



## 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 #:** 2983

**Corresponding Measures:**

**De.2. Measure Title:** Potassium Sample Hemolysis in the Emergency Department

**Co.1.1. Measure Steward:** Cleveland Clinic

**De.3. Brief Description of Measure:** Percentage of laboratory potassium samples drawn in the emergency department (ED) with hemolysis.

**1b.1. Developer Rationale:** Hemolysis is the rupture red blood cells with a release of hemoglobin and other intracellular content into plasma interfering with multiple laboratory tests including potassium. Hemolyzed samples account for the majority of rejected samples. The American Society of Clinical Pathology consider a hemolysis rate below 2% best practice (Lowe G, Stike R, Pollack M, Bosley J, O'Brien P, Hake A, et al. Nursing blood specimen collection techniques and hemolysis rates in an emergency department: analysis of venipuncture versus intravenous catheter collection techniques. J Emerg Nurs 2008;34:26-32.) The Emergency Department accounts for a large proportion of a hospital's labs rejected specimens for hemolysis.

Heyer, N. J., Derzon, J. H., Wings, L., Shaw, C., Mass, D., Snyder, S. R., et al. (2012). Effectiveness of practices to reduce blood sample hemolysis in EDs: A laboratory medicine best practices systematic review and meta-analysis. Clinical Biochemistry, 45(13–14), 1012-1032.

**S.4. Numerator Statement:** ED Potassium Samples with Hemolysis

**S.6. Denominator Statement:** all ED patients getting a lab potassium sample

**S.8. Denominator Exclusions:** None

**De.1. Measure Type:** Outcome: Intermediate Clinical Outcome

**S.17. Data Source:** Electronic Health Data

**S.20. Level of Analysis:** Facility

**IF Endorsement Maintenance – Original Endorsement Date:** Jan 26, 2017 **Most Recent Endorsement Date:**

**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

### 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**

Graph\_depicting\_ED\_hemolysis\_over\_time\_during\_performance\_improvement\_project.docx,Hemolysis\_NQF\_Evidence\_Attachment\_5\_06\_fin.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.*

Hemolysis is the rupture red blood cells with a release of hemoglobin and other intracellular content into plasma interfering with multiple laboratory tests including potassium. Hemolyzed samples account for the majority of rejected samples. The American Society of Clinical Pathology consider a hemolysis rate below 2% best practice (Lowe G, Stike R, Pollack M, Bosley J, O'Brien P, Hake A, et al. Nursing blood specimen collection techniques and hemolysis rates in an emergency department: analysis of venipuncture versus intravenous catheter collection techniques. J Emerg Nurs 2008;34:26-32.) The Emergency Department accounts for a large proportion of a hospital's labs rejected specimens for hemolysis.

Heyer, N. J., Derzon, J. H., Wings, L., Shaw, C., Mass, D., Snyder, S. R., et al. (2012). Effectiveness of practices to reduce blood sample hemolysis in EDs: A laboratory medicine best practices systematic review and meta-analysis. Clinical Biochemistry, 45(13-14), 1012-1032.

**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.*

see attachment graph depicting hemolysis over time files under 1a

We were able to pull data from our Lab Information System, Sunquest and provide monthly data on our hemolysis incidence.

**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.**

Hemolyzed blood samples are frequently received in clinical laboratories, comprising as much as 3.3% of all Routine samples and accounting for up to 40%–70% of all unsuitable samples identified — nearly five times higher than other causes, such as insufficient, incorrect, and clotted samples [1]. The American Society for Clinical Pathology established a 2% or lower benchmark for hemolysis rates among laboratory blood samples [2]. Hospital EDs have been identified as a major source of hemolyzed samples. Two studies in hospital EDs found hemolysis rates of more than 30% [3,4], while many others observed rates (ranging from 6.8 to 19.8%) that were considerably higher than the established benchmark [5–9]. Several studies [4,8,9] identified ED hemolysis rates that were significantly elevated compared to other hospital departments.

[1] Lippi G, Blanckaert N, Bonini P, Green S, Kitchen S, Palicka V, et al. Haemolysis: an overview of the leading cause of unsuitable specimens in clinical laboratories. Clin Chem Lab Med 2008;46:764-72.

[2] Lowe G, Stike R, Pollack M, Bosley J, O'Brien P, Hake A, et al. Nursing blood specimen collection techniques and hemolysis rates in an emergency department: analysis of venipuncture versus intravenous catheter collection techniques. J Emerg Nurs 2008;34:26-32.

[3] Grant M. The effect of blood drawing techniques and equipment on the hemolysis of ED laboratory blood samples. J Emerg Nurs

2003;29:116-21.

[4] Soderberg J, Jonsson PA, Wallin O, Grankvist K, Hultdin J. Haemolysis index—an estimate of preanalytical quality in primary health care. Clin Chem Lab Med 2009;47:940-4.

[5] Burns ER, Yoshikawa N. Hemolysis in serum samples drawn by emergency department personnel versus laboratory phlebotomists. Lab Med 2002;33:378-80.

[6] Dwyer DG, Fry M, Somerville A, Holdgate A. Randomized, single blinded control trial comparing haemolysis rate between two cannula aspiration techniques. Emerg Med Australas 2006;18:484-8.

[7] Ong ME, Chan YH, Lim CS. Observational study to determine factors associated with blood sample haemolysis in the emergency department. Ann Acad Med Singapore 2008;37:745-8.

[8] Pretlow L, Gandy T, Leibach EK, Russell B, Kraj B. A quality improvement cycle: hemolyzed specimens in the emergency department. Clin Lab Sci 2008;21:219-24.

[9] Tanabe P, Kyriacou DN, Garland F. Factors affecting the risk of blood bank specimen hemolysis. Acad Emerg Med 2003;10:897-900.

**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.

There are no published studies, its a uniformly distributed problem across all populations.

**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**

There are no published studies, its a uniformly distributed problem across all populations.

## 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):

Safety

**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.)

The measure specifications are included as an attachment with this submission. Value set details at VSAC webpage: <https://vsac.nlm.nih.gov/>

**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 an eMeasure Attachment: HEMOLYSISinED\\_v4\\_Artifacts\\_08282015.zip](#)

**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: Potassium\\_Sample\\_Hemolysis\\_in\\_the\\_Emergency\\_Departmentfin2\\_-6-\\_highlights.pdf](#)

**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:**

**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.

**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.

**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.

[not applicable](#)

**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).*

[ED Potassium Samples with Hemolysis](#)

**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).*

[patients with lab potassium sample where the result was hemolyzed.](#)

[Please see attached specifications](#)

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

[all ED patients getting a lab potassium sample](#)

**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).*

[All ED patient who get lab potassium sample](#)

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

[None](#)

<p><b>S.9. Denominator Exclusion Details</b> <i>(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.)</i>  not applicable</p>
<p><b>S.10. Stratification Information</b> <i>(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.)</i>  Not applicable.</p>
<p><b>S.11. Risk Adjustment Type</b> (Select type. Provide specifications for risk stratification in measure testing attachment)  No risk adjustment or risk stratification  If other:</p>
<p><b>S.12. Type of score:</b>  Rate/proportion  If other:</p>
<p><b>S.13. Interpretation of Score</b> <i>(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)</i>  Better quality = Lower score</p>
<p><b>S.14. Calculation Algorithm/Measure Logic</b> <i>(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.)</i>  The total number of hemolyzed potassium samples are divided by the total number of ED potassium samples</p>
<p><b>S.15. Sampling</b> <i>(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)</i>  IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.  Not applicable.</p>
<p><b>S.16. Survey/Patient-reported data</b> <i>(If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)</i>  Specify calculation of response rates to be reported with performance measure results.  Not applicable.</p>
<p><b>S.17. Data Source</b> <i>(Check ONLY the sources for which the measure is SPECIFIED AND TESTED).</i>  If other, please describe in S.18.  Electronic Health Data</p>
<p><b>S.18. Data Source or Collection Instrument</b> <i>(Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)</i>  IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.  Not applicable</p>
<p><b>S.19. Data Source or Collection Instrument</b> <i>(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)</i>  No data collection instrument provided</p>
<p><b>S.20. Level of Analysis</b> <i>(Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)</i>  Facility</p>
<p><b>S.21. Care Setting</b> <i>(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)</i>  Inpatient/Hospital, Other  If other: emergency department</p>

**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.

**2. Validity – See attached Measure Testing Submission Form**  
[CMSv0\\_bonnie\\_testing\\_April\\_19\\_2016.xlsx](#), [Bonnie\\_measure\\_testing.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 electronic health records \(EHRs\)](#)

**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:** [Blank\\_Feasibility\\_Assessment\\_Scorecard4fin.docx](#)

### 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.

There are multiple ways to collect this data we collected data from both our ONC certified EMR Epic( Epic 14) and our ONC certified Laboratory information systems(LIS) (Sunquest 7.2). Obtaining data from our EMR was more difficult for us perhaps because we didn't purchase the lab add on(LIS) from Epic. The data required a few iterations before we felt we had the data we needed. Part of our difficulty was the ask was part of larger data ask revolving around a performance improvement project with need for other fields. Had we limited our request to just lab values and ED patients it may have been easier to obtain. Our organization chose to go with our current LIS for lab information Sunquest. Since this information can be obtained directly from the LIS we presumed this to be our reference value for ED hemolysis. Most labs have LIS that can extract this type of data and typically used for quality improvement projects. We presume a choice can be made for which system to submit from but most will go with their LIS initially because of the ease and familiarity. Preliminary data analysis from our EMR vs LIS( both Onc certified) for about 70,000 patients a year for 2 years with about 35,000 lab potassium results for ED patients showed hemolysis rates that were close but not an exact match likely do to data definitions and population definitions. We plan on submitted request for funding/grant to analyze the variance which we presume maybe more related to our data ask. For example our LIS vs EMR pulled 2015 data 22,892 vs 32, 327 patients, with gross hemolyzed 1.7% vs 2.1 while the hemolyzed with comment was 5.7% vs 6.9%. We are exploring if part of the reason was that the Sunquest data included information on our free standing ED's which the BI data may not have. Our plan is if we get funding either internally or from an EMF/ENA grant to include an analysis of why we had dropped patients from the BI/EMR side.

**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).**

## 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	
Public Health/Disease Surveillance	

Quality Improvement (Internal to the specific organization)

**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

NA

**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?)

ED hemolysis has significant impact on care of ED patients. Since most of the issue around this causes are preanalytic; its impact on ED patients and work in both ED and lab lead significantly increased work around redraw and re-testing.

**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.)

To be completed after testing of the measure

**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.

**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.**

**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.

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

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

**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.**

#### 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.

One of the biggest reason is that very few ED are aware of the problem, nor are they aware that pre analytical factors( how the blood is drawn in the ED) are actually impacting hemolysis of ED samples. Many of the recommendations put forth have centered around use of straight needle to draw bloods necessitating the need for a second "stick" for IV placement but there are alternatives.

#### 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.**

None

**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.

No

**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.**

#### 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: [testing\\_form\\_for\\_trial\\_useMay\\_6-2.docx](#)

## Contact Information

**Co.1 Measure Steward (Intellectual Property Owner):** Cleveland Clinic

**Co.2 Point of Contact:** Michael, Phelan, [phelanm@ccf.org](mailto:phelanm@ccf.org), 216-973-2003-

**Co.3 Measure Developer if different from Measure Steward:** Cleveland Clinic

**Co.4 Point of Contact:** Michael, Phelan, [phelanm@ccf.org](mailto:phelanm@ccf.org), 216-973-2003-

## 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.

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2 Year the measure was first released:**

**Ad.3 Month and Year of most recent revision:**

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

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

**Ad.6 Copyright statement:**

**Ad.7 Disclaimers:**

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