# Unique Medicare Beneficiaries Served by Radiologists: Which of Us "Touch" the Most Patients?

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## Unique Medicare Beneficiaries Served: A Radiologist-Focused Specialty-Level Analysis

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# Purpose

* Prior work demonstrated radiologists serve more unique Medicare beneficiaries each year than any other specialty.

* The aims of this study were to compare the number of unique Medicare fee-for-service beneficiaries served by radiologists and other physicians and to identify characteristics of radiologists serving the most number of unique patients.

# Materials and Methods

* The Medicare Provider Utilization and Payment Data: Physician and Other Supplier Public Use Files were obtained from CMS for 2012, 2013, and 2014
* Physicians listed in all 3 years' files were identified to assess only those physicians participating in the Medicare program for the entirety of 2013. Subsequent analysis was performed using the Medicare Physician and Other Supplier Aggregate table for 2013.
* The count of unique beneficiaries served was extracted for each physician. Also extracted from the file was each physician's primary specialty, as self-identified at the time of Medicare enrollment.
* The 2013 Physician and Other Supplier File was used to identify each physician's gender, and location of practice.
* The Medicare Physician Compare database [7] was used to determine each radiologist's group practice size, year of medical school, and group practice identifier.
* Multivariable linear regression was then performed on all of the characteristics to identify significant independent predictors of total beneficiaries served among radiologists.

# Results

* A total of 56 unique physician specialties providing services to Medicare FFS beneficiaries were identified in 2013 (Fig. 1)

* Of these, diagnostic radiologists on average served the largest number of unique beneficiaries of any specialty (3,150  2,344). Others in the top five included cardiology (2,511  2,000), cardiac electrophysiology (2,279  1,604), dermatology (2,164 2,023), and urology (2,061  1,711).

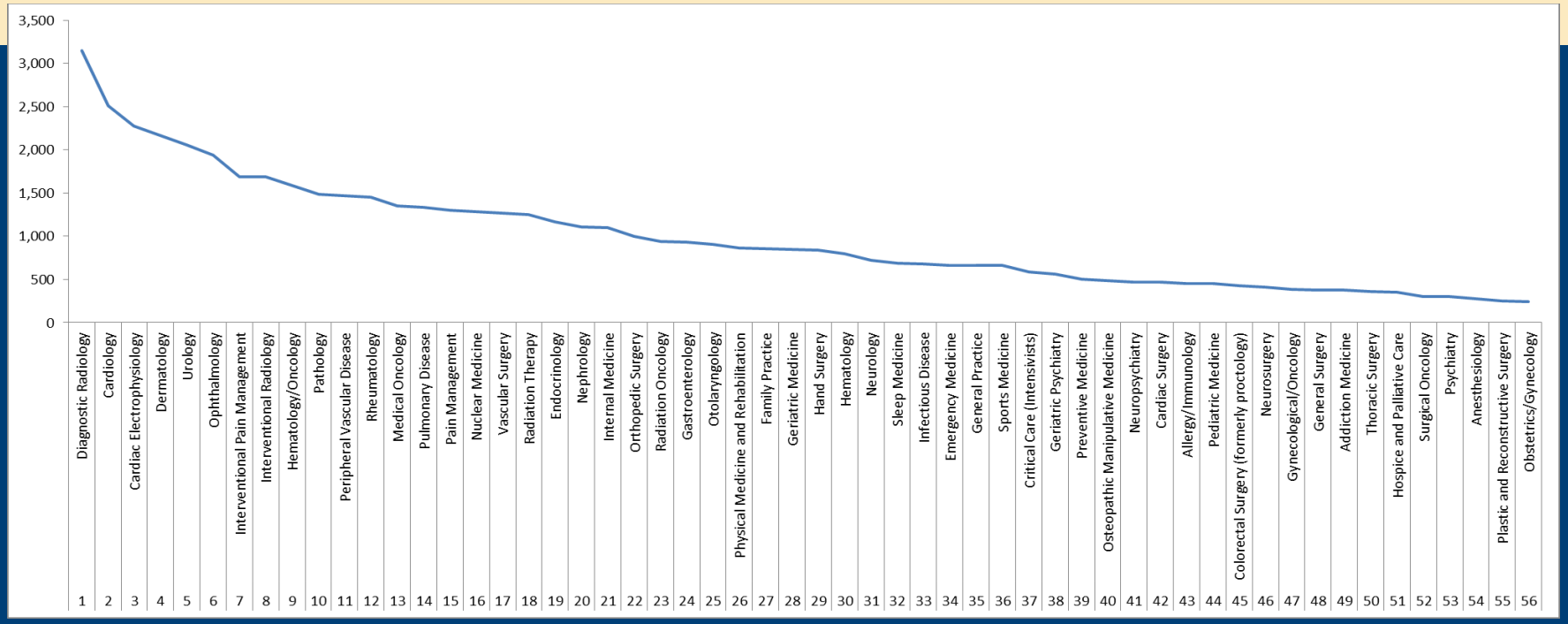


Table 1 Number of unique Medicare fee-for-service beneficiaries served by radiologists, stratified by radiologist characteristics

| Cohort | n | Mean | SD |
|---|---|---|---|
| Overall | 27,467 | 3,067 | 2,341 |
| Practice pattern | | | |
| Generalist | 15,836 | 3,866 | 2,431 |
| Subspecialist | 11,614 | 1,981 | 1,685 |
| Among subspecialists | | | |
| Abdominal | 2,075 | 1,919 | 1,465 |
| Breast | 2,238 | 2,594 | 1,955 |
| Cardiothoracic | 1,925 | 1,094 | 1,921 |
| Musculoskeletal | 1,732 | 987 | 1,993 |
| Neuroradiology | 1,650 | 2,774 | 2,199 |
| Nuclear medicine | 914 | 524 | 1,054 |
| Vascular and interventional | 1,176 | 1,922 | 1,299 |
| Years in practice | | | |
| ≤9 | 2,760 | 2,802 | 2,081 |
| 10-24 | 12,227 | 3,120 | 2,283 |
| ≥25 | 10,083 | 3,220 | 2,490 |
| Group practice size | | | |
| ≤9 | 3,879 | 3,669 | 2,810 |
| 10-49 | 9,725 | 3,649 | 2,363 |
| 50-99 | 3,348 | 3,174 | 2,133 |
| ≥100 | 8,118 | 2,218 | 1,854 |
| Geographic region | | | |
| Midwest | 6,317 | 3,217 | 2,269 |
| Northeast | 6,382 | 2,591 | 1,979 |
| South | 9,130 | 3,716 | 2,625 |
| West | 5,461 | 2,432 | 1,980 |
| Practice rurality | | | |
| Urban | 26,212 | 3,092 | 2,333 |
| Rural | 639 | 3,551 | 2,752 |
| Gender | | | |
| Female | 5,839 | 2,521 | 1,986 |
| Male | 21,628 | 3,214 | 2,407 |
| Practice type | | | |
| Nonacademic | 19,992 | 3,427 | 2,424 |
| Academic | 4,951 | 1,932 | 1,515 |

# Results

* The number of unique beneficiaries was larger for male (3,214) than female (2,521) radiologists, rural (3,551) than urban (3,092) radiologists, nonacademic (3,427) than academic (1,932) radiologists, and radiologists in the South (3,716) than those I other geographic regions (range, 2,432-3,217).
* The number of unique beneficiaries served also increased with smaller group practice sizes (2,218 for 100 group members versus 3,669 for 9 members).
* In addition, the number of unique beneficiaries served increased (P . .038) with increasing years in practice (2,803 for 9 years versus 3,220 for 25 years).
* The number of unique beneficiaries served was higher for generalists (3,866) than subspecialists (1,981) (Fig. 2).
* Among subspecialists, the number of unique beneficiaries was highest for breast radiologists (2,594)

# Results

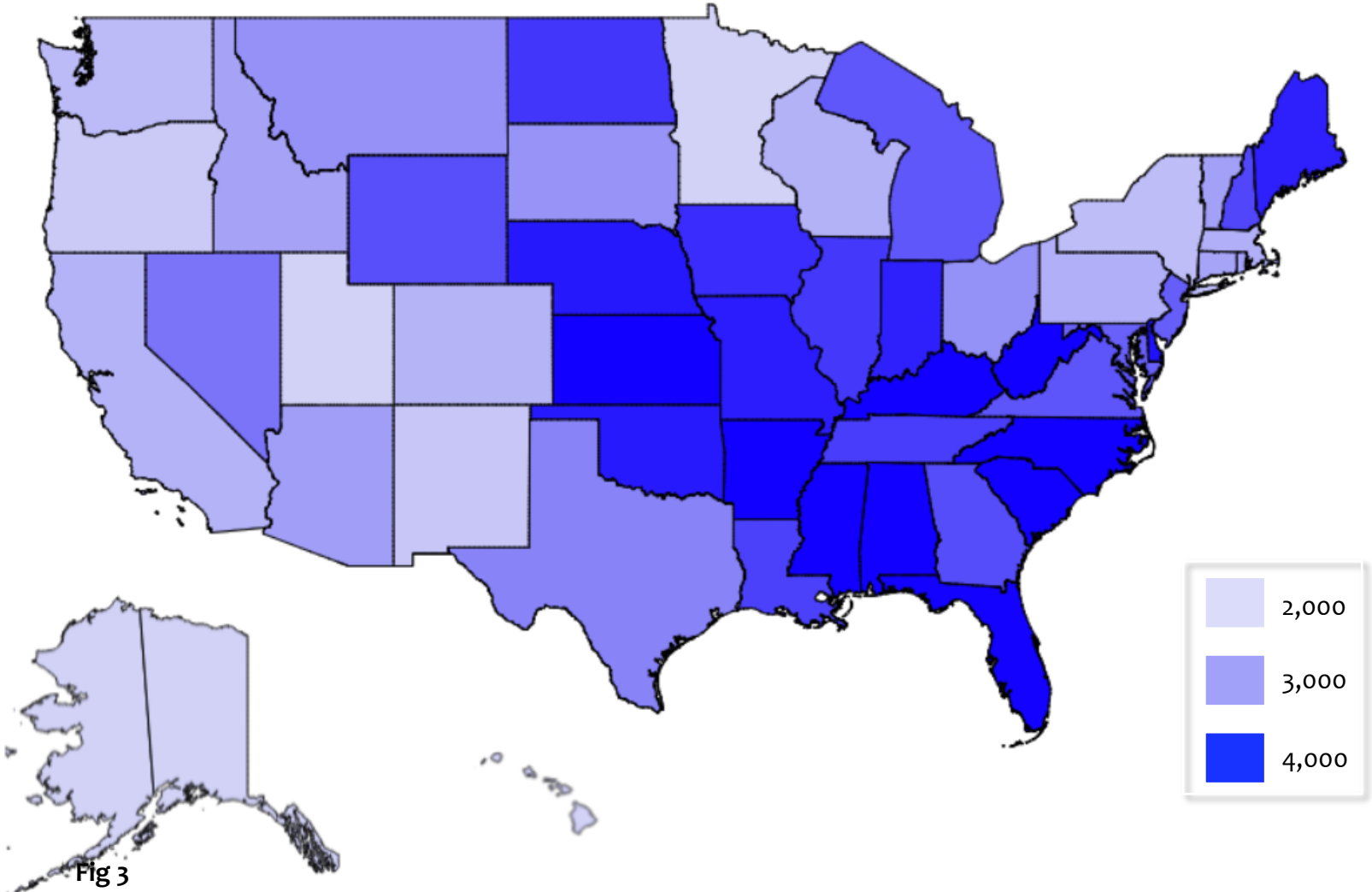



Fig 3
**State-level variation in average number of unique Medicare fee-for-service beneficiaries served by radiologists.**

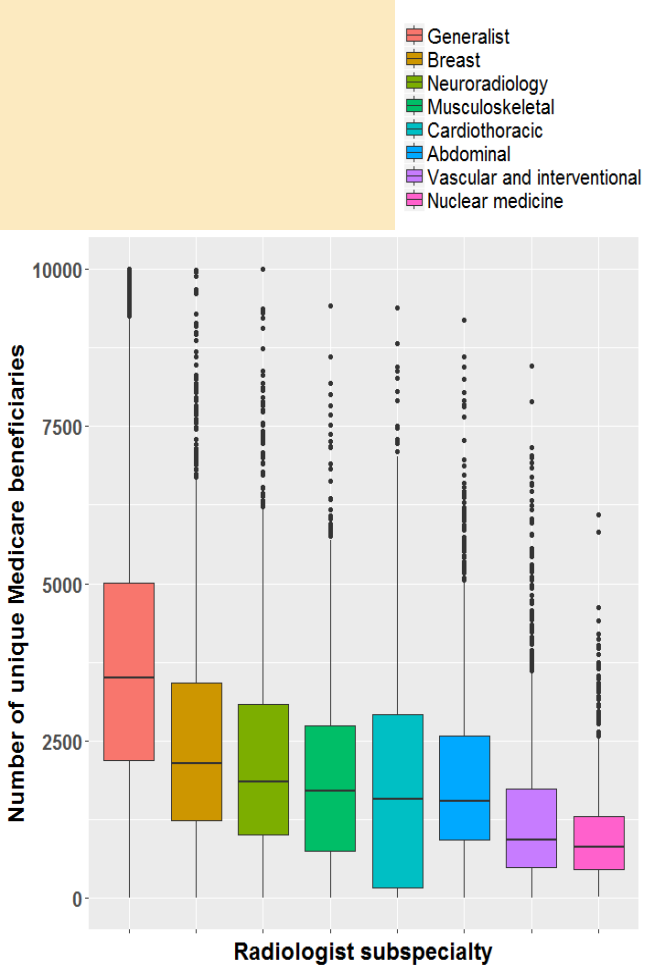
# Results

**Table 2**
**Multivariable linear regression for predicting number of unique Medicare fee-for-service beneficiaries served by radiologists**

Table 2 Multivariable linear regression for predicting number of unique Medicare fee-for-service beneficiaries served by radiologists

| Feature | Reference | Criterion | β | P |
|---|---|---|---|---|
| Practice pattern | Subspecialists | Generalists | +1,542 | <.001 |
| Geographic region | | West | South | +1,176 | <.001 |
| Geographic region | | West | Northeast | +312 | <.001 |
| Geographic region | | West | Midwest | +779 | <.001 |
| Academic status | Academic | Nonacademic | +328 | <.001 |
| Years in practice | ≤9 | 10-24 | +181 | <.001 |
| Years in practice | ≤9 | ≥25 | +253 | <.001 |
| Group practice size | | ≥100 | 10-49 | +788 | <.001 |
| Group practice size | | ≥100 | 50-99 | +693 | <.001 |
| Group practice size | | ≥100 | ≥100 | +500 | <.001 |
| Gender | Female | Male | +225 | <.001 |
| Practice rurality | Urban | Rural | +159 | .073 |
| Among only subspecialists | | | | |
| Geographic region | | West | South | +675 | <.001 |
| Geographic region | | West | Northeast | +265 | <.001 |
| Geographic region | | West | Midwest | +629 | <.001 |
| Academic status | | Academic | Non-academic | +191 | <.001 |
| Years in practice | | ≤9 | 10-24 | +105 | .034 |
| Years in practice | | ≤9 | ≥25 | +91 | .081 |
| Group practice size | | ≥100 | 10-49 | +139 | .019 |
| Group practice size | | ≥100 | 50-99 | +605 | <.001 |
| Group practice size | | ≥100 | ≥100 | +597 | <.001 |
| Gender | Female | Male | +400 | <.001 |
| Practice rurality | | Urban | Rural | −543 | <.001 |
| Subspecialty | Nuclear medicine | | Abdominal | +906 | <.001 |
| Subspecialty | Nuclear medicine | | Breast | +1,644 | <.001 |
| Subspecialty | Nuclear medicine | | Cardiothoracic | +1,025 | <.001 |
| Subspecialty | Nuclear medicine | | Musculoskeletal | +813 | <.001 |
| Subspecialty | Nuclear medicine | | Neuroradiology | +1,005 | <.001 |
| Subspecialty | Nuclear medicine | | VIR | +32 | .703 |

Note: VIR = vascular and interventional radiology.



# Discussion

Among 56 uniquely identifiable physician specialties, diagnostic radiologists on average served the highest number of unique Medicare fee-for-service beneficiaries in 2013.

* Among radiologists, the number of unique beneficiaries served was higher for those who are males and generalists, and part of rural, smaller, Southern, and non-academic practices.

# Discussion

* Among subspecialist radiologists, the number of unique beneficiaries served was highest for breast imagers and lowest for nuclear medicine physicians and vascular and interventional radiologists.

* The large number of served beneficiaries indicates radiology's prominent role in orchestrating patient care and provides radiologists with immense opportunities to expand the face of the specialty.

* An understanding of which radiologists serve the largest volumes of unique patients may help radiology practices more effectively target patient engagement and other Imaging 3.0 efforts.

# Conclusions

* The sheer number of unique beneficiaries served provides radiologists with immense opportunities to expand the face of radiology, but only if they are willing to change their historic stereotype role as "invisible" physicians [13].

* For instance, radiologists may seek to more heavily engage patients, for example, through direct communication of examination results [14]. Radiologists are also encouraged to more heavily embrace opportunities to partner and interact with ordering physicians, serving, for example, as champions of Image Wisely [15] or appropriate use criteria [16] initiatives.

* An understanding of which radiologists serve the largest volumes of unique patients may thus help radiology practices target such patient engagement and Imaging 3.0 efforts and prioritize physician resources accordingly [2].

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