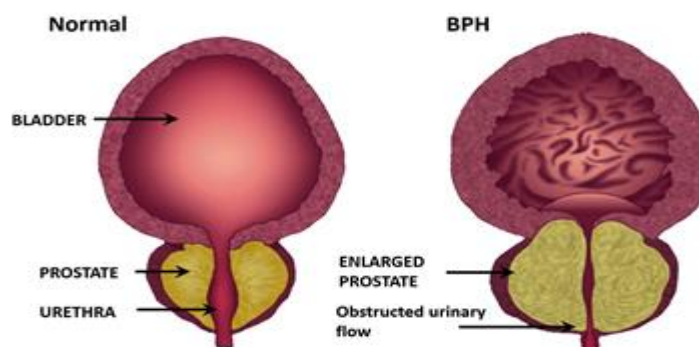
Appendix A.8: USPA Description of Prostatic Urethral Lift Service Example

Service – Cystourethroscopy, with insertion of permanent adjustable transprostatic implant

I. Background

Benign prostatic hyperplasia (BPH) is a common condition that affects men as they age and can have a significant impact on their quality of life (see Figure 1). More than 40 percent of men in their 50s and over 70 percent of men in their 70s experience changes in their prostate tissue due to BPH (histological BPH).³³ An estimated 26 million men in the U.S. have moderate to severe symptoms of BPH.³⁴ BPH causes the prostate to enlarge and press on or block the urethra, causing bothersome lower urinary tract symptoms (LUTS), including depression, reduced productivity, poor sleep and sexual dysfunction.³⁵ The prostatic urethral lift (PUL) is a minimally invasive procedure that opens up the blocked urethra without cutting, heating or burning prostate tissue. PUL is typically a one-time, in office procedure performed under local anesthesia that provides rapid, significant, and durable relief of BPH symptoms with a quick recovery, low morbidity and preservation of sexual function.^{36,37,38}

Figure 1: Normal Prostate and Prostate with BPH³⁹



³³ Berry, S., Coffey, D., Walsh, P., et al. (1984). The Development of Human Benign Prostatic Hyperplasia with Age. *J Urology*. 132: 474-479

³⁴ National Institute of Diabetes and Digestive and Kidney Diseases. (2018, April). Urologic Diseases in America. Accessed April 19, 2023 via: <https://www.niddk.nih.gov/about-niddk/strategic-plans-reports/urologic-diseases-in-america>.

³⁵ Rosenberg, M., et al. (2007, September). A Practical Guide to the Evaluation and Treatment of Male Lower Urinary Tract Symptoms in the Primary Care Setting; *Int J Clin Pract*. 61(9): 1535-1546.

³⁶ Roehrborn C., Gange S., Shore N., et al. (2013). The prostatic urethral lift for the treatment of lower urinary tract symptoms associated with prostate enlargement due to benign prostatic hyperplasia: the L.I.F.T. Study. *J Urol*. 190(6):2161-7.

³⁷ Shore, N. et al. (2014). Prospective multi-center study elucidating patient experience after prostatic urethral lift; *Can J Urol*. 21(1): 7094-7101.

³⁸ Roehrborn C., Barkin J., Gange S., et al. (2017). Five year results of the prospective randomized controlled prostatic urethral L.I.F.T. study. *Can J Urol*. 24(3): 8802-8813.

³⁹ Used with permission of Teleflex Incorporated.

II. Example of an Office-Based Prostatic Urethral Lift (PUL)

A 68-year-old male presents with benign prostatic hyperplasia with bothersome voiding symptoms that have failed to improve with medical therapy. To treat the BPH, the following steps are taken:

- Insert a cystoscope sheath advance toward the bladder to assess the precise location of the prostatic obstruction;
- Press the cystoscope against the prostate lobe to determine the level of opening that should be created;
- Once the locations of the implantation sites are confirmed, proceed with placement of the implant(s);
- After final implant is placed, perform a cystoscopy to inspect the location and state of the implant(s) to ensure proper seating and location; and
- Perform a cystoscopy to assure that the prostatic channel remains patent without irrigation pressure.

Figure 2: Placing the Prosthetic Urethral Lift⁴⁰



The PUL delivery device is placed through the urethra to access the enlarged prostate.



Small, permanent implants are placed through a needle that comes out of the delivery device to lift the enlarged prostate tissue out of the way. Typically, 4-6 implants are placed.



The delivery device is removed, leaving a more open urethra.

III. Related Studies

A. Quality

⁴⁰ Used with permission of Teleflex Incorporated

Five-Year Results of the Prospective Randomized Controlled Prostatic Urethral L.I.F.T. Study⁴¹

Synopsis

- In the largest, randomized controlled study of the PUL procedure (the L.I.F.T. study), patients experienced rapid, significant LUTS relief and improvement in quality of life within two weeks of the procedure – benefits that were sustained for five years.

Real-World Evidence of Prostatic Urethral Lift Confirms Pivotal Clinical Study Results: Two-Year Outcomes from a Retrospective Multicenter Study⁴²

Synopsis

- PUL also has been studied in real-world settings that are representative of what occurs in everyday practice. The largest such study included 3,226 PUL patients treated across 22 international sites (Real World Retrospective Study or RWR Study). The study included patients with varied prostate sizes and shapes and underlying conditions such as diabetes and prostate cancer. The study found that PUL safely and effectively treats a broad population of patients with results that are consistent with those found in the controlled L.I.F.T. study. In the RWR study, patients who underwent the procedure with local anesthesia in the office setting had similar symptom improvement, and significantly lower rates of complications (adverse events) than patients treated in the ASC or hospital.

B. Health Equity / Patient Access

The Impact of Race, Ethnicity and Insurance Status on Surgery Rates for Benign Prostatic Hyperplasia⁴³

Synopsis

- Adjusting for age, insurance status, major comorbidities and type of LUTS medication, Black men were significantly less likely than White men to undergo surgical treatment for LUTS/BPH.

⁴¹ (Roehrborn, et al., 2017)

⁴² Eure G., et al. (2019). Real-World Evidence of Prostatic Urethral Lift Confirms Pivotal Clinical Study Results: 2-Year Outcomes of a Retrospective Multicenter Study *J Endourol.* 33(7): 576-584.

⁴³ Antoine S., Carmichael H., Lloyd G. (2022, May). The Impact of Race, Ethnicity and Insurance Status on Surgery Rates for Benign Prostatic Hyperplasia. *Urology.*163:44-49. doi: 10.1016/j.urology.2021.05.092. Epub 2021 Jul 23. PMID: 34303762.

Appendix A.9: USPA Description of Vascular Surgery / Interventional Nephrology / Interventional Radiology Service Example

Service - Dialysis Vascular Access for ESRD Patients

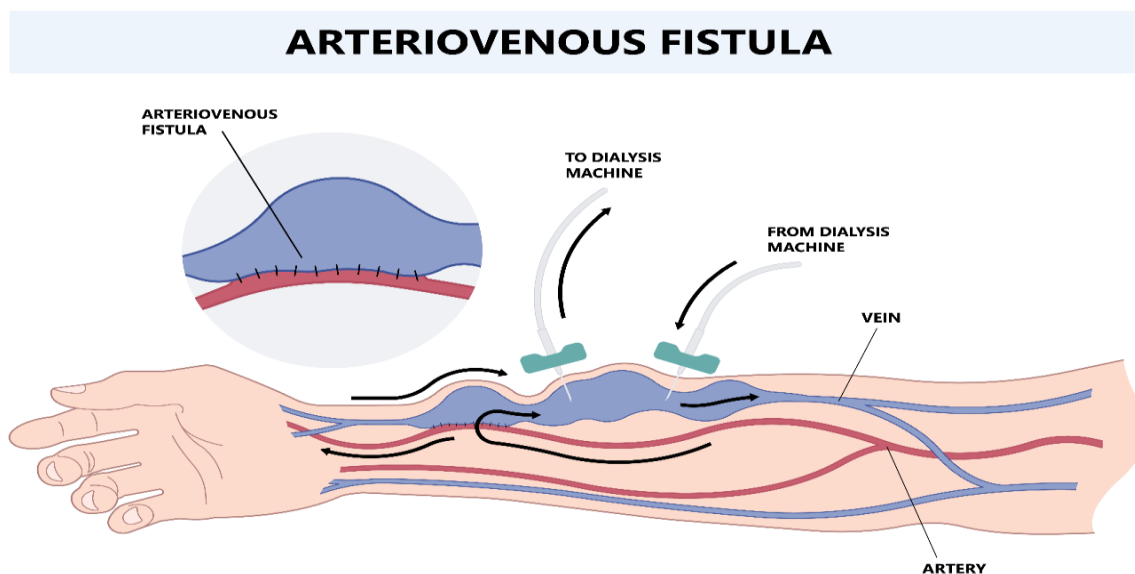
I. Background

Patients with End-Stage Renal Disease (ESRD) often use dialysis machines to filter out toxins and remove excess water from their blood. Dialysis vascular access involves the surgical creation and maintenance of an “access” on a patient’s body to connect the patient to a dialysis machine. Dialysis vascular access procedures can be performed in ambulatory settings, including office-based centers, although Medicare reimbursement for dialysis vascular access procedures in the HOPD can be more than 4 times more expensive.⁴⁴

To access the patient’s bloodstream, options are:

- Surgical creation of a fistula, which is a connection between an artery and a vein (see Figure 1);
- Graft, which connects an artery to a vein with an implanted synthetic tube; and
- Central vein catheter, which is an external tube placed through the skin and advanced to veins in the chest.

Figure 1. Blood Flow with an Arteriovenous Fistula

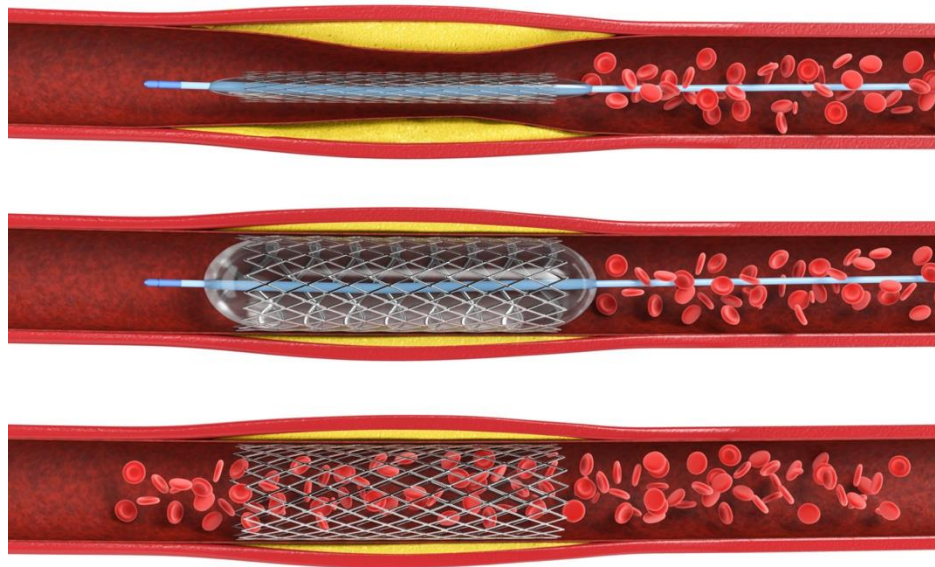


⁴⁴ Including all technical and professional reimbursement in the 2023 HOPPS and PFS Fee Schedules, the national average rates for 36902 are \$1,231 in the office and \$5,452 in the HOPD, though is not directly comparable as payment to the HOPD reflects reimbursement for a larger bundle of services.

II. Example of an Office-Based Dialysis Vascular Access Service

An ESRD patient presents with a malfunctioning fistula due to stenosis (i.e. a narrowing of the artery). In order to repair the fistula, the following steps are taken:

- A micropuncture needle is used to access the fistula;
- Contrast is injected to assess the fistula;
- A guidewire is used to place a balloon catheter into the stenosis;
- The balloon is inflated to widen the stenosis and restore blood flow;
- An appropriately sized stent is advanced over the guidewire into vascular segment
- Contrast is injected to assess the fistula; and
- The balloon, catheter, and guidewire are removed.



III. Related Studies

A. Quality

What is the best setting for receiving dialysis vascular access repair and maintenance services?⁴⁵

Synopsis

Where nephrologists send patients for dialysis vascular access services can impact patient clinical and economic outcomes. This research confirmed that patients who received dialysis vascular access care in a freestanding office-based center had better outcomes than those treated in a hospital outpatient department. By comparison to patients treated in hospital outpatient departments (HOPDs), patients treated in freestanding vascular access centers were found to have:

- Lower all-cause mortality
- Fewer infections
- Fewer septicemia-related and unrelated hospitalizations than those treated in the HOPD.

B. Health Equity / Patient Access

Vital Signs: Health Disparities in Hemodialysis-Associated Staphylococcus aureus Bloodstream Infections — United States, 2017–2020⁴⁶

Synopsis

- Bloodstream infection rate during 2017–2020 was 100 times higher among hemodialysis patients than among adults not on hemodialysis.
- Bloodstream infection rates were highest among non-Hispanic Black or African American (Black) and Hispanic or Latino (Hispanic) hemodialysis patients.
- Vascular access via central venous catheter was strongly associated with bloodstream infections.
- Health care providers and public health professionals should prioritize prevention and optimized treatment of ESKD, identify and address barriers to lower-risk vascular access placement, and implement established best practices to prevent bloodstream infections.

Supply and Distribution of Vascular Access Physicians in the United States: A Cross-Sectional Study⁴⁷

Synopsis

⁴⁵ El-Gamil A., Dobson A., Manolov N., et al. (2017, November 17). What is the best setting for receiving dialysis vascular access repair and maintenance services? *J Vasc Access*. 18(6):473-481. doi: 10.5301/jva.5000790. Epub 2017 Sep 2. PMID: 28885654. [Link here: <https://pubmed.ncbi.nlm.nih.gov/28885654/>].

⁴⁶ Rha B., See I., Dunham L., et al. (2023). Vital Signs: Health Disparities in Hemodialysis-Associated Staphylococcus aureus Bloodstream Infections — United States, 2017–2020. *MMWR Morb Mortal Wkly Rep*. 72:153–159.

⁴⁷ Lee S., Xiang J., Kshirsagar A., et al. (2020, August). Supply and Distribution of Vascular Access Physicians in the United States: A Cross-Sectional Study. *Kidney360*. 1(8):763-771. doi: 10.34067/kid.0002722020. Epub 2020 Aug 27. PMID: 34355198; PMCID: PMC8336638.

- Regions in the South (particularly, Georgia, Alabama, Mississippi, and Louisiana), Appalachia, and Midwest/Plains regions were underserved by physicians who performed vascular access procedures for patients on hemodialysis.
- Changes in reimbursement policy may be needed to increase the supply of vascular access physicians in underserved areas and disadvantaged patient populations.