



## 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 #: 0496**

**Corresponding Measures:**

**De.2. Measure Title:** Median Time from ED Arrival to ED Departure for Discharged ED Patients

**Co.1.1. Measure Steward:** Centers for Medicare and Medicaid Services

**De.3. Brief Description of Measure:** NQF #0496 calculates the median time from emergency department arrival to time of departure from the emergency room for patients discharged from the emergency department (ED). The measure is calculated using chart-abstracted data, on a rolling quarterly basis, and is publically reported in aggregate for one calendar year. The measure has been publically reported since 2013 as part of the ED Throughput measure set of the CMS' Hospital Outpatient Quality Reporting (HOQR) Program.

**1b.1. Developer Rationale:** Empirical evidence demonstrates that ED throughput is an indicator of hospital quality of care, and shows that shorter lengths of stay in the ED lead to improved clinical outcomes. Significant ED overcrowding has numerous downstream effects, including prolonged patient waiting times, increased suffering for those who wait, rushed and unpleasant treatment environments, and potentially poor patient outcomes (Gardner, 2018). Quality improvement efforts aimed at reducing ED overcrowding and length of stay have been associated with an increase in ED patient volume, decrease in number of patients who leave without being seen, reduction in costs, and increase in patient satisfaction (Bucci, 2016; Chang, 2017; Zocchi, 2015). An analysis of data from 2,619 hospitals support that reducing the time patients remain in the ED is associated with increased patient satisfaction and a decreased chance that patients will leave before being seen (Chang, 2017). Recent guidelines and peer-reviewed studies also demonstrate the need for dedicated emergency mental health services, providing evidence that the clinical needs for these patients substantively differ from the non-psychiatric population (Nazarian, 2017; Lester, 2018).

**REFERENCES:**

- 1) Bucci, S., A. G. de Belvis, S. Marventano, A. C. De Leva, M. Tanzariello, M. L. Specchia, W. Ricciardi and F. Franceschi. (2016). Emergency department crowding and hospital bed shortage: Is Lean a smart answer? A systematic review. *Eur Rev Med Pharmacol Sci*, 20(20), 4209-4219.
- 2) Chang, A. M., A. Lin, R. Fu, K. J. McConnell and B. Sun. (2017). Associations of Emergency Department Length of Stay With Publicly Reported Quality-of-care Measures. *Acad Emerg Med*, 24(2), 246-250.
- 3) Gardner, R. M., N. A. Friedman, M. Carlson, T. S. Bradham and T. W. Barrett. (2017). Impact of revised triage to improve throughput in an ED with limited traditional fast track population. *Am J Emerg Med.*, 36(1), 124-127.
- 4) Lester, N. A., L. R. Thompson, K. Herget, J. A. Stephens, J. V. Campo, E. J. Adkins, T. E. Terndrup and S. Moffatt-Bruce. (2017). CALM Interventions: Behavioral Health Crisis Assessment, Linkage, and Management Improve Patient Care. *Am J Med Qual.*, 33(1), 65-71.
- 5) Nazarian DJ, Broder JS, Thiessen ME, Wilson MP, Zun LS, Brown MD, American College of Emergency Physicians. Clinical policy: critical issues in the diagnosis and management of the adult psychiatric patients in the emergency department. *Ann Emerg Med*. 2017 Apr; 69(4):480-98. Guideline available at: [http://www.annemergmed.com/article/S0196-0644\(17\)30070-7/pdf](http://www.annemergmed.com/article/S0196-0644(17)30070-7/pdf).
- 6) Zocchi, M. S., M. S. McClelland, and J. M. Pines. Increasing Throughput: Results From A 42-Hospital Collaborative To Improve Emergency Department Flow. *The Joint Commission Journal on Quality and Patient Safety*, 2015, 41(12):532-542.

**S.4. Numerator Statement:** Continuous Variable Statement: Time (in minutes) from ED arrival to ED departure for patients discharged from the emergency department.

**S.6. Denominator Statement:** This measure is reported as a continuous variable statement: Time (in minutes) from ED arrival to ED departure for patients discharged from the emergency department.

**S.8. Denominator Exclusions:** Patients who expired in the emergency department, left against medical advice (AMA), or whose discharge was not documented or unable to be determined (UTD) are excluded from the target population.

**De.1. Measure Type:** [Process](#)

**S.17. Data Source:** [Claims, Electronic Health Data, Electronic Health Records, Paper Medical Records](#)

**S.20. Level of Analysis:** [Facility](#)

**IF Endorsement Maintenance – Original Endorsement Date:** [Oct 24, 2008](#) **Most Recent Endorsement Date:** [Sep 09, 2014](#)

**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?** [Not applicable; this measure is not a paired or grouped measure.](#)

## 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**

[NQF\\_0496\\_Measure\\_Evidence\\_Form.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.

[Yes](#)

### 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.*

[Empirical evidence demonstrates that ED throughput is an indicator of hospital quality of care, and shows that shorter lengths of stay in the ED lead to improved clinical outcomes. Significant ED overcrowding has numerous downstream effects, including prolonged patient waiting times, increased suffering for those who wait, rushed and unpleasant treatment environments, and potentially poor patient outcomes \(Gardner, 2018\). Quality improvement efforts aimed at reducing ED overcrowding and length of stay have been associated with an increase in ED patient volume, decrease in number of patients who leave without being seen, reduction in costs, and increase in patient satisfaction \(Bucci, 2016; Chang, 2017; Zocchi, 2015\). An analysis of data from 2,619 hospitals support that reducing the time patients remain in the ED is associated with increased patient satisfaction and a decreased chance that patients will leave before being seen \(Chang, 2017\). Recent guidelines and peer-reviewed studies also demonstrate the need for dedicated emergency mental health services, providing evidence that the clinical needs for these patients substantively differ from the non-psychiatric population \(Nazarian, 2017; Lester, 2018\).](#)

### REFERENCES:

- 1) Bucci, S., A. G. de Belvis, S. Marventano, A. C. De Leva, M. Tanzariello, M. L. Specchia, W. Ricciardi and F. Franceschi. (2016). Emergency department crowding and hospital bed shortage: Is Lean a smart answer? A systematic review. *Eur Rev Med Pharmacol Sci*, 20(20), 4209-4219.
- 2) Chang, A. M., A. Lin, R. Fu, K. J. McConnell and B. Sun. (2017). Associations of Emergency Department Length of Stay With Publicly Reported Quality-of-care Measures. *Acad Emerg Med*, 24(2), 246-250.
- 3) Gardner, R. M., N. A. Friedman, M. Carlson, T. S. Bradham and T. W. Barrett. (2017). Impact of revised triage to improve throughput in an ED with limited traditional fast track population. *Am J Emerg Med.*, 36(1), 124-127.
- 4) Lester, N. A., L. R. Thompson, K. Herget, J. A. Stephens, J. V. Campo, E. J. Adkins, T. E. Terndrup and S. Moffatt-Bruce. (2017). CALM

Interventions: Behavioral Health Crisis Assessment, Linkage, and Management Improve Patient Care. Am J Med Qual., 33(1), 65-71.  
 5) Nazarian DJ, Broder JS, Thiessen ME, Wilson MP, Zun LS, Brown MD, American College of Emergency Physicians. Clinical policy: critical issues in the diagnosis and management of the adult psychiatric patients in the emergency department. Ann Emerg Med. 2017 Apr; 69(4):480-98. Guideline available at: [http://www.annemergmed.com/article/S0196-0644\(17\)30070-7/pdf](http://www.annemergmed.com/article/S0196-0644(17)30070-7/pdf).  
 6) Zocchi, M. S., M. S. McClelland, and J. M. Pines. Increasing Throughput: Results From A 42-Hospital Collaborative To Improve Emergency Department Flow. The Joint Commission Journal on Quality and Patient Safety, 2015, 41(12):532–542.

**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.

Analysis of facility-level data from the Hospital Compare downloadable files indicates that there is variation in the median time from ED arrival to time of departure from the emergency room. During the January 2014 to December 2014 data collection periods, median facility-level throughput times ranged from 46 minutes to 424 minutes, with a median of 140 minutes. During the January 2016 to December 2016 data collection periods, median facility-level throughput times ranged from 45 minutes to 440 minutes, with a median of 136 minutes. When aggregating findings from both data collection periods, the median value of median time from emergency department arrival to time of departure from the emergency room decreased 2.9% (-4 minutes).

The data presented below represent performance scores and descriptive statistics for longitudinal facility performance for the facilities whose denominator counts met minimum case count requirements during the January 2014 to December 2016 data collection periods.

	Data Collection Period			Change in Minutes	
	January 2014–December 2014			January 2015–December 2015	January 2016–December 2016
Facilities	3,334	3,584	3,737	-	
Minimum Value	46	49	45	-1	
1st Percentile	74	70	68	-6	
5th Percentile	88	84	84	-4	
10th Percentile	98	94	94	-4	
25th Percentile	116	114	112	-4	
Median	140	138	136	-4	
75th Percentile	167	166	165	-2	
90th Percentile	195	196	196	+1	
95th Percentile	218	218	217	-1	
99th Percentile	272	264	266	-6	
Maximum Value	424	428	440	+16	
Number of ED cases (Denominator)	1,687,812	1,870,875	2,134,653	-	

During the January 2014 to December 2016 data collection periods, there is documentation of substantial variation in facility performance. The interquartile range has been consistently wide, ranging from 112 minutes to 165 minutes. Additionally, the maximum time for ED discharge increased between 2014 and 2016. While median performance is improving, there is an ongoing opportunity for improvement in performance at the facility level.

**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.**

Data have been included in Section 1b.2; these data represent national performance over time, from the January 2014 to December 2016 data collection periods.

**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.

The relationship of patient and facility characteristics on ED throughput time was evaluated using an Ordinary Least Squares (OLS) regression (with standard errors clustered at the facility level), using data submitted to the Clinical Data Warehouse (CDW) between October 01, 2015 and August 30, 2016. Appendix A describes the methods and regression results for the Overall Rate and the three strata. Results from the Reporting Rate regression are summarized below. It is important to note that, while many results are significant, this may be driven by sample size at the facility level; the magnitude of these differences may not be clinically meaningful.

Primary results from the regression were related to patient demographics. ED throughput time was significantly longer for patients in the 18–30 ( $\beta = 31.4$  minutes,  $p < 0.001$ ), 30–40 ( $\beta = 41.1$  minutes,  $p < 0.001$ ), 40–50 ( $\beta = 53.2$  minutes,  $p < 0.001$ ), 60–70 ( $\beta = 70.1$  minutes,  $p < 0.001$ ), 70–80 ( $\beta = 77.3$  minutes,  $p < 0.001$ ), 80–90 ( $\beta = 84.9$  minutes,  $p < 0.001$ ), and over 90 ( $\beta = 91.6$  minutes,  $p < 0.001$ ) age groups, as compared to those patients less than 18 years old. There was a significantly longer ED throughput times for female patients, as compared to male patients ( $\beta = 6.1$  minutes,  $p < 0.001$ ). When compared to white patients, there was a significantly longer ED throughput time for Asian patients ( $\beta = 10.3$  minutes,  $p < 0.001$ ); Hispanic patients also experienced longer ED throughput times, as compared to the non-Hispanic peers ( $\beta = 12.0$  minutes,  $p < 0.001$ ).

ED throughput times also varied by the characteristics of the facility from which the patient was discharged. When compared to patients discharged from facilities with fewer than 50 beds (a proxy for facility size), there was a significantly longer ED throughput time for patients discharged from facilities with 51–100 beds ( $\beta = 10.7$  minutes,  $p = 0.004$ ), 101–250 beds ( $\beta = 35.8$  minutes,  $p < 0.001$ ), 251–500 beds ( $\beta = 53.8$  minutes,  $p < 0.001$ ), and more than 500 beds ( $\beta = 64.7$  minutes,  $p < 0.001$ ). Urbanicity also impacted ED throughput times, with a significantly higher time for patients discharged from an urban hospital, as compared to those discharged from a rural hospital ( $\beta = 6.5$  minutes,  $p < 0.001$ ). Finally, when compared to patients discharged from a non-teaching facility, there was a significantly longer ED throughput time for patients discharged from a major teaching facility ( $\beta = 54.7$  minutes,  $p < 0.001$ ).

**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**

The Centers for Medicare and Medicaid Services (CMS) released findings showing variation in hospital performance for several ED throughput metrics, including wait time (Sun et al. 2016). The findings were based on a risk-adjusted model that included variables related to hospitals' structural, financial, and geographic characteristics. Risk adjustment is the statistical process used to adjust for differences in population or setting characteristics before comparing outcomes. The statistical model used by Sun et al. (2016) included several hospital characteristics; their doing so acknowledged and controlled for the impact of hospital-level characteristics on patient outcomes. After risk adjusting the measures based on hospital characteristics, variations in ED throughput existed; these findings support the need for ongoing reporting of the ED throughput measures, including NQF #0496.

#### REFERENCES:

1) Sun, B. C., A. Laurie, L. Prewitt, R. Fu, A. M. Chang, J. Augustine, C. t. Reese and K. J. McConnell (2016). "Risk-Adjusted Variation of Publicly Reported Emergency Department Timeliness Measures." *Annals of Emergency Medicine*, 67(4), 509-516 e7.

## 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):

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

Care Coordination

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

Children, Elderly, Populations at Risk, Populations at Risk : Dual eligible beneficiaries, Populations at Risk : Individuals with multiple chronic conditions, Populations at Risk : Veterans, Women

**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.)

<http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FSpecsManualTemplate&cid=1228776146046>

**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: [NQF\\_0496\\_Measure\\_Code\\_Set.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.

[No, this is not an instrument-based measure](#) Attachment:

**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.

[Not an instrument-based measure](#)

**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.

[NQF #0496 was first endorsed by NQF in October 2008. Since 2008, its measure specifications have been updated to address stakeholder feedback and to harmonize with measures in the Hospital Inpatient Quality Reporting \(HIQR\) program. Some data elements have been updated to provide clarification in abstraction and updates have been made to selected references since the measure's most recent NQF review, which occurred in 2014.](#)

[In 2015, as part of the annual measure maintenance and review process, all ICD-9-CM diagnosis codes were updated to align with corresponding ICD-10-CM diagnosis codes. For all subsequent years, the list of ICD-10-CM diagnosis codes used to identify psychiatric/mental health rate cases have been updated annually to align with CMS ICD-10 diagnosis codes and descriptions.](#)

[In 2016, the Arrival Time data element was modified to specify that the ED record may include the ED face sheet, ED consent or authorization for treatment forms, ED or outpatient registration or sign-in forms, ED ECG reports, ED telemetry or rhythm strips, ED laboratory reports, and ED X-ray reports. In 2017, guidance was added to the ED Departure Time data element to clarify the rationale for abstracting the observation order. Guidance was also added to the Discharge Code data element to clarify when to abstract value a value of 7—Left Against Medical Advice.](#)

**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 \(S.14\).](#)

[Continuous Variable Statement: Time \(in minutes\) from ED arrival to ED departure for patients discharged from the emergency department.](#)

**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).*

The measure population is identified using six evaluation and management (E/M) codes for ED encounters. ICD-10-CM diagnosis codes and discharge codes are used to identify cases for the Psychiatric/Mental Health Rate and Transfer Rate strata. These detailed lists can be found in the Excel workbook provided for Section S.2b.

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

This measure is reported as a continuous variable statement: Time (in minutes) from ED arrival to ED departure for patients discharged from the emergency department.

**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).*

NQF #0496 is a continuous measure; therefore, the numerator and denominator details contained in Section S.6 and Section S.9 are the same.

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

Patients who expired in the emergency department, left against medical advice (AMA), or whose discharge was not documented or unable to be determined (UTD) are excluded from the target population.

**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.)

The Discharge Code data element is used to identify measure exclusions [Discharge Code equals: 6—Expired, 7—Left Against Medical Advice/AMA, or 8—Not Documented or Unable to Determine (UTD)].

**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.)

NQF #0496 is specified using an overall rate, with three sub-populations (or strata), described in detail in Section 1.2 of the Measure Testing Form, and summarized below.

- Overall rate: The overall rate includes all eligible patients.
- Reporting rate: The reporting rate includes cases from the overall rate that are not included in the psychiatric/mental health rate or transfer patient rate.
- Psychiatric/mental health rate: The psychiatric/mental health rate includes cases from the overall rate for which the principal diagnosis is captured in the psychiatric/mental health code set, provided in Attachment: NQF\_0496\_Measure Code Set.xlsx.
- Transfer patient rate: The transfer patient rate includes cases from the overall rate for which the discharge code indicates that the patient was transferred to a facility that is an acute care facility for inpatient care of the general population or a facility operated by the Department of Defense or the Department of Veteran's Affairs.

This measure is a process measure for which we provide no risk adjustment or risk stratification. We determined risk adjustment and risk stratification were not appropriate based on the measure evidence base and the measure construct. As a process-of-care measure, timely discharge from the ED should not be influenced by sociodemographic factors; doing so would potentially mask important inequities in care delivery. Variation across patient populations is reflective of differences in the quality of care provided to the disparate patient population included in the effective sample.

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

No risk adjustment or risk stratification



If other:

**S.12. Type of score:**

Continuous variable

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 = Lower 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.)

This measure calculates the time (in minutes) from ED arrival to ED departure for discharged ED patients. The patient population is determined from two algorithms: the Hospital Outpatient ED Throughput Population algorithm as well as the NQF #0496 measure-specific algorithm:

1. Start processing. Run all cases that are included in the ED Throughput Hospital Outpatient Population Algorithm and pass the edits defined in the Data Processing Flow through this measure. Proceed to ICD-10-CM Principal Diagnosis Code.
2. Check Discharge Code.
  - a. If Discharge Code is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
  - b. If Discharge Code equals 6, 7, or 8 the case will proceed to a Measure Category Assignment of B. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
  - c. If Discharge Code equals 1, 2, 3, 4a, 4b, 4c, 4d, or 5, the case will proceed to Arrival Time.
3. Check Arrival Time.
  - a. If Arrival Time equals UTD, the case will proceed to a Measure Category Assignment of Y. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
  - b. If Arrival Time equals non-UTD value, the case will proceed to ED Departure Date.
4. Check ED Departure Date.
  - a. If ED Departure Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
  - b. If ED Departure Date equals UTD, the case will proceed to a Measure Category Assignment of Y. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
  - c. If ED Departure Date equals non-UTD, the case will proceed to ED Departure Time.
5. Check ED Departure Time.
  - a. If ED Departure Time is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
  - b. If ED Departure Time equals UTD, the case will proceed to a Measure Category Assignment of Y. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
  - c. If ED Departure Time equals non-UTD, the case will proceed to Measurement Value.
6. Calculate the Measurement Value. Time in minutes is equal to the ED Departure Date and ED Departure Time (in minutes) minus the Outpatient Encounter Date and Arrival Time (in minutes).
7. Check Measurement Value.
  - a. If Measurement Value is less than 0 minutes, the case will proceed to a Measure Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
  - b. If Measurement Value is greater than or equal to 0 minutes, the case will proceed to a Measure Category Assignment of D1.
8. Initialize the Measure Category Assignment for all cases in D1.
9. Proceed to ICD-10-CM Principal Diagnosis Code.
10. Check ICD-10-CM Principal Diagnosis Code.
  - a. If ICD-10-CM Principal Diagnosis Code is in Appendix A, OP Table 7.01 of the HOQR Specifications Manual (refer to Attachment: NQF\_0496\_Measure Code Set.xlsx for corresponding ICD-10 codes), the case will proceed to a Measure Category Assignment of D2. Proceed to Discharge Code.
  - b. If ICD-10-CM Principal Diagnosis Code is not in Appendix A, OP Table 7.01, the case will proceed to Discharge Code.
11. Check Discharge Code.
  - a. If Discharge Code equals 4a or 4d, the case will proceed to a Measure Category Assignment of D3. Proceed to ICD-10-CM

Principal Diagnosis Code.

b. If Discharge Code equals 1, 2, 3, 4b, 4c, or 5, the case will proceed to ICD-10-CM Principal Diagnosis Code.

12. Check ICD-10-CM Principal Diagnosis Code.

a. If ICD-10-CM Principal Diagnosis Code is in Appendix A, OP Table 7.01, the case will proceed to a Measure Category Assignment of B. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

b. If ICD-10-CM Principal Diagnosis Code is not in Appendix A, OP Table 7.01, the case will proceed to Discharge Code.

13. Check Discharge Code.

a. If Discharge Code equals 4a or 4d the case will proceed to a Measure Category Assignment of B. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

If Discharge Code equals 1, 2, 3, 4b, 4c, or 5, the case will proceed to a Measure Category Assignment of D. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

**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.

Sampling is a process of selecting a representative subset of a population in order to estimate the hospital's overall performance without collecting data for its entire population. Using a statistically valid sample, a hospital can measure its performance in an effective and efficient manner. Sampling is a particularly useful technique for performance measures that require primary data collection from a source such as the medical record. In order to avoid having outliers exert a disproportionate effect on the estimate of overall performance, sampling should not be used unless the hospital has a sufficiently large number of cases in the universe of interest. For the purpose of sampling outpatient department quality measures, the terms "sample," "effective sample," and "case" are defined below:

- The "sample" is the fraction of the population that is selected for further study.
- "Effective sample" refers to the part of the sample remaining after application of exclusion and exception criteria. It is defined as the sample for an outpatient measure set minus all the exclusions and contraindications for the outpatient measure set in the sample. The effective sample serves as the denominator population of an outpatient measure.
- A "case" refers to a single record (or an encounter) within the population. For example, during the first quarter a hospital may have 100 patients who had a principal diagnosis associated with the ED Throughput measures. The hospital's outpatient population would include 100 cases or 100 outpatient records for these measures during the first quarter.

To obtain statistically valid sample data, the sample size should be carefully determined, and the sample cases should be randomly selected in such a way that the individual cases in the population have an equal chance of being selected. Only when the sample data truly represent the whole population can the sample-based performance outpatient measure data be meaningful and useful. Each hospital is ultimately responsible for adhering to the sampling requirements outlined in Section 4 of the Hospital OQR Specifications Manual, to which we have linked in Section S.1.

As a general rule/policy of CMS, providers are encouraged to exceed minimum sampling requirements and submit as many cases as possible up to the entire population of cases if reasonably feasible. For example, if the raw data can be easily extracted from an existing electronic database or the abstraction burden is manageable, providers should consider submitting the entire population of cases that meet the initial selection criteria. Otherwise, a statistically valid sample can be selected for reporting.

**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.

This measure does not use survey or patient-reported data.

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

*If other, please describe in S.18.*

Claims, Electronic Health Data, Electronic Health Records, 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.

An electronic data collection tool, CMS Abstraction & Reporting Tool (CART), is available for third-party vendors or facilities to download for free. Paper tools for manual abstraction, which are posted on [www.qualitynet.org](http://www.qualitynet.org), are also available for the CART



tool.

**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)

Facility

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

Emergency Department and Services

If other:

**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.)

Not applicable; this is not a composite measure.

## 2. Validity – See attached Measure Testing Submission Form

[NQF\\_0496\\_Measure\\_Testing\\_Form.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.

Yes

### 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.

Yes

### 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.

No - This measure is not risk-adjusted

## 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), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

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).

Not applicable; the data elements are in defined fields in a combination of electronic sources. The potential for electronic specification will require special attention to the Arrival Time, ED Departure Date, and ED Departure Time data elements.

Abstractors rely on documentation in the ED record to determine the time the patient physically arrived in and left the ED.

**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.

Nine expert work group (EWG) members, with backgrounds in healthcare administration, management, and clinical expertise in emergency medicine, pediatric emergency medicine, and clinical pharmacy, provided feedback on the feasibility of NQF #0496 through an online survey. Most respondents agreed or strongly agreed that the practical aspects of reporting NQF #0496 chart-abstracted measure do not place undue burden on hospitals for its data. However, one respondent commented that the degree of burden may vary depending on the programming structure of different electronic health records (EHRs). Most respondents also indicated that the data elements are currently available in an electronic health record EHR structured field. Overall, the respondents generally support the feasibility of NQF #0496.

**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).**

No fees, licensure, or other requirements are necessary to use this measure; however, CPT codes, descriptions, and other data are copyright 2013 American Medical Association. All rights reserved. CPT is a registered trademark of the American Medical Association. Applicable FARS\DFARS Restrictions Apply to Government Use. Fee schedules, relative value units, conversion factors, and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

## 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)

##### 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

##### Public Reporting

Name of program and sponsor: CMS HOQR Program

Purpose: The HOQR Program is a pay for quality data reporting program implemented by CMS for outpatient hospital services.

Hospital quality of care information gathered through the HOQR Program is publicly available on the Hospital Compare website. In addition to providing hospitals with a financial incentive to report their quality of care measure data, the HOQR Program provides CMS with data to help Medicare beneficiaries make more informed decisions about their health care.

Geographic area and number and percentage of accountable entities and patients included: The publicly reported values (on Hospital Compare) are calculated for all facilities in the United States that meet minimum case count requirements. The number of facilities that met minimum case count criteria during the January 2014 to December 2016 data collection periods ranged from 3,334 to 3,737 facilities annually. The number of facilities meeting minimum case count criteria by year is presented in Section 1b.2. Facilities eligible to report this measure are subject to the Outpatient Prospective Payment System (OPPS) guidelines.

Level of measurement and setting: Facility; Emergency Department and Services

##### Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

Name of program and sponsor: CMS HOQR Program

Purpose: The HOQR Program is a pay-for-quality data reporting program implemented by CMS for outpatient hospital services. In addition to providing hospitals with a financial incentive to report their quality of care measure data, the data is publicly reported on the Hospital Compare Website. The data reported on Hospital Compare not only shows the hospital's score on the measure, but also provides state and national averages for the measure. This enables consumers to compare the hospital's performance to other facilities and determine relative performance.

Geographic area and number and percentage of accountable entities and patients included: The publicly reported values (on Hospital Compare) are calculated for all facilities in the United States that meet minimum case count requirements. The number of facilities that met minimum case count criteria during the January 2014 to December 2016 data collection periods ranged from 3,334 to 3,737 facilities, annually. The number of facilities meeting minimum case count criteria by year is presented in Section 1b.2. Facilities eligible to report this measure are subject to the OPPS guidelines.

Level of measurement and setting: Facility; Emergency Department and Services

##### 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?)

The reporting rate, which excludes psychiatric/mental health and transfer patients, is publicly reported on Hospital Compare. Although the Psychiatric/Mental Health Rate will not be publicly reported on Hospital Compare, it will be publically available at <https://data.medicare.gov/>.

##### 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.)*

*This measure is publicly reported.*

**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.**

*Not applicable*

**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.**

*Not applicable*

**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.**

*Not applicable*

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

*Not applicable*

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

*Not applicable*

**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.**

*Not applicable*

#### **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.**

*Summary statistics of performance scores during the January 2014 to December 2016 data collection periods are provided in Section 1b.2. The median value time to discharge has declined 2.9% (4 minutes) between the January 2014 and December 2016 data collection periods. There were 3,334 facilities that met minimum case count during the January 2014 to December 2014 data collection periods; 3,737 facilities met the minimum case count for the January 2016 to December 2016 data collection periods. During the January 2014 to December 2014 data collection periods, there were 1,687,812 sampled cases; of those patients, the median time to discharge was 140 minutes. During the January 2016 to December 2016 data collection periods, there were 2,134,653 sampled cases; of those patients, the median time to discharge was 136 minutes. These cases reflect only a subset of the patients eligible for the measure. Depending on the facility's total case count, the facility may report all cases or a sample of cases.*

#### **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.**

*Measure testing did not identify any unintended consequences. Similarly, no evidence of unintended consequences to individuals or*

populations has been reported by external stakeholders since its implementation. The potential for unintended consequences will continue to be monitored through an annual review of the literature as well as an ongoing review of stakeholder comments and inquiries.

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

No unexpected benefits have been identified after implementing the 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)

0495 : Median Time from ED Arrival to ED Departure for Admitted ED Patients

0497 : Admit Decision Time to ED Departure Time for Admitted Patients

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

Left Without Being Seen is a CMS measure that calculates the percent of patients who leave the ED without being evaluated by a physician/advanced practice nurse/physician's assistant (physician/APN/PA).

### 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?

Yes

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

The measure specifications are harmonized to the extent possible; however, the differences are justified. NQF #0496 is reported through the HOQR Program as a chart-abstracted measure, while NQF #0495 (Median Time from ED Arrival to ED Departure for Admitted Patients) is reported through the Hospital Inpatient Quality Reporting (HIQR) Program as an electronically specified clinical quality measure (eCQM). Although the initial patient populations are identified using different codes, the difference is a function of data availability rather than clinical or methodologic differences in the populations measured by NQF #0496 and NQF #0495. NQF #0497 (Median Admit Decision Time to ED Departure Time for Admitted Patients) is also an eCQM, reported through the HIQR Program. Its measure focus is the duration between the decision to admit a patient and the time the patient is discharged from the ED, which is a subset of a patient's total ED length of stay, as measured by NQF #0496. While the target populations for NQF #0496 and Left Without Being Seen are the same, the focus of the measures is different. NQF #0496 focuses on the median time from ED arrival to ED departure for discharged patients, while Left Without Being Seen focuses on the percentage of patients that leave the ED without being seen by a physician/advanced practice nurse/physician's assistant (physician/ APN/ PA).

### 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.)**

No competing measure that address both the same measure focus and target population as NQF #0496 was identified.

## 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: NQF\_0496\_Appendix.docx

## Contact Information

**Co.1 Measure Steward (Intellectual Property Owner):** Centers for Medicare and Medicaid Services

**Co.2 Point of Contact:** Joseph, Clift, joseph.clift@cms.hhs.gov, 410-786-4165-

**Co.3 Measure Developer if different from Measure Steward:** The Lewin Group

**Co.4 Point of Contact:** Colleen, McKiernan, Colleen.McKiernan@lewin.com, 703-269-5595-

## 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.**

The contractor has convened an EWG, which evaluates and provides feedback on measure-development and maintenance efforts for throughput measures. Specifically, the EWG provides direction and feedback through all phases of project activities, including expansion of the measures to additional CMS quality reporting programs, updates to the current specifications of these four measures, review of quantitative testing results, feedback on qualitative testing questions (i.e., results of EWG member questionnaires), and support for endorsement of the measures by NQF.

The following is a list of the contractor's EWG members:

- Anthony Arguija, MD, Long Beach Memorial Medical Center, Department of Emergency Medicine
- Bradley Weiner, MD, American Orthopaedic Association (AOA)
- Cathy Olson, MSN, RN, Emergency Nurses Association (ENA), Institute for Quality, Safety, and Injury Prevention, Director
- Daniel Waxman, MD, RAND Corporation
- David Marcozzi, MD, MHS-CL, FACEP, University of Maryland School of Medicine
- David Ring, MD, PhD, American Academy of Orthopaedic Surgeons (AAOS)
- Jeffrey A. Seiden, MD, Children's Hospital of Philadelphia (CHOP)
- John Couk, MD, Louisiana State University Health Care Services Division (HCSD)
- Mary Ann Kliethermes, Pharm D, American Pharmacists Association (APhA)
- Matt Zavadsky, MS-HPA, National Association of Emergency Medical Technicians (NAEMT)
- Richard Newell, MD MPH FACEP, CEP America, Director of Quality and Performance
- Stephen Traub, MD, TEP 2010; Mayo Clinic, Department of Emergency Medicine, Chair
- Bradford Tinloy MD, CEP America, Medical Director of CMS Programs

### 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:** 09, 2017

**Ad.4 What is your frequency for review/update of this measure?** Annually

**Ad.5 When is the next scheduled review/update for this measure?** 09, 2018

**Ad.6 Copyright statement:** This measure does not have a copyright.

**Ad.7 Disclaimers:** CPT codes, descriptions, and other data only are copyright 2013 American Medical Association. All rights reserved. CPT is a registered trademark of the American Medical Association. Applicable FARS\DFARS Restrictions Apply to Government Use. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT,



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**Ad.8 Additional Information/Comments:**