Gender Differences Between Male and Female Interventional Pain Management Physicians by CPT Code Utilization and Payment

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BACKGROUND

Gender disparities in physician compensation are well documented and pervasive in various medical specialties. They have been shown to persist even when accounting for specialty type, years of experience, and hours worked (1). According to an AAMC analysis, women were paid between $0.72 and $0.96 for every dollar paid to men across different departments and specialties (2).

Objective

We explored gender differences between male and female interventional pain management (IPM) physicians in CPT code utilization and payment for services rendered.

Methods

This study performed a cross-sectional analysis of Medicare Part B utilizing publicly available CMS Physician and Other Practitioners - by Provider and Service (3) file of 2021. Data was filtered by specialty, including Pain Management and Interventional Pain Management (IPM), and excluded all other specialties. CPT codes and corresponding utilization and average charge and payment data was extracted and analyzed to determine the Top 10 most utilized CPT codes in IPM by gender. Differences in charged amount and payed amount by CPT code for male and female IPM physicians was calculated and then ranked according to the greatest difference by gender. Statistical analysis was conducted using R 4.0.3. This study was exempt from IRB review as it utilized publicly available online CMS data per MetroHealth IRB Policy.

Results

- 639 Female IPM physicians in 2021 rendered 775,683 services while 3,538 male IPM physicians rendered 6,600,063 services.
- For both male and female IPM physicians, the most utilized CPT codes were established patient outpatient visits (99214, 99213) and testing for the presence of drugs (80307) (Table1). Together, they comprised nearly 44% of all services rendered in the year 2021.
- For females, the fourth most utilized CPT code was injection of substance into spinal canal of lower back or sacrum using imaging guidance (62323), while for males this was injections of anesthetic and/or steroid drug into lower or sacral spine nerve root using imaging guidance, single level (64483).
- For both male and female, the top 10 most utilized CPT codes comprised 63% of total services rendered.
- Overall, female IPM physicians submitted on average $134.64 less charges than their male colleagues (p<0.001) per CPT code and received payment on average $10.32 less than their male colleagues
- (p<0.001) per CPT code (Table 2).
- CPT 64555, implantation of peripheral nerve neurostimulator
- electrodes, accessed through the skin, had the greatest payment disparity between submitted charge and total payment for male and female IPM physicians, with an average difference of -$320.95 per service.
- CPT 01922, anesthesia for x-ray or radiation therapy, had the second greatest difference of -$47.91 per service.

Table 1: Top 10 CPT Codes by Utilization Male vs Female

Table 1: Top 10 CPT Codes By Utilization Male vs Female								
	Female (n= 775,683)				Male (n= 6,600,063)			
Rank	CPT Code	Description	n (%)	Payment, mean (SE), $	CPT Code	Description	n (%)	Payment, mean (SE), $
1	99214	Established patient outpatient visit, total	23.92	92.28 (0.61)	99214	Established patient outpatient visit,	21.20	92.65 (0.24)
2	99213	Established patient outpatient visit, total	15.33	64.07 (0.49)	99213	Established patient outpatient visit,	16.25	64.17 (0.19)
3	80307	Testing for presence of drug, by chemistry	4.43	60.95 (0.47)	80307	Testing for presence of drug, by	5.24	61.14 (0.10)
4	62323	Injection of substance into spinal canal of	3.37	133.23 (3.67)	64483	Injections of anesthetic and/or	3.82	157.18 (1.31)
5	99204	New patient outpatient visit, total time	3.33	122.37 (0.79)	62323	Injection of substance into spinal	3.34	133.05 (1.37)
6	64483	Injections of anesthetic and/or steroid drug	3.30	159.57 (3.84)	99204	New patient outpatient visit, total	3.13	123.06 (0.29)
7	64493	Injections of lower or sacral spine facet	2.65	137.03 (2.62)	64493	Injections of lower or sacral spine	2.70	138.73 (0.97)
8	64494	Injections of lower or sacral spine facet	2.43	74.78 (1.26)	64494	Injections of lower or sacral spine	2.50	76.10 (0.48)
9	20610	Aspiration and/or injection of large joint or	2.37	49.44 (0.63)	64636	Destruction of lower or sacral	2.45	96.86 (1.18)
10	64636	Destruction of lower or sacral spinal facet	2.17	99.62 (3.43)	20610	Aspiration and/or injection of large	2.06	48.11 (0.24)

Discussion

- We highlight gender disparities in pay and service utilization within interventional pain management.
- Both genders predominantly utilized CPT codes for established patient outpatient visits and drug testing.
- However, females more frequently performed spinal canal injections while males performed nerve root injections.
- Furthermore, female physicians on average submitted less charges and received less payment per CPT code, and differences in submitted charge versus payment between genders varied significantly by code.

References

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Table 2: Top CPT Codes With Greatest Discrepancy in Payment By Gender

All Procedures, mean (SE), $	Female (n= 775,683)	Male (n= 6,600,063)	Difference, $	p
Charges	523.82 (7.99)	658.46 (5.17)	-134.64	<0.001
Payments	95.50 (1.16)	105.82 (0.81)	-10.32	<0.001
Top 10 Procedural Codes With Greatest Payment Discrepancy By Gender, mean (SE) $	Payments			
64555 Implantation of peripheral nerve neurostimulator electrodes, accessed through the skin	202.35 (5.48)	523.31 (107.60)	-320.95	
01922 Anesthesia for x-ray or radiation therapy	96.39 (13.13)	144.30 (9.61)	-47.91	
73525 Radiological supervision and interpretation x-ray of hip joint	69.67 (45.83)	105.46 (5.33)	-35.79	
95991 Refilling and maintenance by physician of implantable spinal or brain drug delivery pump or reservoir	57.39 (29.40)	76.46 (4.42)	-19.08	
64624 Destruction of genicular nerve branches of knee by injection using imaging guidance	189.37 (26.69)	208.29 (10.60)	-18.92	
64454 Injection of anesthetic agent and/or steroid into genicular nerve branches of knee using imaging guidance	120.51 (11.71)	137.17 (4.84)	-16.66	
62370 Electronic analysis reprogramming and refill of spinal canal drug infusion pump by physician	56.68 (4.97)	69.90 (1.00)	-13.22	
01402 Anesthesia for open or endoscopic total knee joint replacement	174.57 (16.69)	186.87 (11.82)	-12.29	
72141 MRI scan of upper spinal canal	94.92 (13.60)	107.16 (3.48)	-12.25	
20551 Injections of tendon attachment to bone	24.92 (4.49)	36.68 (1.66)	-11.76	

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