

# Socioeconomic Disparities in Online Patient Portal Utilization among Total Hip Arthroplasty Recipients

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**INTRODUCTION:** Since 2021, Centers for Medicare and Medicaid Services has mandated patient open access to their medical records. Many institutions use an online portal that allows access to health information and communication with care teams. We aimed to assess how patient demographics affect portal utilization and if this was associated with quality metrics and outcomes after total hip arthroplasty (THA).

**METHODS:** We retrospectively reviewed primary, elective THA at a single institution from 2017-2022. Patients were stratified into two groups based on their online portal status: activated (A) or not-activated (NA). Baseline characteristics and postoperative outcomes collected from the electronic medical record and compared. In total, 9,105 cases were included: 7,395 (81.2%) were A and 1,710 (18.8%) were NA.

**RESULTS:** Patients in the NA group were significantly older ( $p < 0.001$ ), more likely to be Black ( $p < 0.001$ ), single / divorced / widowed ( $p < 0.001$ ), non-English speaking ( $p < 0.001$ ), Medicare or Medicaid insured ( $p < 0.001$ ), from zip codes with median incomes below \$50,000 ( $p < 0.001$ ), and American Society of Anesthesiologists class III or IV ( $p < 0.001$ ). Patient-reported outcome measure (PROM) completion rates were significantly lower in the NA group (19.0% vs. 54.9%  $p < 0.001$ ). Lengths of stay (LOS) were significantly higher in the NA group (2.8 vs. 1.9 days,  $p < 0.001$ ). The NA group was significantly more likely to be discharged to skilled nursing facilities ( $p < 0.001$ ). Comparable rates of 90-day emergency department visits, readmissions, 90-day and two-year revisions were observed across groups.

**DISCUSSION AND CONCLUSION:** There are significant disparities in online portal activation status across patient demographics. Portal activation significantly correlates with PROM completion, LOS, and discharge disposition. Further research should determine how literacy and other factors may drive the relationship between utilization of these portals and PROM completion and inform interventions to improve portal utilization among disadvantaged populations.

	Patient Portal Status		P-Value
	Activated (N=7395)	Not Activated (N=1710)	
Average Age ± SD (Range)	64.1 ± 11.3 (18-97)	68.1 ± 11.1 (21-98)	<0.001
Female Sex (%)	4244 (57.4%)	962 (56.3%)	0.394
Race (%)			<0.001
White	5645 (77.3%)	1142 (67.5%)	
Black or African American	879 (12.0%)	290 (17.1%)	
Asian/Pacific Islander	155 (2.1%)	38 (2.2%)	
Other	624 (8.5%)	222 (13.1%)	
Marital Status (%)			<0.001
Married/Domestic partner	4281 (58.4%)	820 (48.5%)	
Single/Divorced/Widowed	3049 (41.6%)	871 (51.5%)	
Primary Language (%)			<0.001
English	6997 (94.6%)	1320 (77.2%)	
Non-English	398 (5.4%)	390 (22.8%)	
Insurance (%)			<0.001
Commercial	3439 (46.5%)	457 (26.7%)	
Medicare	3527 (47.7%)	1059 (61.9%)	
Medicaid	429 (5.8%)	194 (11.3%)	
ZIP code median income (%)			<0.001
<50,000	1032 (14.4%)	460 (27.7%)	
50,000-75,000	1569 (21.5%)	485 (29.2%)	
75,000-100,000	1583 (22.1%)	372 (22.4%)	
>100,000	2975 (41.6%)	345 (20.8%)	
ASA Class (%)			<0.001
I	504 (6.8%)	60 (3.5%)	
II	4442 (60.2%)	815 (47.7%)	
III	2320 (31.4%)	769 (45.0%)	
IV	117 (1.6%)	63 (3.7%)	
PROM completion rate	4063 (54.9%)	325 (19.0%)	<0.001

Figure 1: Total hip arthroplasty patient baseline demographics based on online patient portal activation status. ASA, American Society of Anesthesiologists. PROM, patient reported outcome measure. SD, standard deviation.

	Patient Portal Status		P-Value
	Activated	Not Activated	
Average Length of Stay; Day ± SD (Range)	1.9 ± 1.8 (0-42)	2.8 ± 2.6 (0-55)	<0.001
Discharge disposition (%)			<0.001
Home	6831 (92.4%)	1346 (78.9%)	
Acute rehab facility	103 (1.4%)	33 (1.9%)	
Skilled nursing facility	459 (6.2%)	326 (19.1%)	
90-day ED visits (%)	333 (4.5%)	92 (5.4%)	0.122
90-day Readmissions (%)	327 (4.4%)	80 (4.7%)	0.646
Reoperation (%)			
90-day	190 (2.6%)	39 (2.3%)	0.491
Two-years	277 (8.2%)	53 (9.3%)	0.412

Figure 2: Total hip arthroplasty perioperative characteristics and postoperative complication rates based on online patient portal activation status. ED, emergency department. SD, standard deviation.