


# Medicare Physician and Other Supplier National Provider Identifier (NPI) Aggregate Report, Calendar Year 2017

Analysis on Physician Data – By Akshay Madan




# About CMS - The Centers for Medicare & Medicaid Services

- The Centers for Medicare and Medicaid Services (CMS) provides health coverage to more than 100 million people through Medicare, Medicaid, the Children's Health Insurance Program, and the Health Insurance Marketplace.
  - The CMS seeks to strengthen and modernize the Nation's health care system, to provide access to high quality care and improved health at lower costs.
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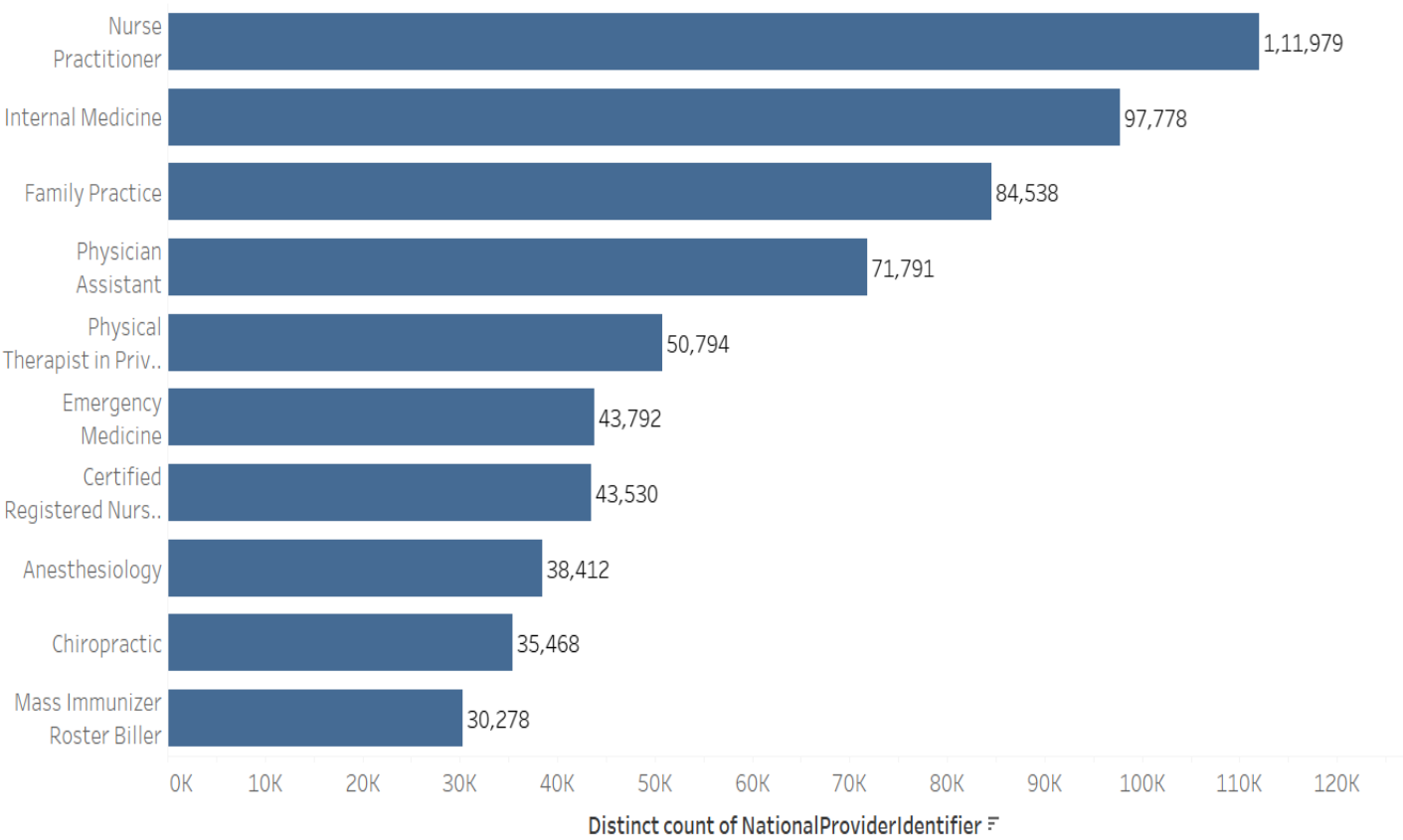
# Medicare Physician and Other Supplier National Provider Identifier (NPI)

## Aggregate Report, Calendar Year 2017

- The “Medicare Physician and Other Supplier National Provider Identifier (NPI) Aggregate Report”, a supplement to the Medicare Provider Utilization and Payment Data: Physician and Other Supplier data, contains information on utilization, payments (Medicare allowed amount, Medicare payment, standardized Medicare payment), and submitted charges organized by NPI. Sub-totals for medical type services and drug type services are included as well as overall utilization, payment and charges.
  - In addition, beneficiary demographic and health characteristics are provided which include age, sex, race, Medicare and Medicaid entitlement, chronic conditions and risk scores.
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# Analysis – Physicians by Type of Provider

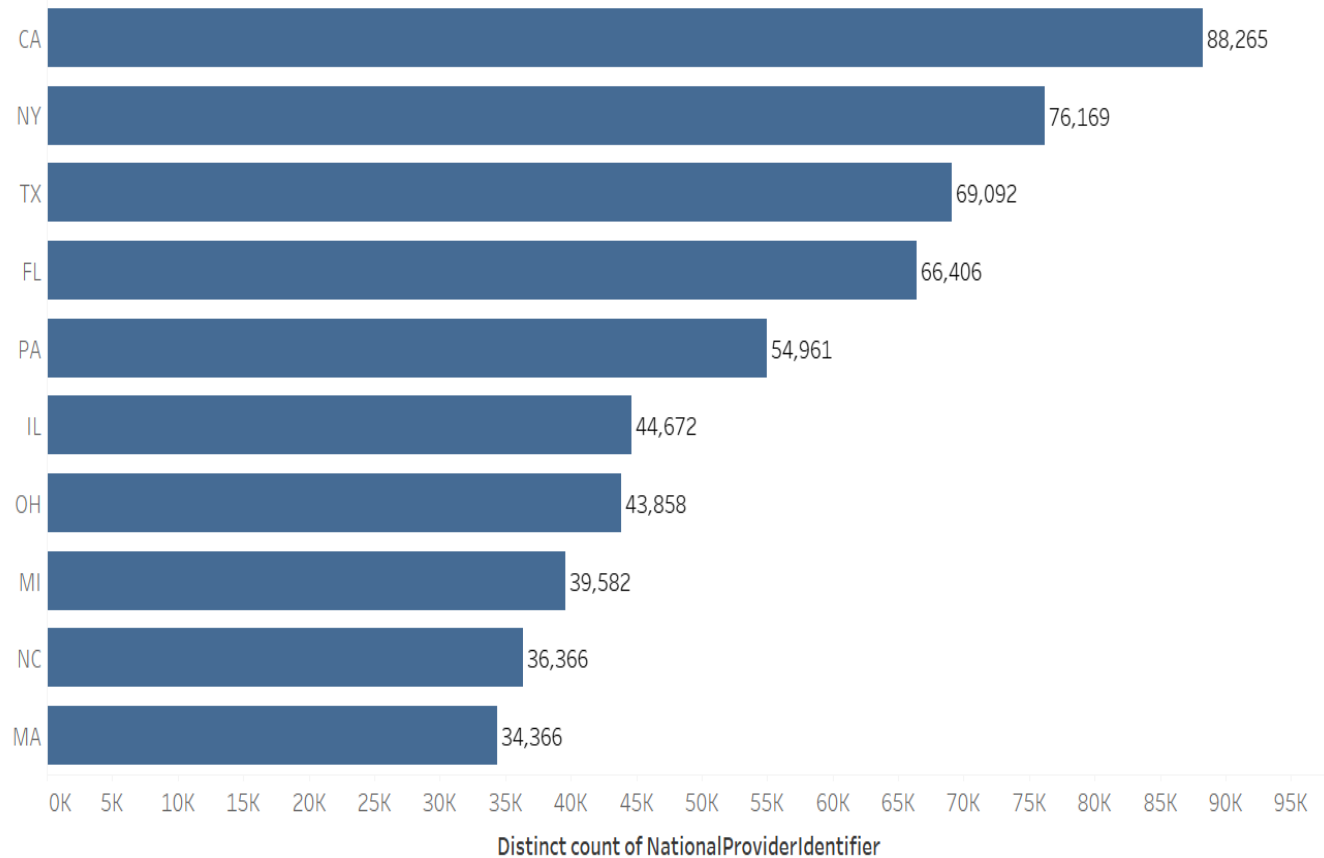
Physicians by Provider Type



- Nurses Practitioner leads the Provider Type in the Category
- Nurse practitioners are nurses with advanced clinical training and their average earnings are half of those of primary care physicians.
- They need fewer years of training than physicians making them a more immediate support to a stretched primary care workforce

# Analysis – Physicians by State

## Top 10 States with Highest Number of Physicians



- Even though California and Texas are in the Top 10 states with Highest Physicians, both states are facing **a shortage in Physicians** w.r.t their Population.
- Most of the Shortages are in the **Rural Parts** of the State
- Alaska with fewest Physicians **has 70% more** Healthcare Cost. An Alaskan spends on average **more than \$3,000 on health care** per year over what the average American spends

# Analysis – Segmentation by Beneficiaries Treated

	No. of Physicians
Beneficiary Segment 1	249089
Beneficiary Segment 2	233329
Beneficiary Segment 3	223437
Beneficiary Segment 5	217814
Beneficiary Segment 4	165018

- Physicians are segmented on the basis of Beneficiaries they treated.
- Segment 5 shows Physicians who treated 0-50 Beneficiaries.
- Segment 4 shows Physicians who treated 50-100 and so on.
- We can see that we have highest no of Physicians treating a large no of Beneficiaries.

# Analysis – Segmentation by Total Medical Medicare Standardized Payment Amount

	No. of Physicians
Payment Segment 5	439031
Payment Segment 4	290738
Payment Segment 1	190844
Payment Segment 3	101720
Payment Segment 2	66354

- Physicians are segmented on the basis of Total Medical Medicare Standardized Payment Amount that Physicians Claimed.
- Segment 5** shows Physicians who claimed **\$0-\$25000.**
- Segment 4** shows Physicians who claimed **\$25000-\$50000** and so on.
- We can see that **highest no. of Physicians claimed lower Payment Amount.**

# Analysis – CROSSTAB 5X5 between both Segments

Payment_Segments	Payment Segment 1	Payment Segment 2	Payment Segment 3	Payment Segment 4	Payment Segment 5
Segments					
Beneficiary Segment 1	141333	30703	31039	41319	4695
Beneficiary Segment 2	37165	23976	42587	93141	36460
Beneficiary Segment 3	9697	8755	19348	77162	108475
Beneficiary Segment 4	2104	2467	6877	42081	111489
Beneficiary Segment 5	545	453	1869	37035	177912

- **CrossTab** between both the Segments with the Count of Physicians.
- We see **highest number** of Physicians in Beneficiary Segment 1 X Payment Segment 1 and Beneficiary Segment 5 X Payment Segment 5
- Many Physicians in Beneficiary Segment 4 are treating lesser Beneficiaries than the ones in Beneficiary Segment 5 and still **Claiming Amount in the same Payment Segment**



# Analysis – Average/Min/Max no of Beneficiaries in each Bucket

Segments	NumberofMedicareBeneficiaries		
	mean	min	max
Beneficiary Segment 1	1078.21	401	1575978
Beneficiary Segment 2	286.62	201	400
Beneficiary Segment 3	146.71	101	200
Beneficiary Segment 4	74.14	51	100
Beneficiary Segment 5	27.92	11	50

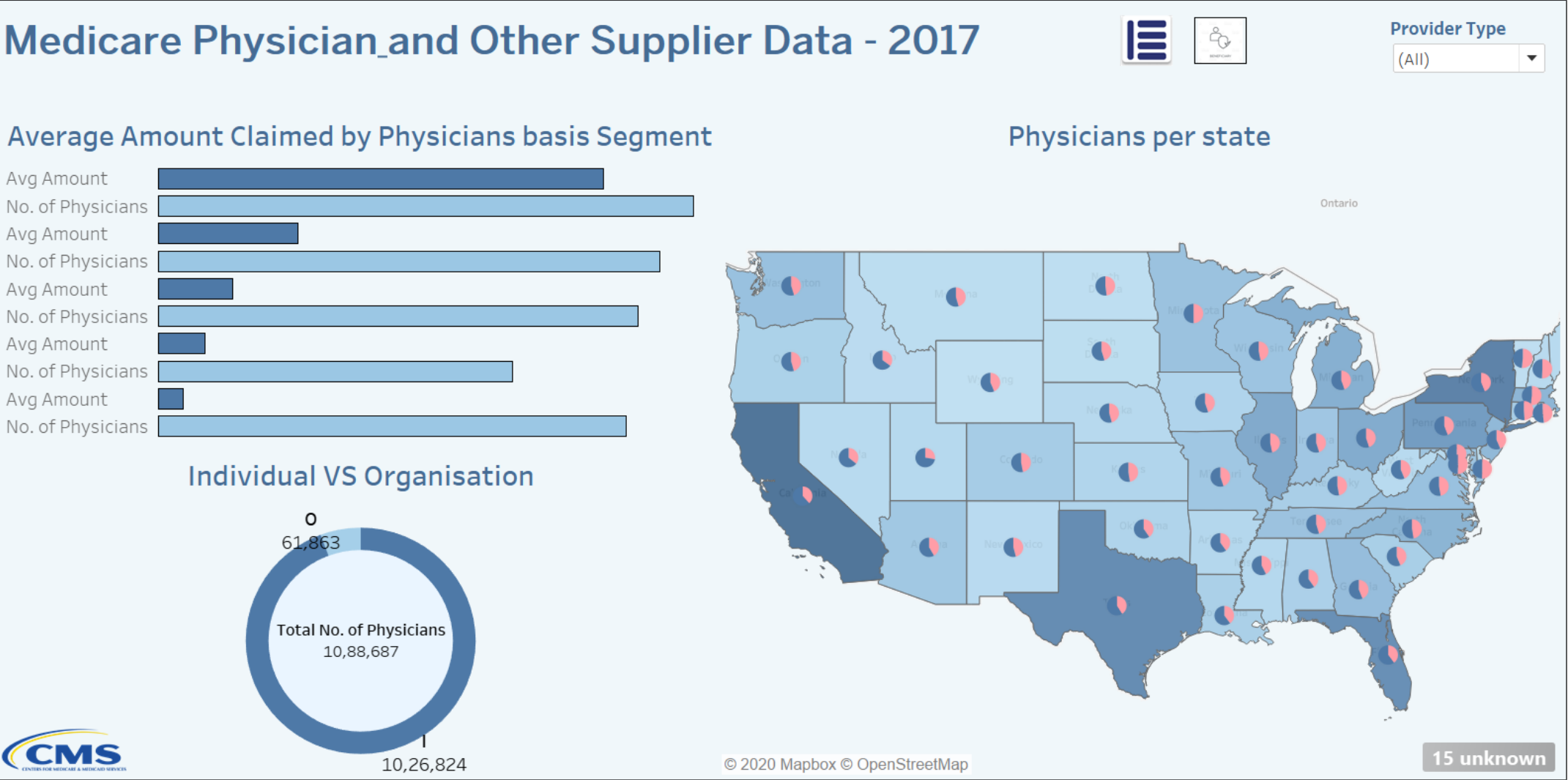
- It seems there is some sort of Data Entry mistake in no. of Beneficiary to be 1575978, which must have pushed the average above than the actuals of Beneficiary Segment 1.
- Rest of the Segments appears to be quite appropriate.

# Analysis – Average/Min/Max no of Payments in each Bucket

Payment_Segments	TotalMedicalMedicareStandardizedPaymentAmount		
	mean	min	max
Payment Segment 1	284891.13	100000.68	237855278.93
Payment Segment 2	86715.13	75000.14	100000.00
Payment Segment 3	61544.74	50000.15	74998.79
Payment Segment 4	33886.35	25000.14	49999.83
Payment Segment 5	10052.63	0.00	24999.73

- Again , It seems there is some sort of Data Entry mistake in the Payment Amount to be 237855278.93, which must have **pushed the average above** than the actuals of Payment Segment 1.
- Rest of the Segments appears to be quite appropriate.

# More Analysis on the Tableau Dashboard and Python Notebook



**THANK YOU**