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(N = 263,991; 58% of total volume) compared to inpatient (N = 183,386; 40%). Radiologists performed the majority of these procedures (N = 164,580; 36% of the total volume), followed by cardiologists (N = 138,949; 31%) and vascular surgeons (N = 75,431; 17%). However, radiologists saw the greatest decline in procedure volumes (25,907 to 13,108; -49%), compared with cardiologists (20,514 to 12,629; -35%) and vascular surgeons (9684 to 7921; -18%).

Conclusions: The volume of percutaneous extremity venography procedures performed in the Medicare population declined from 2010 to 2018, most likely related to more stringent patient selection. Radiologists performed the majority of procedures but were closely followed by cardiologists.

Abstract No. 517

Virtual follow-up of percutaneous drains placed in interventional radiology during the COVID-19 pandemic

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Purpose: Evaluate a virtual platform to track percutaneous drains in real-time to guide IR drain management during phase I (pre-resurgence) and II (resurgence) of the COVID-19 pandemic.

Materials and Methods: A prospective review of all patients undergoing percutaneous drain placement in IR between March and August 2020 was carried out ($n = 98$). All patients undergoing percutaneous drainage of a fluid collection with eventual discharge to home were included. Those with indwelling tubes at the end of the study period were excluded ($n = 20$). A total of 78 drains met inclusion criteria. Patients were instructed on how to utilize the virtual log, which included daily drain outputs, presence/absence of leakage (spontaneous or with flushing), and daily body temperature prior to discharge. This virtual log was accessed by patients through the patient portal via a computer or smart phone and was integrated into the electronic medical record for provider review. A Fisher's exact test was used to compare percent compliance during phase I and phase II. Unpaired two-tailed t-tests were used to compare mean time to tube removal (mTTR).

Results: Compliance with virtual drain log usage was 30.8% [24/78] with no significant difference between phase I and II ($P > 0.05$). mTTR \pm SE was 44.7 ± 7.1 days in patients who did not use the virtual log, compared with 36.9 ± 8.2 days in patients who did use the virtual log with a difference of 7.8 days, which did not reach statistical significance ($P > 0.05$). There was a statistically significant difference of 30.6 days in overall mTTR between phase I and phase II ($P = 0.007$) with a significant difference of 34.5 days between phase I and phase II in the sub-group that did not use the virtual drain log ($P = 0.018$). There was no significant difference between phase I and phase II in the group that used the virtual drain log.

Conclusions: This study demonstrates a significantly increased mTTR in patients who did not use a virtual drain log during the most restrictive phase of the COVID-19 pandemic. Virtual platforms to guide clinical decision making are important tools in health care delivery, particularly with increasing utilization of telehealth services.

Abstract No. 518

Updated trends in percutaneous renal arteriography among radiologists and other specialties

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Purpose: Provide an updated evaluation of utilization trends in percutaneous renal arteriography among radiologists and non-radiologist providers after 2009.

Materials and Methods: The nationwide Medicare Part B fee-for-service databases for 2010 to 2018 were used to obtain renal arteriography volumes. Six procedure codes were evaluated, including unilateral and bilateral procedures. Due to complexity associated with the bundling of renal and visceral artery codes, transluminal balloon angioplasty, transcatheter therapy, and transcatheter placement of an intravascular stent(s) were not included. Procedure volumes were aggregated based on physician specialty, specifically as radiologists, cardiologists, vascular surgeons, general surgeons, or other providers. Procedures were stratified based on place of service, including inpatient, hospital outpatient departments, office, emergency room, and other.

Results: From 2010 to 2018, the total number of percutaneous renal arteriography procedures declined markedly (-70%) (Table). Most procedures were performed in the hospital outpatient department or office (60%), followed by inpatient (23%). Cardiologists performed most procedures (N = 177,956; 65% of the total volume), followed by radiologists (N = 47,527; 10%) and vascular surgeons (N = 25,217; 6%). Cardiologists had the greatest decline in procedure volumes (41,202 to 6045; -85%). In comparison, radiologists had a lesser decline in procedure volumes (6757 to 4671; -29%). The share of total procedures performed per year by radiologists increased from 12% in 2010 to 28% in 2018, the most of any specialty.

Conclusions: The volume of percutaneous renal arteriography procedures continued to decline from 2010 to 2018 in the Medicare population, likely due to improvements in medical management for renal artery stenosis. The share of total procedures performed per year by radiologists has increased, which may be related to increased embolization procedures.

Total Number of Submitted Services per Year for Percutaneous Renal Artery Arteriography

2010	55,927
2011	47,230
2012	37,962
2013	33,462
2014	24,390
2015	21,119
2016	18,960
2017	17,630
2018	16,819
Total	273,499