



# Analysis of Radiologist Diagnostic Imaging Workload by Place of Service from 2011-2021

Joshua Willis BS, Daniel Gridley MD, Chase Irwin MS  
 University of Arizona College of Medicine – Phoenix; Department of Radiology, Creighton University School of Medicine

## Summary

- RVU rates per 1000 Medicare beneficiaries steadily decreased from 2011 to 2021 (-14%).
- The largest year-to-year drop in total RVU rate occurred from 2019 to 2020 (-86%).
- In 2020, RVU rates had a sharp decline in the ED (-25%), while rates increased significantly in the hospital inpatient setting from the previous year (+15%).

## Methods

This is an analytical retrospective study utilizing claims from 2011-2021 in the Medicare Physician/Supplier Procedure Summary. POS codes identified services done in outpatient facilities, inpatient facilities, private offices, and EDs. Procedures performed outside these four categories were defined as “other”.

The applicable total professional component RVUs were assigned to each NDI Current Procedural Terminology (CPT) code, and RVU rates per 1,000 Medicare beneficiaries were calculated. CPT codes pertaining to invasive procedures and radiation therapy were excluded.

	2011 RVU Rate (%)	2012 RVU Rate (%)	2013 RVU Rate (%)	2014 RVU Rate (%)	2015 RVU Rate (%)	2016 RVU Rate (%)
<b>Offices</b>	192 (15.3)	182 (15.0)	169 (14.3)	165 (13.9)	145 (15.7)	54 (4.9)
<b>Hospital OPDs</b>	472 (37.5)	457 (37.7)	455 (38.4)	459 (38.6)	384 (41.6)	465 (42.4)
<b>Hospital Inpatient</b>	392 (31.1)	361 (29.8)	339 (28.6)	328 (27.5)	234 (25.4)	310 (28.3)
<b>EDs</b>	200 (15.9)	208 (17.2)	218 (18.3)	234 (19.7)	156 (16.9)	262 (23.9)
<b>Other</b>	4 (0.3)	4 (0.3)	4 (0.3)	4 (0.3)	4 (0.4)	4 (0.4)
<b>Total</b>	1,259 (100)	1,212 (100)	1,186 (100)	1,190 (100)	922 (100)	1,095 (100)

Table 1a. Place of Service wRVU; 2011 - 2016

## Results

From 2011-2021, radiologists overall RVU rate per 1000 Medicare beneficiaries steadily decreased. During this period, inpatient hospital RVU rates trended down most significantly, followed by offices and hospital outpatient departments (-41%, -24%, and -8%, respectively). RVU rates in the ED setting increased by 32% in the same period.

In 2020, the RVU rate was 14% of the average from 2011-2019. Overall rates in 2021 rose back up to 94% of the original 2011-2019 RVU rate.

The proportion of RVUs performed in 2020 sharply decreased from 2019 in EDs (-25%), whereas RVU rate proportion in the hospital inpatient setting had a significant increase (15%). In 2021, rate proportions in both the ED and hospital inpatient setting returned closer to the previous 2019 rates (+4% and -1% from 2019 to 2021, respectively).

## Background

This is an analysis of radiologist noninvasive diagnostic imaging (NDI) workloads from 2011-2021 by place of service (POS). Our approach was based on a 2011 study by Levin et al in which they analyzed radiologist workloads from 2006-2011.

Determining the proportion of NDI performed by POS revealed key insights into the state of radiology during their study period. Since then, the healthcare industry has undergone many changes, not limited to COVID-19. Thus, an update for recent years was warranted.

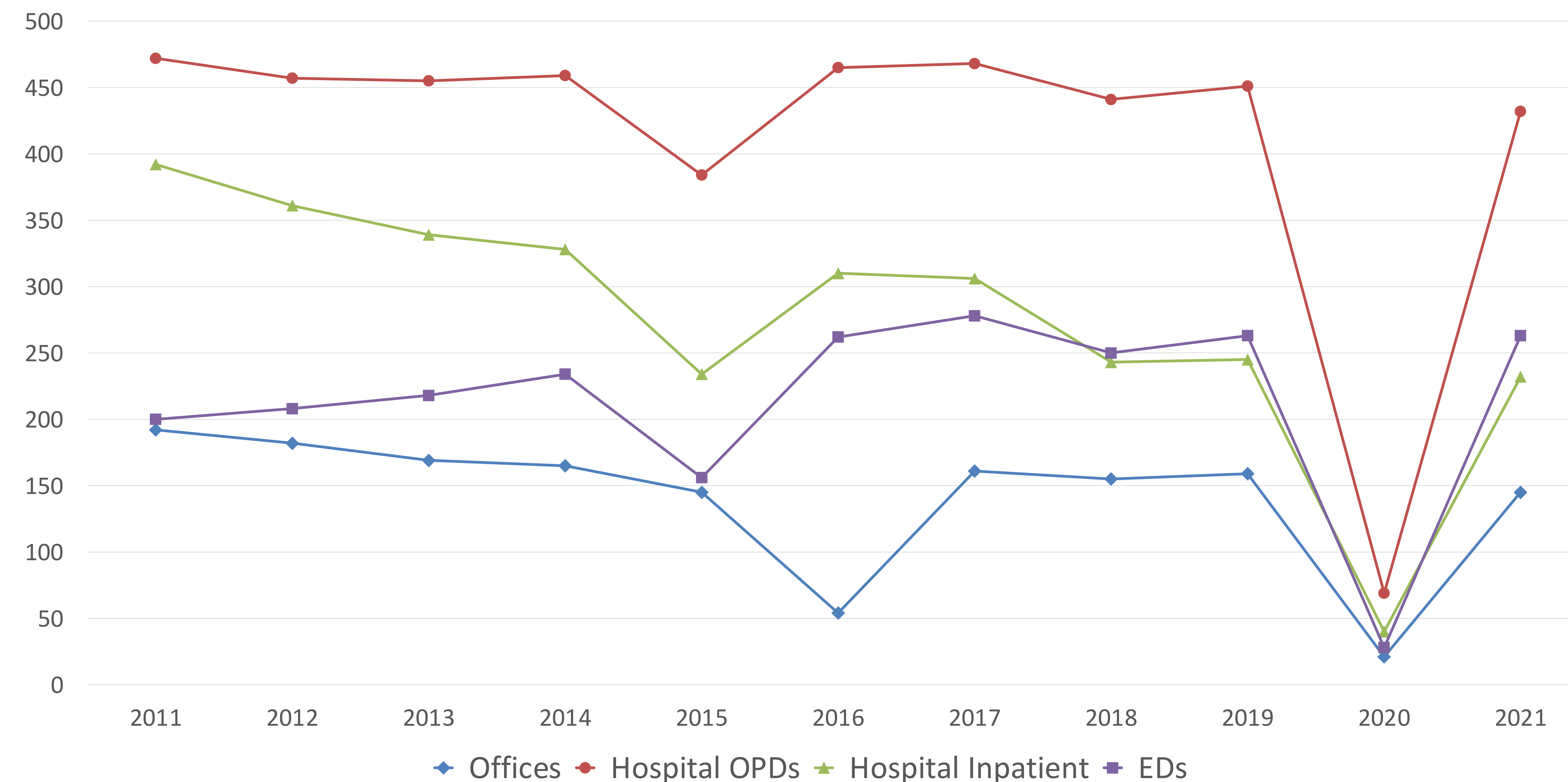


Figure 1. Annual RVU Rates per 1000 Medicare Beneficiaries by Place of Service 2011-2021

	2017 RVU Rate (%)	2018 RVU Rate (%)	2019 RVU Rate (%)	2020 RVU Rate (%)	2021 RVU Rate (%)	Absolute Δ from 2011 – 2021
<b>Offices</b>	161 (13.2)	155 (14.2)	159 (14.2)	21 (13.1)	145 (13.5)	-47
<b>Hospital OPDs</b>	468 (38.4)	441 (40.3)	451 (40.2)	69 (43.1)	432 (40.1)	-40
<b>Hospital Inpatient</b>	306 (25.1)	243 (22.23)	245 (21.8)	40 (25.0)	232 (21.5)	-160
<b>EDs</b>	278 (22.8)	250 (22.9)	263 (23.4)	28 (17.5)	263 (24.4)	+63
<b>Other</b>	5 (0.4)	4 (0.4)	4 (0.4)	2 (1.3)	5 (0.5)	-1
<b>Total</b>	1,218 (100)	1,093 (100)	1,122 (100)	160 (100)	1,077 (100)	-183

Table 1b. Place of Service wRVU; 2017 - 2021