EDITOR'S CHOICE

Effects of the Affordable Care Act on Payer Mix and Physician Reimbursement in Hand Surgery

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Purpose To evaluate the effect of the Affordable Care Act (ACA) on the payer distribution and reimbursement rate for hand surgery at our institution.

Methods We reviewed records of 4,257 patients who underwent hand surgery at our institution between January 2008 and June 2016; 2,601 patients underwent surgery before the implementation of the ACA, and 1,656 patients after. Type of procedure, insurance status, amount of money billed, and amount collected were recorded.

Results After the implementation of the ACA, we performed fewer metacarpal fracture repairs, distal radius fracture repairs, and abscess incision and drainage procedures. We performed more endoscopic carpal tunnel releases. The proportion of uninsured patients decreased significantly (15% to 6.4%), and the proportion of patients on Medicare (15.4% to 20.3%) and Medicaid (9.5% to 17.8%) increased significantly. The overall reimbursement rate did not change significantly (32.3% to 30.3%) between the 2 time periods.

Conclusions After the implementation of the ACA, we observed a significant reduction in the number of uninsured patients and an increase in Medicaid and Medicare patients. However, this led to no significant change in reimbursement rates. *(J Hand Surg Am. 2018;■(■):■−■. Copyright © 2018 by the American Society for Surgery of the Hand. All rights reserved.)*

Type of study/level of evidence Economic and design analysis II.

Key words Affordable Care Act, reimbursement, Medicaid, health insurance, hand surgery.

Hand surgery has historically been one of the surgical subspecialties with the highest share of uninsured patients.[1,2] This prevented many patients from obtaining access to a hand surgeon.[2] The uninsured status of a large proportion of patients not only had a negative impact on access to hand surgery, but also placed a financial burden on some medical centers that provided free care to uninsured individuals, because in certain cases, providing care to uninsured individuals can result in a financial loss to the medical center.[3] Therefore, measures to lower the proportion of patients who are uninsured would be expected to not only improve patient access to subspecialty care, but also to lessen the financial burden on "safety net" medical centers. Indeed, in Massachusetts, the health care reform of 2006 resulted in a significant decrease in the proportion of patients who were uninsured, positively affecting access to hand surgery.[4]

The Affordable Care Act (ACA), implemented on January 1, 2014, had 3 main goals: to make health

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insurance mandatory and more affordable, to decrease the number of uninsured individuals, and to decrease health care costs.[5] The ACA included a health insurance mandate that imposed penalties on individuals who did not purchase health insurance. It also led to the expansion of Medicaid in several states to individuals above the federal poverty level.[6]

A previous study evaluated the effect of the ACA on insurance status and reimbursement rate in maxillofacial trauma surgery, and found that as the proportion of uninsured patients decreased, the proportion of patients on Medicaid increased, and the overall reimbursement rate increased.[7] Our goal, in this study, was to evaluate the effect of the ACA on the payer distribution and reimbursement rate for hand surgery at our institution. Our hypothesis was that the ACA led to a decreased proportion of uninsured patients, an increased proportion of patients on Medicaid, and improved reimbursement rates in hand surgery.

METHODS

After approval by our institutional review board, all patients who underwent hand surgery at our institution over an 8.5-year period (January 2008 to June 2016) were reviewed. This encompassed 6 years before the implementation of the ACA, and 2.5 years after. The Current Procedural Terminology codes included in the study were chosen to encompass a broad range of hand procedures commonly performed at our institution, and included the following: first carpometacarpal joint arthroplasty (25447); metacarpal fracture repair (26605, 26607, 26608, 26615); distal radius fracture repair (25609, 25608, 25607); endoscopic carpal tunnel release (29848); and incision and drainage of upper extremity abscess (25028, 26010, 26011). Insurance status included uninsured, private insurance (all belonging to the ACA exchange), Medicare, Medicaid, workers' compensation, and others, such as Tricare (for active military personnel) and Veterans Administration.

For each patient, insurance status at the time of surgery, amount (in US dollars) billed by the physician group, and amount collected by the physician group were recorded. Physician reimbursement rate was defined as amount collected divided by amount charged. Patients treated before the ACA were compared with patients treated after the ACA using the t test and chi-squared analysis, with $P < .05$ representing statistical significance.

RESULTS

A total of 4,257 patients were included in the study. Of them, 2,601 patients underwent surgery before the implementation of the ACA (433.5 patients per year), and 1,656 patients after (662.4 patients per year). Payer distribution and reimbursement before and after the implementation of the ACA are shown in Table 1.

After the implementation of the ACA, we performed fewer metacarpal fracture repairs, distal radius fracture repairs, and abscess incision and drainage procedures. We performed more endoscopic carpal tunnel releases. The proportion of uninsured patients decreased significantly (15% to 6.4%, $P < .05$), and the proportion of patients on Medicare (15.4% to 20.3%, $P < .05$) and Medicaid (9.5% to 17.8%, $P < .05$) increased significantly (Table 1, Fig. 1). The overall reimbursement rate did not change significantly (32.3% to 30.3%, $P > .05$) between the 2 time periods.

Figure 1 shows the payer distribution for each procedure before and after the ACA. For 2 of the 5 procedures (distal radius fracture repair and endoscopic carpal tunnel release), there was a significant decrease in the proportion of patients who were uninsured. For 4 of the 5 procedures (all procedures except incision and drainage abscess), there was a significant increase in the proportion of patients who were on Medicaid.

When analyzing the data by payer, the highest reimbursement rate was provided by workers' compensation (57.1%), followed by private insurance (40.9%), Medicare (24.8%), Medicaid (21.9%), and uninsured patients (0%) (no payment was received from any uninsured patients). Figure 2 shows the reimbursement by payer before and after the ACA. There was a significant decrease in reimbursement by private insurance (43% to 38%, $P < .05$) and Medicare (27% to 22%, $P < .05$), and a significant increase in reimbursement by Medicaid (19% to 24%, $P < .05$). When analyzing only uninsured and Medicaid patients, the reimbursement rate increased from 7.1% to 17.3% ($P \leq 0.05$), where 7.1% represents the reimbursement rate when uninsured and Medicaid patients are combined into one group before the ACA, and 17.3% after the ACA.

When analyzing the data by procedure, the highest reimbursement rate occurred with carpometacarpal arthroplasty (35.1%), followed by distal radius fracture repair (34.2%), endoscopic carpal tunnel release (30.5%), metacarpal fracture repair (30%), and incision and drainage (16.7%). Figure 3 shows the reimbursement by procedure before and after the ACA. There was a significant decrease in reimbursement for carpometacarpal arthroplasty (38% to 32%, $P < .05$), metacarpal fracture repair (33% to 25%, $P < .05$), and endoscopic carpal tunnel release (32% to 30%, $P < .05$).