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## Original Research

ASSH

# The Use of Patient-Reported Outcomes in Clinical Practice: A National Survey of Hand Surgeons



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#### ARTICLE INFO

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Key words: Clinical care Hand surgery Patient-reported outcomes measures Research *Purpose:* Patient-reported outcome measures (PROMs) use in practice could be limited secondary to logistical constraints and lack of consensus regarding PROMs' clinical value. Therefore, the goals of this study are to determine (1) the use of PROMs by practicing hand surgeons, (2) which questionnaires are most used and the purpose for collection, and (3) the barriers to use.

Methods: A survey of American Society for Surgeons of the Hand members was conducted in May 2023. Demographic data of respondents, PROMs collected, and implementation and barriers to use were assessed. Associations between variables were determined by Fischer exact tests and logistic regression. Results: A total of 419 surveys were completed from the 4,523 individuals contacted, representing a 9.3% response rate. Eighty-one percent (81%) were US/Canadian respondents, and 19% reported as other nationalities, with other nationalities reporting use of PROMs at a higher rate than US/Canadian respondents. Odds of PROM use were higher for academic, hybrid, and hospital employed respondents relative to those in private practice settings. The 247 (58%) respondents who did not use PROMs cited barriers including logistic or administrative concerns, uncertainty on application in practice, having no interest, and cost concerns. The most frequently used upper-extremity questionnaire among the 172 (42%) respondents using PROMs was the QuickDASH (Disabilities of the Arm, Shoulder, and Hand), which was used by 112 respondents (65.1%). Patient-reported outcome measures were collected for research/ database purposes by 130 (76%) and monitoring routine clinical care by 103 (60%). Among those using PROMs for clinical care, 79 (77%) of respondents use PROMs for postoperative recovery monitoring and 52 (55%) for counseling regarding surgical expectations. Conclusions: Patient-reported outcome measure use varies by practice setting, with most respondents

not collecting PROMs. There remains large variability in the application of PROMs, and further research is needed to determine and demonstrate the value of PROMs in hand surgery for routine clinical care. *Type of study/level of evidence:* Prognostic IIc.

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Patient-reported outcome measurements (PROMs) are moving beyond the realm of solely research measures, becoming tools for clinicians to measure health care quality to improve patient-centered care.<sup>1</sup> In several orthopedic subspecialties, PROMs are required as part of the standard protocol for surgical procedures such as total joint arthroplasty.<sup>2,3</sup> Despite many clinical

opportunities to implement PROMs—operative outcomes and routine practice—PROMs are frequently underused.<sup>4</sup>

To help hand surgeons incorporate PROMs into their practice, we sought to first understand the current PROM collection environment for hand surgeons. Specifically, the purpose of this study was to determine (1) the use of patient-reported outcome measures by practicing hand surgeons, (2) which questionnaires are most used, (3) the purpose for collecting these data, and (4) the barriers hand surgeons encounter in incorporating PROMs into their practices. The goal of gathering this information was to understand the current environment, as a form of a needs analysis, so that common hurdles can be addressed and opportunities for continued education and innovation can be identified.



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Table 1
Demographics of Respondents Stratified by PROM Use

Demographics	Do Not Use PROMs $(N = 247)$	Use PROMs $(N = 172)$	Total $(N = 419)$	P Value
0-5 y in practice, n (%)	33 (13.4%)	19 (11.0%)	52 (12.4%)	.548
5-10 y in practice, n (%)	29 (11.7%)	32 (18.6%)	61 (14.6%)	.067
10–15 y in practice, n (%)	33 (13.4%)	29 (16.9%)	62 (14.8%)	.331
15–20 y in practice, n (%)	25 (10.1%)	23 (13.4%)	48 (11.5%)	.350
$\geq$ 20 y in practice, n (%)	127 (51.4%)	69 (40.1%)	196 (46.8%)	.028
Private, n (%)	120 (48.6%)	36 (20.9%)	156 (37.2%)	<.001
Academic, n (%)	36 (14.6%)	61 (35.5%)	97 (23.2%)	<.001
Hybrid, n (%)	36 (14.6%)	43 (25.0%)	79 (18.9%)	.011
Hospital employed, n (%)	45 (18.2%)	28 (16.3%)	73 (17.4%)	.695
Nationality, n (%)				<.001
United States and Canada	222 (89.9%)	117 (68.0%)	339 (80.9%)	
Other	25 (10.1%)	55 (32.0%)	80 (19.1%)	

#### Methods

An international survey of currently practicing hand surgeons who are active members of the American Society for Surgeons of the Hand (ASSH) was conducted in May 2023. To encourage responses, survey invitations were sent out iteratively to nonresponders a total of three times spaced out over 6 weeks. Exclusion criteria included (1) participants who did not complete the entirety of the survey and (2) participants who were not currently practicing hand surgeons. Demographic data including surgeons' geographic location, years of practice, and practice setting were collected. The type of PROMs collected along with their purpose/use were also collected. Questions were also asked regarding questionnaire administration and barriers to PROM collection. Please see the appendix for the survey in its entirety.

All respondents were then categorized into those who did and did not use PROMs, and data were analyzed with percentages. Comparison of categorical variables was made by Fisher exact tests. Logistic regression of PROM use by practice setting was used to determine odds ratios of PROM use by practice setting relative to respondents in the private practice setting. Years of practice was partitioned into groups of 0-5, 5-10, 10-15, 15-20, and 20 or more years in practice.

#### Results

In total, 4,523 individuals were contacted by email with the study survey link. Of these email addresses, 168 were not included since either the email address was incorrect or the individual reported being retired from practicing hand surgery. A total of 419 surveys (9.3% response rate) were completed with most respondents being US/Canadian hand surgeons (89.9%). As seen in Table 1, 196 (46.8%) participants are over 20 years into practice, and a substantial number is established in a private practice setting (n = 156, 37.2%), followed by an academic setting (n = 97, 23.2%) and a hybrid setting (n = 79, 18.9%).

There was a statistically significant association between practice setting and PROM collection, with private practice surgeons having a smaller proportion who do collect PROMs compared with those who do not, and academic and hybrid surgeons having a greater proportion who do collect PROMs (Fig. 1).

Fifty-nine percent of respondents did not use any PROMs. The primary reason for these surgeons to not collect PROMs in their practice was logistical/administrative concerns as noted by 66.4% of respondents (Table 2). Other reasons for not using PROMs, including a lack of interest, uncertainty about how to use PROMs clinically, and costs, were similar in frequency. Respondents who stated that they do not use PROMs for logistic or administrative concerns and cost concerns were significantly differentially

distributed between practice settings. Logistic concerns were most frequently held by academic hand surgeons, and cost concerns were most frequently held by private practice surgeons.

*Quick*DASH (Disabilities of the Arm, Shoulder, and Hand) was the most frequently used upper-extremity questionnaire (65%), followed by DASH (33%) and PROMIS upper extremity (27%) (Table 3).

Non–upper-extremity questionnaires were infrequently collected, with the most common being PROMIS physical function (16.8%) and mental health PROMs being even more infrequently captured (Table 4).

Interestingly, as demonstrated in Table 5, many of these PROMs are still being collected with paper forms (n = 88, 51%), followed by tablet/electronic capture in the office (40%) and online patient portals (28.5%). Approximately half of respondents stated that PROM data are being incorporated into their electronic medical records. Other frequent data storage occurs via a third-party software vendor (26%) and practice/departmental or division registries (25%) (Table 6).

When asked why they collect PROMs, surgeons responded that PROM data are being collected most frequently for research/database purposes (76%) and to monitor routine clinical care (60%) (Table 7). In total, 4.1% of respondents selected "other" for the purpose of PROM collection and noted that the data were collected because of a hospital requirement, as a predictive analysis for "value" circulation, and for alternative payment. Analysis by practice setting demonstrated respondents in academic settings to have greater odds of collecting PROMs for research purposes compared with private practice settings; however, both hybrid and hospital employed groups did report collection for this purpose as well (Fig. 2). When being collected for routine care, most of the PROMs are used for monitoring postoperative recovery (n = 79, 76.7%) or counseling patients on preoperative expectations (n = 52, 50.5%) (Table 8). Patient-reported outcome measure data are less frequently being used for making treatment decisions. Ten respondents noted that they use PROMs for reasons other than those listed in the survey. These reasons included documenting the patient's experience, identifying mental health needs, and documenting satisfaction at the time of release from practice.

### Discussion

This international survey found less than half of the hand surgeon respondents to be collecting PROMs in their practices, with the majority reporting the limitation is due to logistical concerns and the poorly defined application of the data once collected. Of the respondents who use PROMs, the majority were in an academic practice setting and primarily used the results for research and database collection purposes. Of the minority that use PROMs for



Figure 1. PROM collection by practice setting relative to private practice setting.

#### Table 2

Reasons Physicians Do Not Use PROMs Stratified by Practice Setting\*

Reason	$\begin{array}{l} \text{Private} \\ (\text{N}=120) \end{array}$	Academic (N = 36)	$\begin{array}{l} \text{Hybrid} \\ (\text{N}=36) \end{array}$	Hospital Employed (N = 45)	$\begin{array}{l} \text{Other} \\ (N=10) \end{array}$	$\begin{array}{c} \text{Total} \\ (\text{N}=247) \end{array}$	P Value
Logistic or administrative concerns	77 (64.2%)	30 (83.3%)	23 (63.9%)	31 (68.9%)	3 (30.0%)	164 (66.4%)	.033
No interest	44 (36.7%)	7 (19.4%)	11 (30.6%)	11 (24.4%)	2 (20.0%)	75 (30.4%)	.264
Uncertainty about how to use PROMs	41 (34.2%)	8 (22.2%)	12 (33.3%)	10 (22.2%)	3 (30.0%)	74 (30.0%)	.468
Cost concerns	40 (33.3%)	11 (30.6%)	5 (13.9%)	7 (15.6%)	1 (10.0%)	64 (25.9%)	.037
Other	14 (11.7%)	3 (8.3%)	1 (2.8%)	9 (20.0%)	7 (70.0%)	34 (13.8%)	<.001

Multiple responses allowed.

#### Table 3

Type of Upper-Extremity PROMs Used by Physician

PROM Type	n (%)
QuickDASH (Disabilities of the Arm, Shoulder, and Hand) DASH PROMIS PRWE Other MHO	112 (65.1%) 57 (33.1%) 47 (27.3%) 33 (19.2%) 33 (19.2%) 15 (8.7%)
None	3 (1.7%)

MHQ, Mental Health Quotient; PROMIS, Patient Reported Outcomes Measurement Information System; PRWE, Patient Rated Wrist Evaluation.

Multiple responses allowed.

routine clinical care, PROMs are most frequently used for counseling patients on preoperative expectations or monitoring postoperative recovery. Interestingly, the patient-generated data were infrequently used to initiate or adjust postoperative therapy or restrictions. This raises the question of how surgeons who use PROMs for postoperative recovery monitoring apply these data to their clinical practice and patient care.

Patient-reported outcome measures can be an effective tool for shared decision making, prediction of postoperative disposition, and development of methods to improve quality of care and efficiency when used appropriately.<sup>4–6</sup> Our data demonstrate that ASSH members in academic settings are more likely to use PROMs than their counterparts in private practice. The physician practice setting and perceived utility of PROMs (ie, research vs clinical decision making) appear to impact the decision to collect PROM data. Most of the respondents in this study (76%) use PROMs for research/database collection and 60% note use in routine clinical care. Collecting data on the patient's perspective of their function

Table 4	
Non–Upper-Extremity PROMs Collecte	h

PROM Collected	$\begin{array}{l} \text{Overall} \\ (\text{N}=172) \end{array}$
None	100 (58.1%)
PROMIS physical function	29 (16.9%)
SF-36	18 (10.5%)
Pain catastrophizing scale	16 (9.3%)
PROMIS-depression	15 (8.7%)
Other	14 (8.1%)
PROMIS-anxiety	9 (5.2%)
PROMIS-29	5 (2.9%)
PHQ-9	4 (2.3%)
PHQ-2	1 (0.6%)

PHQ, Patient Health Questionnaire; SF, Short Form.

via PROMs is important; however, there is a lack of understanding of how to use PROMs in clinical practice at an individual level.<sup>7,8</sup> This is reflected in the survey responses.

However, a growing interest exists in the collection and use of PROMs to support decisions made as part of individual patient care. Makhni et al<sup>4</sup> argued that the best tools for measuring patientcentered health are PROMs as these are validated, standardized, and responsive questionnaires. However, caution is needed. There exist numerous examples of clinicians using PROMs to assess pathologies for which they are not validated, with estimates of less than 10% of musculoskeletal PROMs possessing adequate content validity.<sup>9</sup> Jensen et al<sup>10</sup> found that of 54 randomized control sports medicine trials, 53.7% of the studies used PROMs inadequately, which they note may have a negative influence on the responsiveness and sensitivity of the data. Additionally, before incorporating the use of PROMs into the shared decision making process, clinicians must understand how to interpret the data. As noted by Harris et al,<sup>11</sup>

Method of PROMs Collection*

Method of PROM Collection	$\begin{array}{l} \text{Overall} \\ (\text{N}=172) \end{array}$
Paper forms	88 (51.2%)
iPad or electronic capture in the office	69 (40.1%)
Online patient portal	49 (28.5%)
Mobile friendly websites or QR codes	17 (9.9%)
Other	6 (3.5%)

QR, quick response.

\* Multiple responses were allowed.

the clinical relevance of PROM scores requires further evaluation when applying to the individual level and patient satisfaction.

Our study found that only 18.6% of respondents using PROMs for clinical care use them to guide treatment decisions, possibly because of a lack of understanding on how to interpret the variety of PROM scores and apply them within a shared decision making framework. Hand surgery can look toward other specialties with a track record of using PROMs for monitoring care such as oncology and psychiatry.<sup>12–15</sup> These specialties caution that if PROMs are going to be used in clinical practice, clinicians should not start their process by choosing a particular PROM to use but rather consider what outcomes are important in the given population, be clinically actionable, and be concise enough to avoid heavy patient burden and increase completion rates.<sup>13,14</sup> In these specialties, PROMs are used in "measurement-based" care to longitudinally track data, monitor patient progress, and inform treatment decisions. Tracking symptoms has been shown to improve outcomes for psychiatry care and enhance patient-physician communication and patient well-being in oncology and transplant care. Patient-reported outcome measures have allowed health care professionals to refocus attention from improving life expectancy and limiting morbidity to also improving health from the patient's perspective.<sup>5</sup>

An additional challenge of PROMs in patient care is determining thresholds of clinical significance.<sup>12–14</sup> These include terms such as the minimal clinically important difference, patient acceptable symptomatic state, and substantial clinical benefit. Each of these thresholds has different definitions and uses (Table 9), and their utility in individual patient care remains unclear.<sup>16–19</sup> This is especially true due to the variation in how these values are calculated, and the need for values to be determined for each unique pathology that is being assessed.<sup>20</sup> Some respondents in our study, albeit a quite low percentage (6.4%), indicated that they use PROM data to identify the need for mental health care and redirect care for optimization of patient well-being. This has been a topic of research for over a decade demonstrating the correlation and linkage between the current PROMs and patient's general mental health.<sup>21–23</sup> However, based on the low rates of collection of these data, continued education of hand surgeons regarding these links, as well as understanding how to apply these particular PROM data to patient care, is paramount.

Respondents in our study did not have a consensus for the use of PROMs in clinical care, with the majority using PROMs to monitor postoperative recovery (45.9%), counseling patients on preoperative expectations (30.2%), and guiding treatment decisions (18.6%). As we aim to apply PROM data to individual patient care, we should not only aim to understand the results of the PROMs collected but also improve patient—physician communication on these data. Lai et al<sup>24</sup> note that clinicians should communicate the purpose of a chosen PROM in line with a patient's unique needs and what they feel is most relevant to their own care. Communicating context with patients for what the scores mean and how they are calculated can facilitate patient engagement in PROMs.<sup>2</sup> This will require investigation to best translate PROM data into patient-friendly and understandable content. Resources are available to facilitate these

#### Table 6

Data	Storage	Methods	Used*
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Data Storage Methods Used	$\begin{array}{l} \text{Overall} \\ (\text{N}=172) \end{array}$
Incorporated into electronic medical record	94 (54.7%)
Stored in third-party software	45 (26.2%)
Placed into a department or division registry	44 (25.6%)
Uncertain	10 (5.8%)
Other	7 (4.1%)

\* Multiple responses were allowed.

#### Table 7

Uses of PROMs for Routine Clinic Care\*

Use of PROM for Clinical Care	$\begin{array}{l} \text{Overall} \\ (\text{N}=103) \end{array}$
Monitoring postoperative recovery	79 (76.7%)
Counseling patients on preoperative expectations	52 (50.5%)
Treatment decisions	32 (31.1%)
Initiating or adjusting postoperative therapy or restrictions	13 (12.6%)
Other	10 (9.7%)

<sup>\*</sup> Multiple responses were allowed.

conversations including best practices in data visualization, such as bar charts and line graphs. Evidence supports different "add-ons" such as colors, descriptions of measurement scale directionality, and brief definitions improved interpretability of PROMs for both patients and clinicians.<sup>25</sup>

Our findings also demonstrate the variability in the use of the several upper-extremity PROM questionnaires with the DASH and its derivative the QuickDASH being the most frequently used. There is no consensus on the best questionnaire for research purposes or for guiding individual care for patients with hand surgery. Challenges in this regard include questionnaires that do not specify which extremity is being evaluated, inclusion of potentially nonrelevant domains (aesthetics in the MHQ, shoulder in DASH, and QuickDASH), questions that have not been validated for the pathology that a patient presents with, and functional challenges not captured by the PROMs questions.<sup>26</sup> Common upper-extremity PROMs psychometric properties have been studied and demonstrated that there are floor and ceiling effects on many of these common questionnaires. PROMIS upper-extremity computer adaptive testing and QuickDASH have been found to demonstrate large ceiling effects in high-functioning individuals.<sup>27,28</sup> However, studies have found the computer adaptive testing technique PROMIS physical function upper-extremity computer adaptive testing to be an efficient, useful, and less burdensome alternative to the QuickDASH with fewer floor or ceiling effects.<sup>29</sup>

The Hand Surgery Quality Consortium attempted to develop process guidelines on how to routinely collect and communicate individualized PROMs at the point of care in hand surgery. However, they could not agree on the validity of any proposed process guidelines that would meet the guidelines for clinical importance, feasibility, usability, and scientific acceptability.<sup>30</sup> In attempt to establish a consensus on a standard set for outcome measurement in patients with hand and wrist conditions, the International Consortium for Health Outcomes Measurement Hand and Wrist Working Group established a 5-measurement track (thumb, finger, wrist, nerve, and severe hand trauma) consensus to guide clinicians in selection of appropriate outcome tools and guide predefined time points for outcome measurements. However, the challenge with this proposed system is the usability of these comprehensive tracks in a highly productive patient care setting and understanding how it compares with established PROMIS tools regarding feasibility, accuracy, ceiling effects, or other performance characteristics.<sup>31</sup> As noted by International Consortium for Health



Figure 2. PROM collection for research purposes by practice setting relative to private practice setting.

#### Table 8

Uses of PROMs for Routine Clinic Care Stratified by Practice Setting"

Use of PROM by Practice Setting	$\begin{array}{l} \text{Private} \\ (\text{N}=23) \end{array}$	Academic (N = 40)	$\begin{array}{l} \text{Hybrid} \\ (N=24) \end{array}$	$\begin{array}{l} \text{Hospital Employed} \\ (N=14) \end{array}$	Other $(N = 2)$	Total (N = 103)	P Value
Monitoring postoperative recovery	16 (69.6%)	29 (72.5%)	21 (87.5%)	11 (78.6%)	2 (100.0%)	79 (76.7%)	.589
Counseling patients on preoperative expectations	8 (34.8%)	24 (60.0%)	11 (45.8%)	7 (50.0%)	2 (100.0%)	52 (50.5%)	.222
Treatment decisions	6 (26.1%)	13 (32.5%)	7 (29.2%)	4 (28.6%)	2 (100.0%)	32 (31.1%)	.394
Initiating or adjusting postoperative therapy or restrictions	3 (13.0%)	6 (15.0%)	3 (12.5%)	1 (7.1%)	0 (0.0%)	13 (12.6%)	.981
Other	2 (8.7%)	5 (12.5%)	2 (8.3%)	1 (7.1%)	0 (0.0%)	10 (9.7%)	.971
•							

\* Multiple responses were allowed.

#### Table 9

Threshold of Clinical Significance

Term	Definition
Minimal clinically important differences	The smallest difference in score in the domain of interest, which patients perceive as beneficial and which would mandate a change in the patient management <sup>16</sup> Use in sample size calculations for adequate powering of a study <sup>17</sup> Efficience of a procedure or threshold for shares <sup>18</sup>
Patient acceptable symptoms state	Highest symptoms level below which a patient considers his/her symptom state as acceptable <sup>19</sup> Evaluate patient satisfaction after treatment. Permits comparison between PROMs <sup>19</sup>
Substantial clinical benefit	Amount of change in a PROM required for a patient to feel they significantly improved from an intervention <sup>18</sup>

Outcomes Measurement, the current proposed system needs to be evaluated in terms of daily clinical care and use in working hand clinics. Depending on the track patients are asked to complete, it may take 15 to 30 minutes to complete. The time spent completing these comprehensive tracks may impact response rate and data quality and should be considered. These findings reinforce the importance of evaluating the current PROMs used in hand surgery to determine if these are appropriate for guiding individual care.

Although the barriers to PROMs collection and communication have not been heavily studied, Franklin et al<sup>2</sup> highlighted logistical barriers to PROMs collection to include cost and disruption of workflow, which is consistent with our study; almost 75% of surgeons who did not use PROMs data cited logistical/administrative concerns. Franklin et al<sup>2</sup> reinforced the concept that a consistent framework for PROMs collection and storage is essential to ensure meaningful PROMs data collection, interpretation, and use. A large cohort study by Sisodia et al<sup>32</sup> investigated the characteristics associated with improving the collection of patient-reported outcomes. This study found several factors to be associated with increasing a clinic's PROM collection rate, with the strongest factors being physician and administrative engagement followed by previous collection of PROMs, presence of a clinical champion, and inclusion in a payer incentive contract. The key take away from this finding is the clinic's success in collecting PROM results from robust physician engagement, thus the collection of information needs to be of value to the physician as well. As supported in our study, 30% of the respondents who did not use PROMs were due to uncertainty about how to use them. This uncertainty in turn leads to decreased data collection.

Patient-reported outcome measure collection methods may also impact success. There was variability in obtaining PROMs in our study, with the majority being collected via paper form in the office followed by electronic capture in the office, online patient portal, and mobile friendly websites. Recent literature has demonstrated ways to improve the completion and feasibility of collecting PROMs with remote collection via email, text message, and telephone.<sup>33–35</sup> Sabatino et al<sup>36</sup> demonstrated that most patients prefer electronic PROMs (69.8%) as they were faster to complete, and 93% stated that they would be willing to complete the forms at home prior to appointments, which can increase efficiency in the office. Franko et al<sup>37</sup> further support this finding by showing automated email assignments to collect reliable clinical data without increasing surgeon or staff intervention and keeping costs to the minimum. With the transition to a technologic platform, it is suggested that workflow disruption in clinics can be minimized, therefore reducing the logistic/administrative concerns.<sup>38</sup> Patient-reported outcome measures completed on a technologic platform can be automatically incorporated into the electronic medical record or third-party software, and this streamlined documentation can enhance patient care and facilitate functional capacity and symptoms severity conversations.<sup>4</sup> This incorporation of data into clinician- and patient-facing portals may also facilitate the ease in which conversations based on patients' responses can be had and the use of these data in routine patient care.

The main limitation of this study is sample bias due to the number of responses received in comparison to the number of physicians contacted (9%). Future research that includes a higher response rate would be beneficial to allow more conclusions to be drawn from the use and application of PROMs in hand surgery. Despite the limited response rate, we have confirmed with the ASSH central office that the percentage breakdown of ASSH members in the membership survey is similar to the demographic distribution in our study.<sup>39</sup> Furthermore, survey studies are often further limited by survey response options, especially when the data are categorical. Future work may benefit from focus groups exploring this topic in greater depth.

This study identified that of the hand surgeons who responded, most do not collect PROMs. This is primarily because of logistical and administrative challenges. Furthermore, a majority of those who collect PROMs do not use them for routine clinical care. Overall, the implementation of PROMs by hand surgeons in practice is highly variable. This study identified the need for clinical education, technological optimization, and cost reduction to encourage the use of PROM in patient settings. Multiple opportunities to provide this information exist including best practice articles published in the *Journal of Hand Surgery* family of journals, Hand-e content, and instructional course lectures at annual meetings. These methods of dissemination can provide a forum for discussion of implementation strategies and best practices. Education can focus on how physicians can use PROMs to directly influence patient care and determine opportunities for reduction in logistical burdens.

The logistical burden encountered by PROM collection and use can vary depending on a practice's size and scope. At our institution, we use a multipronged approach to limit the logistical burden on an individual practitioner. One example is sending all patients a prerecorded video explaining the purpose of asking PROMs, the questions' importance, and how these questions are used for direct patient care and research. After implementing this, we saw an increase in patient completion and adherence. A second example is the use of technology to facilitate electronic collection of outcomes before the appointment (reminders to submit information during appointment reminder phone calls/texts and electronic collection of PROMs prior to the appointment via email) and during the appointment (quick response codes to complete PROMs on checkin and providing patients with tablets to complete PROMs in the waiting area/while waiting for the physician in examination rooms). Augmenting this, we also have dedicated personnel to facilitate the collection of data in patient rooms if patients are struggling with any of the technological solutions.

Some of the above solutions have associated costs, which may not be feasible for all physicians; therefore, additional possibilities should be explored. This could include simplifying the PROM used to a single assessment numeric evaluation score to facilitate data collection and storage. The single assessment numeric evaluation score is most used in shoulder surgery, but its use is expanding in hand surgery as well.<sup>40</sup> Additionally, there are relatively inexpensive third-party services, such as SurgiSurvey, that allow for the electronic collection of basic PROMs, which may be useful for nonacademic practices.

Ultimately, the solutions that work for one surgeon/practice may not work for another. Sharing of such best practices, beyond word-of-mouth discussions, is critical to keep our surgeons informed of novel solutions to relatively common challenges. The need to collect PROMs will likely only increase in the future; therefore, it is paramount to understand where surgeons currently stand in this process so that efforts can be made to facilitate opportunities for increased implementation of PROM collection across our specialty.

#### **Conflicts of Interest**

No benefits in any form have been received or will be received related directly to this article.

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