



Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

Brief Measure Information

NQF #: 0426

Corresponding Measures:

De.2. Measure Title: Functional status change for patients with Shoulder impairments

Co.1.1. Measure Steward: Focus on Therapeutic Outcomes, Inc

De.3. Brief Description of Measure: A self-report outcome measure of change in functional status for patients 14 years+ with shoulder impairments. The change in functional status assess using FOTO's (shoulder) PROM is adjusted to patient characteristics known to be associated with functional status outcomes (risk adjusted) and used as a performance measure at the patient level, at the individual clinician, and at the clinic level to assess quality.

1b.1. Developer Rationale: Patients with shoulder impairments with functional status deficits are very common in rehabilitation therapy. Functional deficits affect large numbers of people leading to substantial morbidity, high resources use, severity of illness and is a leading cause of poor quality of life for patients that negatively affects society. In addition, functional status deficits may severely impact people of any age. Therefore, functional status change measurement during rehabilitation treatment is an important construct.

The FOTO (shoulder) PROM was designed to assess functional status and change in functional status in patients with shoulder impairments. Improved function is a primary goal of therapy for shoulder impairments across the world. The primary purposes of the physical therapy profession according to the Guide to Physical Therapist Practice (American Physical Therapy Association. 2001) include enhancing physical functional abilities, restoring, maintaining, and promoting optimal physical function, wellness, fitness, and optimal quality of life as it relates to movement and health. The World Confederation for Physical Therapy has a similar purpose described in the Declarations of Principle and Position Statements (1999) that emphasizes the importance of the activities and participation component of the International Classification of Functioning, Disability and Health (ICF) (World Health Organization 2001). Therefore, functioning, as described by a patient's ability to perform and participate in different physical and social activities, is important when establishing treatment goals for patients attending physical therapy. The Guide offers clear recommendations for assessing functional status by physical therapists, but the recommendation is applicable to other types of providers treating patients with functional deficits.

The FOTO (shoulder) Patient Reported Outcome-Performance Measure (PRO-PM) begins with the patient reported status of function at the onset of care (admission). The specifics of the deficiency in function, reported by the patient, provides data for the clinician to analyze and incorporate into the development of the plan of care by setting specific functional goals. Repeated FOTO (lumbar) PROM assessments can assist the clinician in verifying the effectiveness of the plan of care implemented, or, conversely the need to adjust the plan of care to improve effectiveness.

The final measure quantifies the patient's perception of function at the end of care i.e., at discharge from rehabilitation services. Because the measure relies on patient self report, the functional status outcomes measures are patient centered and reflect the patient's perceived functional ability.

The measure of functional status change collected during rehabilitation is by definition an outcome measure of effectiveness or quality associated with the treatment provided.

Monitoring of aggregated clinician and clinic performance derived from FOTO's risk adjusted, aggregated outcome data (of all patients treated by a clinician or clinic) can be used to monitor quality and identify quality improvement to elevate the effectiveness of care for a specific provider or clinic. Thus, measurement of effectiveness of care for patients with shoulder impairments can help to

promote quality, improve accountability, and ultimately reduce practice variation and enhance outcomes of care across therapy providers.

Systematic reviews of the literature conclude that therapy interventions such as therapeutic exercise is effective in reducing pain and improving function for patients with shoulder pain caused by adhesive capsulitis, subacromial impingement syndrome, and other conditions. However, there has been little research to date comparing provider variability in outcomes of rehabilitation care for patients with shoulder pain. FOTO data confirms that patients improve their shoulder functional status over a course of outpatient therapy. For example, in the Pay-for-Performance study, (Hart and Connolly 2006) patients with shoulder impairment improved from intake to discharge on average 12.5 (SD 14.1) shoulder functional status units (scale 0 for low to 100 for high functioning) for an effect size $[(\text{discharge} - \text{intake})/(\text{standard deviation at intake})]$ of 1.05, which is considered large, using an earlier version of the shoulder CAT. Using the current shoulder (August 2007 to July 2009) functional status CAT, the effect size was 1.2 (n=30,987). (Hart & Wang et al 2010) In addition, the shoulder functional status measure as administered using the CAT (Hart & Cook 2006, Hart & Wang 2010) has strong internal consistency reliability (Cronbach's $\alpha=.97$), strong person separation reliability (.97), negligible floor and minimal ceiling effects. Ninety-four percent of the patients had CAT-FS scores between 20 and 80 (Wang & Hart 2010), minimal detectable change or measurement error of 10.88 out of 100 scale points (95% confidence interval) (Wang & Hart 2010), had strong known group construct validity. Patients who were older, had more chronic symptoms, had more surgeries, had more comorbidities, exercised less prior to receiving rehabilitation, and did not report important improvement in pain intensity reported worse FS at discharge. (FOTO internal study) (Crane, Hart et al. 2006, Hart & Cook et al 2006)

FOTO's measure of functional status was designed to be administered using a computerized adaptive testing (CAT) process developed using Item Response Theory (IRT) methods, which requires a computer and use of proprietary software from Focus On Therapeutic Outcomes, Inc. (FOTO) (Knoxville, TN). However, the same IRT methods used to design the CAT were used to develop a paper and pencil short form from the shoulder functional status computer item bank. The short form produces a measure of shoulder functional status that is equated to the original CAT generated measure, so the clinician can use either the CAT or short form to assess functional status. The short form is in the public domain (<http://www.fotoinc.com/science-of-foto/NQF0426.html>), and can be used by any clinician, and does not require a computer. In addition, if patients have access to the internet, they can complete the shoulder functional status CAT online. Patients can access the CAT via the internet for no cost. The CAT (via the proprietary software or internet) and short form produce the statistically equivalent shoulder functional status measure. Thus, the shoulder functional status measure can be used by clinicians who want a paper and pencil short form available in the public domain or by clinicians participating with the Focus on Therapeutic Outcomes, Inc. clinical data registry that employ the CAT or paper and pencil short form application. Use of the short form and internet applications produce measures that can be risk adjusted.

S.4. Numerator Statement: Patient Level: The residual functional status score for the individual patient (residual scores are the actual change scores - predicted change after risk adjustment).

Individual Clinician Level: The average of residuals in functional status scores in patients who were treated by a clinician in a 12 month time period for shoulder impairment.

Clinic Level: The average of residuals in functional status scores in patients who were treated by a clinic in a 12 month time period for shoulder impairment.

S.6. Denominator Statement: All patients 14 years and older with shoulder impairments who have initiated rehabilitation treatment and completed the FOTO shoulder FS outcome instrument at admission and discharge.

S.8. Denominator Exclusions: •Patients who are not being treated for a Shoulder impairment
•<14 years of age

De.1. Measure Type: Outcome: PRO-PM

S.17. Data Source: Electronic Health Data, Instrument-Based Data, Paper Medical Records

S.20. Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Facility

IF Endorsement Maintenance – Original Endorsement Date: Jul 31, 2008 **Most Recent Endorsement Date:** Jul 07, 2015

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret

results? NA

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.**

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

[2a_NQF_Shoulder_Evidence_Submission_Form_102614-635733279891224461.docx](#)

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), *SKIP this question and answer the composite questions.*

Patients with shoulder impairments with functional status deficits are very common in rehabilitation therapy. Functional deficits affect large numbers of people leading to substantial morbidity, high resources use, severity of illness and is a leading cause of poor quality of life for patients that negatively affects society. In addition, functional status deficits may severely impact people of any age. Therefore, functional status change measurement during rehabilitation treatment is an important construct.

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Repeated FOTO (lumbar) PROM assessments can assist the clinician in verifying the effectiveness of the plan of care implemented, or, conversely the need to adjust the plan of care to improve effectiveness.

The final measure quantifies the patient's perception of function at the end of care i.e., at discharge from rehabilitation services. Because the measure relies on patient self report, the functional status outcomes measures are patient centered and reflect the patient's perceived functional ability.

The measure of functional status change collected during rehabilitation is by definition an outcome measure of effectiveness or quality associated with the treatment provided.

Monitoring of aggregated clinician and clinic performance derived from FOTO's risk

adjusted, aggregated outcome data (of all patients treated by a clinician or clinic) can be used to monitor quality and identify quality improvement to elevate the effectiveness of care for a specific provider or clinic. Thus, measurement of effectiveness of care for patients with shoulder impairments can help to promote quality, improve accountability, and ultimately reduce practice variation and enhance outcomes of care across therapy providers.

Systematic reviews of the literature conclude that therapy interventions such as therapeutic exercise is effective in reducing pain and improving function for patients with shoulder pain caused by adhesive capsulitis, subacromial impingement syndrome, and other conditions. However, there has been little research to date comparing provider variability in outcomes of rehabilitation care for patients with shoulder pain. FOTO data confirms that patients improve their shoulder functional status over a course of outpatient therapy. For example, in the Pay-for-Performance study, (Hart and Connolly 2006) patients with shoulder impairment improved from intake to discharge on average 12.5 (SD 14.1) shoulder functional status units (scale 0 for low to 100 for high functioning) for an effect size $[(\text{discharge} - \text{intake}) / (\text{standard deviation at intake})]$ of 1.05, which is considered large, using an earlier version of the shoulder CAT. Using the current shoulder (August 2007 to July 2009) functional status CAT, the effect size was 1.2 (n=30,987). (Hart & Wang et al 2010) In addition, the shoulder functional status measure as administered using the CAT (Hart & Cook 2006, Hart & Wang 2010) has strong internal consistency reliability (Cronbach's $\alpha=.97$), strong person separation reliability (.97), negligible floor and minimal ceiling effects. Ninety-four percent of the patients had CAT-FS scores between 20 and 80 (Wang & Hart 2010), minimal detectable change or measurement error of 10.88 out of 100 scale points (95% confidence interval) (Wang & Hart 2010), had strong known group construct validity. Patients who were older, had more chronic symptoms, had more surgeries, had more comorbidities, exercised less prior to receiving rehabilitation, and did not report important improvement in pain intensity reported worse FS at discharge. (FOTO internal study) (Crane, Hart et al. 2006, Hart & Cook et al 2006)

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1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. *(This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.*

Tables 1b2a shows the number of patients, completed treatment episodes, number of clinics, providers (clinicians) and states as well as intake and discharge functional status scores for all patients with shoulder impairments who were discharged from treatment in 2011-2013, with data stratified by year. Table 1b2b shows this data by clinic for those clinics who had a minimum of 40 patients per year with shoulder impairments and thus participated in FOTO's benchmarking reporting system in 2011-2013. Refer to Attachment for Shoulder 1b.2a and 1b.2b.

For valid ranking purposes, in 2011-2013 FOTO recommended that a provider have at least 40 completed shoulder impairment episodes in each year.

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

NA

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity,

gender, age, insurance status, socioeconomic status, and/or disability. (*This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.*) For measures that show high levels of performance, i.e., “topped out”, disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

Table 1b.4a: This table includes disparity data collected by population group during the three years indicated. It should be noted that for survey efficiency providers are permitted to exclude these questions (and most chose to do so). Additionally, due to the sensitive nature of these questions, the patient is allowed to advance the survey without providing a response. The number of patients who answered each item is provided. Refer to Table Attachment for Table 1b.4a.

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

NA

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area (check all the areas that apply):

Musculoskeletal, Musculoskeletal : Joint Surgery, Musculoskeletal : Osteoarthritis, Musculoskeletal : Rheumatoid Arthritis, Surgery, Surgery : General Surgery, Surgery : Perioperative and Anesthesia

De.6. Non-Condition Specific(check all the areas that apply):

Health and Functional Status : Change, Health and Functional Status : Physical Activity

De.7. Target Population Category (Check all the populations for which the measure is specified and tested if any):

Elderly, Populations at Risk, Populations at Risk : Dual eligible beneficiaries, Populations at Risk : Veterans

S.1. Measure-specific Web Page (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

Shoulder Functional Status is available at: <http://www.fotoinc.com/science-of-foto/NQF0426.html>

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is not an eMeasure Attachment:

S.2b. Data Dictionary, Code Table, or Value Sets (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: [Shoulder_data_dictionary_2017Dec.xlsx](#)

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Attachment Attachment: [Shoulder_data_dictionary_2017Dec-636501439084752453.xlsx](#)

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Patient

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

Yes

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

There have been 2 changes: 1) the risk adjustment model was updated, and 2) the Shoulder CAT was expanded to include additional items.

1. SUMMARY DETAILS ABOUT NEW RISK ADJUSTMENT (Shoulder)

- Used 2014-2016 dataset (n=317,343)
- New factors added that emerged as significant:
 - o exercise history (seldom/none, 1-2 x/wk, 3+/wk)
 - o previous treatment for the condition (yes/no),
 - o medication use for the condition (yes/no),
 - o 30 specific comorbidities (15 significant in Shoulder model),
 - o 9 post-surgical code categories (7 significant in Shoulder model)
- Removal of Fear Avoidance factor for statistical and clinical/performance rationales
- The project was led by Daniel Deutscher, PT, PhD of Maccabi Health, Israel.

2. SUMMARY DETAILS ABOUT THE EXPANDED SHOULDER CAT

- Expanded (re-calibrated) the item bank from 37 to 53 functional questions
- A new Shoulder short form (aka paper survey) with scoring table was developed in accordance with the expanded item bank. This is provided on the measure-specific web page.
- The project was performed by Karon Cook, PhD and Michael Kallen, PhD, both of Northwestern University.

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Patient Level: The residual functional status score for the individual patient (residual scores are the actual change scores - predicted change after risk adjustment).

Individual Clinician Level: The average of residuals in functional status scores in patients who were treated by a clinician in a 12 month time period for shoulder impairment.

Clinic Level: The average of residuals in functional status scores in patients who were treated by a clinic in a 12 month time period for shoulder impairment.

S.5. Numerator Details (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Patient Level: The residual score for the individual patients with shoulder impairments is derived by applying the statistical risk adjustment model described in S.14 and S.15 and applying steps 1-5 as described in S.18. The risk-adjusted scores can be applied to evaluate performance at the patient level using the methods described in section 2b5.1j of this application.

Individual Clinician Level: The average residuals in functional status scores in patients who were treated by a clinician in a 12 month time period for shoulder impairment. Average scores are calculated for all clinicians, however performance is evaluated only for those clinicians that had a minimum of 10 patients in the previous 12 months. To maximize stability of the benchmarking estimates. In 2011-2013, FOTO used a standard threshold of 40 patients/clinician regardless of clinic size, but has recently changed its

procedure to enable participation by clinicians that do not have a sufficient volume of patients. The score is derived by applying steps 1-6 as described in S.18.

Clinic Level: The average of residuals in functional status scores in patients who were treated within a clinic in a 12 month time period for shoulder impairment. Average scores are calculated for all clinics, however performance is evaluated only for large clinics (5 or more clinicians) that had a minimum of 40 patients, and small clinics (1-4 clinicians) that had a minimum of 10 patients per clinician, in the previous 12 months to maximize stability of the benchmarking estimates. In 2011-2013, FOTO used a standard threshold of 40 patients/clinics regardless of clinic size, but has recently changed its procedure to enable participation by smaller clinics that do not have a sufficient volume of patients. The score is derived by applying steps 1-6 as described in S.18.

Both comparative benchmark reports (i.e., scale ranging from 0 to 100 with higher scores meaning higher functional abilities) at the clinician or clinic level include patients with shoulder impairments, who were treated in therapy and had their functional status assessed at admission and at the end of their episode of therapy and were discharged from therapy.

S.6. Denominator Statement *(Brief, narrative description of the target population being measured)*

All patients 14 years and older with shoulder impairments who have initiated rehabilitation treatment and completed the FOTO shoulder FS outcome instrument at admission and discharge.

S.7. Denominator Details *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

The established ICD-9-CM codes for the shoulder include: soft tissue disorders of muscle, synovium, tendon, bursa, or enthesopathies (ICD-9 codes 725-729); sprains and strains of the shoulder (ICD-9 code 840 including unspecified sprain or strain); fractures (ICD-9 codes 810-819 including clavicle, scapula, humerus); arthropathies (ICD-9 codes 710-719, including osteoarthroses, rheumatoid arthritis); disorders of the bone and cartilage (ICD-9 codes 730-739); dislocations of shoulder (ICD-9 codes 831); post-surgical (CPT codes including 23107 arthrotomy, 23405 tenotomy).

The ICD 10 Crosswalk is provided on the measure specific webpage provided in S.1.

S.8. Denominator Exclusions *(Brief narrative description of exclusions from the target population)*

- Patients who are not being treated for a Shoulder impairment
- <14 years of age

S.9. Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

- Patients who are not being treated for a shoulder impairment
- Age under 14 years old.

S.10. Stratification Information *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*

Risk adjusted - not stratified

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

Statistical risk model

If other:

S.12. Type of score:

Continuous variable, e.g. average

If other:

S.13. Interpretation of Score (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

Better quality = Higher score

S.14. Calculation Algorithm/Measure Logic (Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)

STEPS TAKEN TO PRODUCE THIS MEASURE:

Definitions:

Patient's Functional Status Score. A functional status score is produced when the patient completes the FOTO (shoulder) PROM administered by internet or paper and pencil. The functional status score is continuous and linear. Scores range from 0 (low function) to 100 (high function). The survey is standardized, and the scores are validated for the measurement of function for this population.

Patient's Functional Status Change Score. A functional status change score is calculated by subtracting the Patient's Functional Status Score at Admission from the Patient's Functional Status Score at Discharge.

Predicted Functional Status Change Score. Functional Status Change Scores for patients are risk adjusted using multiple linear regression methods that accounted for the following independent variables: Patient's Functional Status Score at Admission, patient age, symptom acuity, surgical history, gender, specific co morbidities, payer type, use of medication for the shoulder impairment at Intake, previous treatment for the shoulder condition, exercise history, and post-surgical category if applicable.

The Patient's Functional Status Change Score is the dependent variable. The statistical regression produces a Risk-Adjusted Predicted Functional Status Change Score.

Risk-adjusted Functional Status Change Residual Score. The difference between the actual change and the predicted change scores (after risk adjustment) is the residual score and should be interpreted as the unit of functional status change different than predicted given the risk-adjustment variables of the patient being treated. As such, the risk-adjusted residual change score represents risk-adjusted change corrected for patient characteristics. Risk-adjusted residual change scores of zero (0) or greater (>0) should be interpreted as functional status change scores that were predicted or better than predicted given the risk-adjustment variables of the patient, and risk-adjusted residual change scores less than zero (<0) should be interpreted as functional status change scores that were less than predicted given the risk-adjustment variables of the patient.

Aggregated risk-adjusted residual scores: The average of residual scores of functional status (actual change - predicted change after risk adjustment) from a provider (clinician or clinic). The aggregated scores are used to make comparisons between clinicians or clinics.

STEPS:

First, the patient completes FOTO's functional status survey for the Shoulder at Admission, which generates the Patient's Functional Status Score at Admission

Second, patient completes FOTO's functional status survey at or near Discharge, which generates the Patient's Functional Status Score at Discharge

Third, the Patient's Functional Status Change Score (raw, non-risk-adjusted) is generated

Fourth, a Risk-adjusted Predicted Functional Status Change Score is generated using a regression equation

Fifth, a Risk-adjusted Functional Status Change Residual Score is generated for each patient.

Sixth, the average residual scores per clinician and/or clinic are calculated, and scores for all clinicians/clinics in the database are ranked. The quality score is the percentile of the clinician and/or clinic ranking. The quality scores and its 95% CI can be compared to the benchmark (a score of zero) to determine if the performance is below, at, or above the predicted average. FOTO recommends that clinicians have a minimum of 10 patients/year and clinics have a minimum of 10 patients/therapist per year for small clinics or 40 patients per year for larger clinics (5 or more clinicians) in order to obtain stable estimates of provider

performance.

S.15. Sampling *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*

IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.
NA because all eligible patients are expected to be surveyed if they have a functional deficit of the appropriate body part.

S.16. Survey/Patient-reported data *(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)*

Specify calculation of response rates to be reported with performance measure results.

The instructions vary somewhat on the timing and format of the survey process. The timing involves initial or Intake surveys and Status (or follow-up) surveys. The paper/pencil version available on the sponsor's website at <http://www.fotoinc.com/science-of-foto/NQF0426.html> and includes the following instructions:

FOTO Shoulder 10-Item Paper Short Form

(Date of last update: 2/08. Date of planned update: none)

We are interested in knowing whether you are having any difficulty at all with the activities listed below because of your shoulder problem for which you are currently seeking attention. Please provide an answer for each activity by selecting a response.

The local survey is when the patient is logged into the web browser or patient completes a paper and pencil survey in the clinic and the remote survey is when the patient is responding to a link that has been emailed to the patient. or to a paper and pencil survey mailed to the patient

Intake Local

Welcome {{PatientFirstName}}

The comprehensive evaluation that you will have to start your therapy treatment at {{ClinicName}} includes a computerized functional assessment that will help your clinician better understand your condition and how it impacts your quality of life. This information will help your clinician develop treatment goals with you and is an important part of your treatment.

When you are ready to get started, click the 'Begin' button. Please respond to each question with the response that best describes you or your level of function at this time.

The information you share is confidential, a part of your medical record, and is subject to all protected health care information regulations.

Intake Remote

Welcome

The comprehensive evaluation that you will have to start your therapy treatment at {{ClinicName}} includes a computerized functional assessment that will help your clinician better understand your condition and how it impacts your quality of life. This information will help your clinician develop treatment goals with you and is an important part of your treatment.

You have the option of completing the survey online prior to your first appointment, rather than in the clinic before your first treatment.

When you are ready to get started, click the 'Begin' button. Please respond to each question with the response that best describes you or your level of function at this time. If you do not complete the entire survey, you may resume it by clicking the link in this email again.

The information you share is confidential, a part of your medical record, and is subject to all protected health care information regulations

Status Local

Welcome {{PatientFirstName}}

At the beginning of your treatment at {{ClinicName}} you completed a computerized functional assessment related to your impairment. Please complete the questionnaire again to reassess how the treatment for your impairment has helped to improve your function and pain. You will also have the opportunity to respond regarding your satisfaction with several aspects of your treatment.

Please complete the survey as it relates to your impairment at this present time. You can use the information that you learned in therapy to help you answer the questions. This will help your clinician assess how your treatment has or has not helped you.

When you are ready to get started, click the 'Begin' button. Please respond to each question with the response that best describes you or your level of impairment at this time.

Status Remote

Welcome

At the beginning of your treatment at {{ClinicName}} you completed a computerized functional assessment related to your impairment. Please complete the questionnaire again to reassess how the treatment for your impairment has helped to improve your function and pain. You will also have the opportunity to respond regarding your satisfaction with several aspects of your treatment.

Please complete the survey as it relates to your impairment at this present time. You can use the information that you learned in therapy to help you answer the questions. This will help your clinician assess how your treatment has or has not helped you.

When you are ready to get started, click the 'Begin' button. Please respond to each question with the response that best describes you or your level of impairment at this time. If you do not complete the entire survey, you may resume it by clicking the link again.

IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

All eligible patients are expected to be surveyed if they have functional deficits for the applicable body part. At this time, no minimum response rate is required because FOTO does not have data to determine participation rate. FOTO does not have visibility into the true denominator of patients within the clinic because FS data collection is elective, not required and because for most providers FOTO is not yet linked to an electronic medical record system that includes all patients treated. The instructions vary somewhat on the timing and format of the survey process. The timing involves initial or Intake surveys and Status (or follow-up) surveys. The paper/pencil version available on the sponsor's website at <http://www.fotoinc.com/science-of-foto/NQF0426.html> and includes the following instructions:

FOTO Shoulder 10-Item Paper Short Form

(Date of last update: 2/08. Date of planned update: none)

We are interested in knowing whether you are having any difficulty at all with the activities listed below because of your shoulder problem for which you are currently seeking attention. Please provide an answer for each activity by selecting a response.

The local survey is when the patient is logged into the web browser or patient completes a paper and pencil survey in the clinic and the remote survey is when the patient is responding to a link that has been emailed to the patient. or to a paper and pencil survey mailed to the patient

Intake Local

Welcome {{PatientFirstName}}

The comprehensive evaluation that you will have to start your therapy treatment at {{ClinicName}} includes a computerized functional assessment that will help your clinician better understand your condition and how it impacts your quality of life. This information will help your clinician develop treatment goals with you and is an important part of your treatment.

When you are ready to get started, click the 'Begin' button. Please respond to each question with the response that best describes you or your level of function at this time.

The information you share is confidential, a part of your medical record, and is subject to all protected health care information regulations.

Intake Remote Welcome

The comprehensive evaluation that you will have to start your therapy treatment at {{ClinicName}} includes a computerized functional assessment that will help your clinician better understand your condition and how it impacts your quality of life. This information will help your clinician develop treatment goals with you and is an important part of your treatment.

You have the option of completing the survey online prior to your first appointment, rather than in the clinic before your first treatment.

When you are ready to get started, click the 'Begin' button. Please respond to each question with the response that best describes you or your level of function at this time. If you do not complete the entire survey, you may resume it by clicking the link in this email again.

The information you share is confidential, a part of your medical record, and is subject to all protected health care information regulations

Status Local Welcome {{PatientFirstName}}

At the beginning of your treatment at {{ClinicName}} you completed a computerized functional assessment related to your impairment. Please complete the questionnaire again to reassess how the treatment for your impairment has helped to improve your function and pain. You will also have the opportunity to respond regarding your satisfaction with several aspects of your treatment.

Please complete the survey as it relates to your impairment at this present time. You can use the information that you learned in therapy to help you answer the questions. This will help your clinician assess how your treatment has or has not helped you.

When you are ready to get started, click the 'Begin' button. Please respond to each question with the response that best describes you or your level of impairment at this time.

Status Remote Welcome

At the beginning of your treatment at {{ClinicName}} you completed a computerized functional assessment related to your impairment. Please complete the questionnaire again to reassess how the treatment for your impairment has helped to improve your function and pain. You will also have the opportunity to respond regarding your satisfaction with several aspects of your treatment.

Please complete the survey as it relates to your impairment at this present time. You can use the information that you learned in therapy to help you answer the questions. This will help your clinician assess how your treatment has or has not helped you.

When you are ready to get started, click the 'Begin' button. Please respond to each question with the response that best describes you or your level of impairment at this time. If you do not complete the entire survey, you may resume it by clicking the link again.

If a PRO-PM, specify calculation of response rates to be reported with performance measure results.

All eligible patients are expected to be surveyed if they have functional deficits for the applicable body part. At this time, no minimum response rate is required because FOTO does not have data to determine participation rate. FOTO does not have visibility into the true denominator of patients within the clinic because FS data collection is elective, not required and because for most providers FOTO is not yet linked to an electronic medical record system that includes all patients treated.

S.17. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Electronic Health Data, Instrument-Based Data, Paper Medical Records

S.18. Data Source or Collection Instrument (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

If instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

Focus On Therapeutic Outcomes, Inc. maintains the database. Information on the instrument, risk-adjustment procedures etc. is available at <http://www.fotoinc.com/science-of-foto/NQF0425.html>

S.19. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

Available at measure-specific web page URL identified in S.1

S.20. Level of Analysis (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Clinician : Group/Practice, Clinician : Individual, Facility

S.21. Care Setting (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Home Care, Other, Outpatient Services, Post-Acute Care

If other: Hospital Outpatient

S.22. COMPOSITE Performance Measure - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

NA

2. Validity – See attached Measure Testing Submission Form

[3a._Shoulder_Measure_Submission_Evidence__102614-635733279896216557.docx](#)

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1,2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online

submission form. *NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.*

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. Data Elements Generated as Byproduct of Care Processes.

Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score)

If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields) Update this field for maintenance of endorsement.

ALL data elements are in defined fields in a combination of electronic sources

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources. For maintenance of endorsement, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.

Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

IF instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

Patient confidentiality

FOTO considers all patient data Protected Health Information (PHI), which are protected by state law and federal law under HIPAA (the Health Insurance Portability and Accountability Act). Provider/users, utilizing a variety of devices (laptop, tablets) connect to the survey platform and reporting portals through a web browser application, using role based, password protected, user accounts. The data is collected directly into a secure web based survey platform that with the corresponding database is located in a Tier 4, highly secure, audited SSAE 16, type II compliant datacenter. Paper/pencil versions are completed by the patient in the clinic setting and responses are entered into the secure web portal by assigned clinic staff.

Electronic Data File Blinding Process:

Functional status reporting is provided to the participating clinician and clinic for patients under their care. When sharing data in aggregate reports (benchmarked reports) FOTO runs a computer program that blinds all aggregate data, so no patient, clinician or clinic can be identified in the aggregate database. For example, each patient is assigned a new number that is completely unrelated to the patient's clinical identification number. Identifiers for clinicians and clinics are replaced by new clinician and clinic identifiers.

Time estimates to complete survey.

Efficiency testing estimates for patient receiving outpatient therapy to complete the shoulder PROM were published in 2006. (Hart, Cook et al. 2006) . On average the CAT used 6 items to estimate precise measures of function, 6.0 items (SD 5 1.6, median = 5, minimum= 4,maximum = 13 items) before a stopping rule was satisfied . Based on efficiency estimates for patients to complete the Shoulder survey i.e., 1.5 minutes (SD _2 minutes) to answer

6 CAT items (SD_2) (Hart & Wang 2010), it is reasonable to expect that patients completing the Shoulder survey will also only require 1-2 minutes to complete the 7 Shoulder items. The Shoulder survey produced efficient estimates of FS that adequately covered the content range with negligible floor and minimal ceiling effects(Hart & Wang 2010)

Hart, D. L., K. F. Cook, et al. (2006). "Simulated computerized adaptive test for patients with shoulder impairments was efficient and produced valid measures of function." Journal of Clinical Epidemiology 59(3): 290-298.

Hart, D.L., Wang YC, Cook KF, Mioduski J. A Computerized Adaptive Test for Patients With Shoulder Impairments Produced Responsive Measures of Function. Phys Ther. 2010; 90:928-938

List translations to serve populations:

In the US, FOTO is available in 2 languages: English and Spanish. In Israel, FOTO is available in 5 languages: Hebrew, Russian, Arabic, English, and Spanish. Paper/pencil short form is available in English and Spanish.

3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).

The short form Shoulder CAT is publically available at <http://www.fotoinc.com/science-of-foto/NQF0426.html>. The Shoulder specific survey module is contained in a comprehensive outcome data system designed to survey patients with a wide range of orthopedic, neurological and musculoskeletal impairments. A fee of \$15 per provider per month provides access to the web based survey platform and the patient specific report. A fee of \$25 per provider per month is levied for the survey system and all patient specific and aggregated comparative reports. All measure processes and calculation and reporting is included in these fees.

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting	Payment Program Pilot programs with multiple payors are underway in LA, MN, NY, NC, Regulatory and Accreditation Programs

	<p>PQRS includes a measure of data collection for shoulder FS, Measure 221 that uses the previously endorsed NQF measure. In 2011, 181 providers submitted 1088 completed episodes, in 2012, 632 providers submitted 2,147 completed patient episodes and in 2013, 693 providers submitted 2,147 completed patient episodes and in 2014, 693 providers submitted 2,147 completed patient episodes.</p> <p>https://pqrspro.com/Functional_Deficit_Change_in_Risk-Adjusted_Functional_Status_for_Patients_with_shoulder_Impairments</p> <p>Quality Improvement (Internal to the specific organization)</p> <p>The following organizations are representative of providers who have reported using the benchmark data for quality improvement:</p> <p>Michelle Alberghini Central Vermont Medical Center Berlin, VT 802-371-5924 Michelle.Alberghini@cvmc.org Karen Granato, MPT, OCS, ATC Edward Hospital Woodridge, IL 630-646-7924 kgranato@edward.org Deanna Hayes, PT, MS St. Vincent Rehabilitation Services Indianapolis, IN 317-415-6977 drhayes@stvincent.org Seth Kaplan, PT, MHA BRPT / Lake Rehabilitation Centers Baton Rouge, LA 225-231-9700 seth@brptlake.com Jodi Kramer, PTA OSI Physical Therapy Minneapolis, MN 651-747-4312 jkrumer@therapypartners.com Daphne R. Scott, PT, DSc AthletiCo Chicago, IL 773-252-2300 DScott@athletico.com Mick Ward, PT Freeman Health System Joplin, MO 417-347-3386 dmward@freemanhealth.com Deb Whitelaw Gorski, OTR Rehab Services Director Door County Memorial Hospital 920-746-3658 Sturgeon Bay, WI deb.whitelaw-gorski@ministryhealth.org Wayne L. Winistorfer, MPA, OTR Director - Rehab Services Affinity Health System - St. Elizabeth Hospital Phone: 920 738 2750 Pager: 920 554 3813 wwinisto@affinityhealth.org Daniel Deutscher, PT, PhD Director of Research & Development Physical Therapy Service Maccabi Healthcare Service 27 Hamered st. Tel-Aviv - 68125, ISRAEL deutsch_d@mac.org.il</p>
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4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

4.1.a: Early provider service agreements mandate that FOTO maintain confidentiality of provider participation. This policy has been revised and the confidentiality of current/new providers is not required. FOTO has planned and soon will implement a smart phone application and web site widget that will provide information on patient participation level within each clinic. Ultimately, the widget will provide a 4 level percentile ranking for providers for 1) Effectiveness, 2) Efficiency, 3) Utilization (Effectiveness and Efficiency) and 4) Patient Satisfaction for those providers who have reached a specified threshold of patient participation. The threshold for participation for this program will be initially set fairly low to encourage enrollment, but we expect to increase the threshold of participation over time. Participation in this program will be voluntary, but will involve a provider release to publish rankings on a publically available NQF directed website, as well as FOTO and other interested websites.

4.1.c. FOTO has agreements to provide provider outcomes data to three proprietary pilot programs: 1. Therapy Partner Provider Network and Health Partners (TPNHP) in Minnesota; 2. Physical Therapy Provider Network of Louisiana and other providers with Blue Cross, Blue Shield of Louisiana; and a new program with 3. Therapy Partners with ValueNet of New York. TPNHP is a network of 234 providers, in 98 clinics. In 2013, TPNHP has used FOTO for 19,499 patients, 20.87% of whom had shoulder impairments. PTPN of Louisiana is a network consisting of 209 providers. In 2013 PTPN of Louisiana used FOTO for 17,727 patients, 16.6% of whom had shoulder impairments. The partnership with Therapy Partners with ValueNet is new and no data is available at this time.

4.1.d. The NQF previously approved measure 0426 is related to the PQRS approved measure #221 which shared a similar definition: the percentage of patients aged 18 or older that receive treatment for a functional deficit secondary to a diagnosis that affects the shoulder in which the change in their Risk-Adjusted Functional Status is measured. Upon approval of the current application, FOTO will apply to PQRS to seek inclusion of this version of the NQF approved measure.

4.1.f: Outcomes Manager by Focus On Therapeutic Outcomes Inc.

The purpose of Outcomes Manager is to provide clinic level risk adjusted benchmark efficiency and effectiveness data based on the aggregated data submitted by patients of participating outpatient rehabilitation providers. In 2013 FOTO Outcomes Manager provided benchmark data for 68,852 completed patient episodes from 2045 participating clinics from 49 states.

4.1.g.: The majority of providers subscribing to FOTO's Outcome Manager services and utilizing measure 0426 are utilizing the risk adjusted benchmark comparative reports in quality improvement initiatives. 531 providers (26%) of all subscribers receive comparative reports.

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

NA

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

NA

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

I. HOW PERFORMANCE RESULTS, DATA, AND ASSISTANCE WITH INTERPRETATION HAVE BEEN PROVIDED

On the patient level

- Real time reports for individual patient results including scores, risk-adjusted comparisons of scores and end-of-episode results (i.e., "predicted" results) and patient responses to individual functional questions
- Facilitates clinician communication with patient and clinician understanding of patient's perception of function/functional change, clinical decision-making, treatment and discharge planning.
- Includes comparative data about # Visits to promote efficiency of care.

On the performance level (clinician and clinic)

- Risk adjusted, benchmarked comparative reporting
- easy accessibility via web-based portal with multiple filtering options
- at a glance comparisons of statistically at-, below and above benchmark averages
- at a frequency of every 3 months, including both 3-month and rolling 12-month periods

Assistance with interpretation and ongoing education is provided via

- patient reports designed to make them easy to interpret
- new user orientations and ongoing opportunities for training sessions
- instructions and guides on both the report portal and web-based survey administration site
- easy access to provider relations representatives via training sessions (both live and recorded), email, phone, web-conferencing and chat options

For examples of performance level reporting (FOTO Report Portal) and patient level reporting, both of which include guidance for interpretation, please view www.fotoinc.com/foto-report-examples

Other Users

- Payers are potential other users. Education information that specifically targets payers is included on the FOTO website. The information includes how payers may be interested in interpreting and utilizing FOTO data to support quality and efficiency initiatives.
- One example of education targeting payers can be found at <http://www.fotoinc.com/partners-programs/payment-programs>

II. TYPES OF MEASURED ENTITIES

In the most recent 12 month period ending September 2016, risk-adjusted functional status outcomes data was captured in the FOTO system for 162,547 completed episodes for patients with shoulder impairments. The patient episodes were incurred by 5736 clinicians in 3163 rehabilitation clinics. All patients with shoulder impairments were eligible for inclusion. Patient characteristics were factored into the risk adjustment, described in section S.14.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

In addition to the description above for 4.d1.1, providers receive email alerts when reports are ready for them to access on the report portal. The report portal has education built in such as footnote explanations. Contact information for more assistance is provided in multiple locations.

Direct feedback is encouraged through providers' contact with provider relations representatives as described in 4.d1.1.

When feedback suggests need for higher-level education related to the science of PRO measurement, a Research Coordinator and/or Research Advisory Board members are consulted to help with education and receive/consider feedback. Needs for science-related education may also be addressed by directing the individual to the Science of FOTO website at:

<http://www.fotoinc.com/science-of-foto>

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

Described below in 4d2.2

4a2.2.2. Summarize the feedback obtained from those being measured.

Feedback from clinicians and other provider personnel indicates

1. use of PRO data to promote clinician understanding of the patient's perspective, enhance goal-setting and other communication between clinician and patient, utility in clinical decision-making and treatment/discharge planning with the patient
2. a consistent desire for ongoing risk-adjustment model development with consideration of more variables/constructs, special attention to post-surgical types and weighting of individual comorbidities.

4a2.2.3. Summarize the feedback obtained from other users

Feedback from 2 examples in which FOTO data was used for Payer purposes:

Baton Rouge Physical Therapy-Lake (LA) used their FOTO data to respond to the needs of Blue Cross Blue Shield of Louisiana for results of quality, satisfaction and completion rates (i.e., low missing data levels).

Pinnacle Rehabilitation Network (M) used their FOTO PRO and visits data to convince the the administrator of a large government contract to trial their services in an attempt to improve quality and reduce costs over the previous provider.

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

Clinician feedback was a primary driver in our decisions to collect and analyze data related to the new risk adjustment model changes.

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

As shown in Table 1b2b in the Importance section, in 2011 there were 252 clinics from 32 states and in 2013 there were 531 clinics from 43 states that were included in FOTO's estimation of the shoulder quality measure. Thus, comparisons between quality measures in 2013 and 2011 cannot be made. Additional research is needed to follow a subset of clinics that participate over time to examine how the participation in this quality measurement program impacts clinic performance.

4b2. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

No

4b2.2. Please explain any unexpected benefits from implementation of this measure.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

Yes

5.1a. List of related or competing measures (selected from NQF-endorsed measures)

5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications harmonized to the extent possible?

No

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

NA

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

NA

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

Attachment **Attachment:** [Shoulder__-0426-_Table_Attachments_102014-635733279901832665.pdf](#)

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): Focus on Therapeutic Outcomes, Inc

Co.2 Point of Contact: Deanna, Hayes, deanna.hayes@fotoinc.com, 800-482-3686-

Co.3 Measure Developer if different from Measure Steward: Focus on Therapeutic Outcomes, Inc

Co.4 Point of Contact: Ben, Johnston, ben@fotoinc.com, 800-482-3686-225

Additional Information

Ad.1 Workgroup/Expert Panel involved in measure development

Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

Dennis Hart, PhD was the original developer of this measure in 2008. Dr. Hart died in 2012. The expert panel assembled for continued development, analysis, maintenance and re-submission, include: Karon F. Cook, PhD, *Daniel Deutscher, PT, PhD, Julie Fritz, PT, PhD, ATC, *Linda Resnik, PT, PhD, Ying-Chih "Inga" Wang, OTR/L, PhD. *Mark Werneke, PT, DPT, MS, SCS, OCS, CSCS. Those names preceded by an asterisk are specifically involved in the preparation and submission for endorsement renewal.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2008

Ad.3 Month and Year of most recent revision: 07, 2012

Ad.4 What is your frequency for review/update of this measure? As required

Ad.5 When is the next scheduled review/update for this measure? 11, 2014

Ad.6 Copyright statement: See NQF Document

Ad.7 Disclaimers: NA

Ad.8 Additional Information/Comments: NA