SCIENTIFIC ARTICLE

# Cost Savings and Patient Experiences of a Clinic-Based, Wide-Awake Hand Surgery Program at a Military Medical Center: A Critical Analysis of the First 100 Procedures

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**Purpose** Wide-awake, local anesthesia, no tourniquet (WALANT) hand surgery was developed to improve access to hand surgery care while optimizing medical resources. Hand surgery in the clinic setting may result in substantial cost savings for the United States Military Health Care System (MHS) and provide a safe alternative to performing similar procedures in the operating room.

**Methods** A prospective cohort study was performed on the first 100 consecutive clinic-based WALANT hand surgery procedures performed at a military medical center from January 2014 to September 2015 by a single hand surgeon. Cost savings analysis was performed by using the Medical Expense and Performance Reporting System, the standard cost accounting system for the MHS, to compare procedures performed in the clinic versus the operating room during the study period. A study specific questionnaire was obtained for 66 procedures to evaluate the patient's experience.

**Results** For carpal tunnel release (n = 34) and A1 pulley release (n = 33), there were 85% and 70% cost savings by having the procedures performed in clinic under WALANT compared with the main operating room, respectively. During the study period, carpal tunnel release, A1 pulley release, and de Quervain release performed in the clinic instead of the operating room amounted to $393,100 in cost savings for the MHS. There were no adverse events during the WALANT procedure.

**Conclusions** A clinic-based WALANT hand surgery program at a military medical center results in considerable cost savings for the MHS. *(J Hand Surg Am. 2016;■(■):■−■.* 

**Type of study/level of evidence** Economic/Decision Analysis IV.

**Key words** Wide-awake hand surgery, WALANT, carpal tunnel release, trigger finger release, clinic-based hand surgery.

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Inadequate health care delivery and limited access to surgical care for veterans, active duty military, and their dependents has been under scrutiny in recent years.[1,2] With the passage of the United States (US) Patient Protection and Affordable Care Act of 2010, the adjusted rate of surgery for elective upper-extremity orthopedic procedures increased markedly for patients using a military health care plan (TRICARE) compared with Medicare, Medicaid, government-subsidized, or private insurance plans, which further overburdens the US military health care system (MHS).[3]

Wide-awake, local anesthesia, no tourniquet (WALANT) hand surgery in the clinic setting may improve access to hand surgery care in the MHS.[4] The use of local anesthesia with epinephrine in the hand and wrist provides excellent hemostasis, obviating the need for tourniquet use, which often requires intravenous sedation anesthesia (IVSA) or general endotracheal anesthesia (GETA) to minimize tourniquet related discomfort.[5–7] Because of this, WALANT hand surgery can be performed in the clinic under field sterility with no reported increase in complications while maintaining a high rate of patient satisfaction.[4,8,9] Specifically in the MHS, performing clinic-based WALANT hand surgery circumvents limitations with operating room availability, which is often exhausted by military trauma. In addition, eliminating the inefficiencies imparted by operating room delays, WALANT hand surgery translates to more hand surgery procedures in the clinic compared with the operating room in the MHS.[4,10]

However, the demand to treat patients urgently and effectively may be impeded by the necessity to maintain low costs for the MHS, which operates at a cost of $52.7 billion, or 13% of the Department of Defense budget, to cover 10 million beneficiaries.[11,12] Clinic-based WALANT hand surgery has been shown to produce substantial cost savings in the civilian sector by eliminating expenditures related to preoperative medical testing, perioperative nursing, anesthesiology, supplies, and medications.[4,10] The potential for expedient and cost-efficient hand surgery afforded by WALANT hand surgery may also be beneficial within the MHS.

However, patient safety, perioperative pain, and anxiety associated with a clinic-based WALANT hand surgery program in the US MHS have not been reported. The purpose of this study was to report the cost savings, safety, and patient experience (pain, anxiety, and willingness to undergo WALANT hand surgery again) of the first 100 clinic-based WALANT hand surgery procedures at a military medical center.

**TABLE 1. Patient Demographics**

| Demographic Variables | All WALANT Patients (n = 100) | Patients With Completed Surveys (n = 66) |
|---|---|---|
| Gender | | |
| Male | 54 | 36 |
| Female | 46 | 30 |
| Age, y (mean ± SD) | 51 ± 17 | 53 ± 16 |

**TABLE 2. Description of First 100 Consecutive Clinic-Based WALANT Hand Surgery Procedures**

| WALANT Procedure | Total Performed |
|---|---|
| CTR | 34 |
| APR | 33 |
| Hardware/foreign body removal* | 14 |
| Phalanx fracture pin fixation | 9 |
| dQR | 4 |
| Tendon repair† | 3 |
| Nail horn excision ablation | 2 |
| Extensor carpi ulnaris debridement | 1 |

*Hardware consisted of subcutaneous Kirschner wires (n = 13) and retained broken glass removal (n = 1).

†Tendon repairs consisted of wrist extensor tendons (n = 2) and thumb flexor tendon (n = 1).

## MATERIALS AND METHODS

This was a prospective cohort study of the first 100 consecutive WALANT hand surgery procedures (Tables 1, 2), a sample of convenience, performed by one fellowship-trained orthopedic hand surgeon from January 2014 to September 2015. The institutional review board approved the study. All WALANT procedures were performed in the Orthopedic Surgery Clinic, which is an accredited section of a Level 1 civilian and military trauma facility and a military tertiary referral center.

### Infrastructure of the WALANT hand surgery program

The WALANT hand surgery program was initiated in January 2014. A series of didactic sessions were provided to primary care managers (PCMs) throughout the local health care system to educate them regarding WALANT hand surgery and provide a direct referral system to streamline potential hand surgery patients for expeditious evaluation. Benefits described to the participants included patient convenience, elimination of preoperative testing (such as laboratory studies,