

Factors Associated with Patient-Initiated Phone Calls After Orthopaedic Trauma Surgery

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Background/Purpose: Patient telephone calls after surgery may place significant burden on clinic personnel. As our health-care system moves toward outcome-based medicine with greater emphasis on patient satisfaction, improving safety, efficiency, and communication at the time of discharge is paramount. After discharge, patients rely on information from perioperative counseling and written discharge instructions. If this information is inadequate or unclear, or an unanticipated issue arises, a phone conversation may be required to address the issue. By analyzing the content of these phone calls, one may begin to understand deficiencies in the discharge process. To our knowledge, no study has examined this topic. The purpose of this study is threefold: to (1) determine the incidence of calls in the immediate postoperative period, (2) identify the reasons for patient calls, and (3) identify significant risk factors for patient calls.

Methods: This is a retrospective chart review of all surgeries performed at our institution by the orthopaedic trauma division from January 1, 2014 through December 31, 2014. Demographic, operative and perioperative variables, and the reason for phone calls were recorded. The primary outcome was whether or not a patient made a telephone call within the first 14 days postoperatively. Exclusion criteria included patients who died during the hospitalization and subsequent surgeries in patients with more than one surgical encounter. Univariate statistical analysis was performed using the two-sample Student *t* test and χ^2 test (depending on type of variable) with significance set at a *P* value <0.05. Binary logistic regression was used to determine which variables were predictive of patients calling after discharge.

Results: A total of 751 patients underwent orthopaedic trauma surgical procedures in our study. 26% of patients (*n* = 194) made a phone call within 14 days after surgery, while 74% (*n* = 557) did not. A total of 62% of patients called at some point after their surgery. The most common reasons for phone calls were pain control (22%), bathing/dressing/wound questions (19%), discharge medication questions (9%), home health nursing questions (8%), and clarification of weight-bearing status or activity restriction (5%). Risk factors associated with making a phone call within 14 days postoperatively include shorter hospital length of stay (LOS), nonHispanic ethnicity, married patients, ASA (American Society of Anesthesiologists) score of 2, discharge to home (with or without home health nursing), and outpatient procedure (*P* <0.05). There was a trend toward increased phone calls for patients who were smokers (*P* = 0.12), although this was not statistically significant. There was no difference in age, gender, number of allergies, number of medical comorbidities, employment status, disability status, Workers' Compensation status, and narcotic use between the groups. A multivariate analysis using binary logistic regression showed that shorter LOS (odds ratio [OR] = 1.06, CI 1.02 to 1.09) and discharge to home (OR = 2.4, CI = 1.20 to 4.88) were independent risk factors for more telephone calls, whereas Hispanic

ethnicity (OR = 0.04, CI = 0.00 to 0.79) and widowed marital status (OR = 0.25, CI = 0.09 to 0.72) were independent risk factors for fewer calls.

Variable	Phone call placed within 14 days	No phone call placed within 14 days	P-value
Age (Mean±SD)	49.3±15.9	49.8±18.4	0.744
Length of stay (Mean±SD)	3.4±4.5	5.9±8.3	0.000
Number of allergies (Mean±SD)	1.0±1.6	1.0±1.6	0.624
Number of comorbidities (Mean±SD)	3.3±3.6	3.6±4.0	0.293
Gender	Female = 41.2% Male = 58.8%	Female = 45.2% Male = 54.8%	0.342
Smoking status	Yes = 29.9% No = 70.1%	Yes = 24.2% No = 75.8%	0.117
Ethnicity	Black = 10.8% White = 86.1% Hispanic = 1.0% Asian = 1.0% Other = 1.1%	Black = 11.6% White = 83.2% Hispanic = 3.6% Asian = 0.2% Other = 1.4%	0.422
Marital status	Single = 26.8% Married = 47.9% Divorced = 22.2% Widowed = 3.1%	Single = 34.8% Married = 38.2% Divorced = 16.9% Widowed = 10.2%	0.001
Employment status	Not employed = 40.2% Employed = 51.0% Not listed = 8.8%	Not employed = 46.1% Employed = 45.9% Not listed = 8.8%	0.366
Insurance type	Medicaid = 5.7% Medicare = 20.6% Private = 49.0% Uninsured = 17.0% Not listed = 7.7%	Medicaid = 6.6% Medicare = 27.6% Private = 42.1% Uninsured = 18.5% Not listed = 5.2%	0.183
Workers' Compensation status	Yes = 7.2% No = 1.0% Not listed = 91.8%	Yes = 6.1% No = 1.1% Not listed = 92.8%	0.862
Disability	Yes = 13.4% No = 80.9% Not listed = 5.7%	Yes = 15.1% No = 82.1% Not listed = 2.8%	0.207
History or current narcotic use	Yes = 52.1% No = 47.9%	Yes = 52.2% No = 47.8%	0.983
American Society of Anesthesiologists (ASA) Score	1 = 11.9% 1E = 1.5% 2 = 56.7% 2E = 5.7% 3 = 22.7% 3E = 0.5% 4 = 1.0% 4E = 0.0%	1 = 11.8% 1E = 0.9% 2 = 46.7% 2E = 3.6% 3 = 28.4% 3E = 4.1% 4 = 3.8% 4E = 0.7%	0.003
Discharge destination	Home = 75.8% Home with Home Health = 10.8% Rehab = 5.7% SNF = 7.7% LTAC = 0.0%	Home = 62.9% Home with Home Health = 5.2% Rehab = 17.4% SNF = 13.4% LTAC = 1.1%	0.000
Inpatient (IP) vs. Outpatient (OP) status	IP = 53.1% OP = 46.9%	IP = 63.3% OP = 36.7%	0.013

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.

Conclusions: More than one-fourth of patients undergoing orthopaedic trauma surgery call the surgeon's clinic or office before their first follow-up appointment. Our study identified common reasons and risk factors for phone calls after orthopaedic trauma surgery. Ultimately, we hope to use these data to optimize communication at the time of discharge to improve efficiency, patient care, and patient satisfaction.