



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 #: 2930

Corresponding Measures:

De.2. Measure Title: Febrile Neutropenia Risk Assessment Prior to Chemotherapy

Co.1.1. Measure Steward: University of Southern California

De.3. Brief Description of Measure: Percentage of patients with a solid malignant tumor or lymphoma who had a febrile neutropenia (FN) risk assessment completed and documented in the medical record prior to the first cycle of intravenous chemotherapy

1b.1. Developer Rationale: This process measure focuses on assessing the risk of febrile neutropenia (FN) in patients with a solid malignant tumor or lymphoma prior to receiving their first cycle of an intravenous chemotherapy regimen. FN is a complication of chemotherapy that occurs as a result of chemotherapy-induced neutropenia, causing the patient to be highly susceptible to infection. FN after chemotherapy occurs frequently, with the incidence of FN among patients with solid tumors estimated to be 13.1-20.6% during their chemotherapy course and 3.1-7.4% in the first cycle (Weycker et al., 2015), and incidence among patients with lymphoma estimated at 36% (Bohlius et al., 2008). If a patient presents with fever during the neutropenic phase, antibiotic treatment (usually intravenous) and often hospital admission are required to control a likely infection and prevent the development of sepsis, and other complications, including death. Estimates of mortality for patients who were hospitalized for complications related to FN range from 7 to 20 percent among those with solid tumors, with higher rates among those with comorbidities (Kuderer et al., 2006; Elting et al., 1997; Schwenkglens et al., 2006; Segal et al., 2008), and 9 percent among those with lymphoma (Kuderer et al., 2006).

Having information about a patient's FN risk allows the identification of patients at higher risk of FN who are more likely to benefit from treatment with prophylactic colony-stimulating factor (CSF) which stimulates the production of white blood cells and lowers the risk of FN and its complications. If a higher proportion of patients are assessed for FN risk, more of those with a higher FN risk would receive CSF and a lower proportion of patients would be expected to develop FN and its complications.

Citations

Bohlius, J., Herbst, C., Reiser, M., Schwarzer, G., & Engert, A. (2008). Granulopoiesis-stimulating factors to prevent adverse effects in the treatment of malignant lymphoma. *Cochrane Database Syst Rev*(4), Cd003189.

Elting, L. S., Rubenstein, E. B., Rolston, K. V., & Bodey, G. P. (1997). Outcomes of bacteremia in patients with cancer and neutropenia: observations from two decades of epidemiological and clinical trials. *Clin Infect Dis*, 25(2), 247-259.

Kuderer, N. M., Dale, D. C., Crawford, J., Cosler, L. E., & Lyman, G. H. (2006). Mortality, morbidity, and cost associated with febrile neutropenia in adult cancer patients. *Cancer*, 106(10), 2258-2266.

Schwenkglens M., J. C., Constenla M., Leonard R.C. (2006). Neutropenic event risk and impaired chemotherapy delivery in six European audits of breast cancer treatment. *Supportive Care Cancer*, 14(9), 901-909.

Segal, B. H., Freifeld, A. G., Baden, L. R., Brown, A. E., Casper, C., Dubberke, E., et al. (2008). Prevention and treatment of cancer-related infections. *J Natl Compr Canc Netw*, 6(2), 122-174.

Weycker, D., Li, X., Edelsberg, J., Barron, R., Kartashov, A., Xu, H., & Lyman, G. H. (2014). Risk and Consequences of Chemotherapy-Induced Febrile Neutropenia in Patients With Metastatic Solid Tumors. *Journal of Oncology Practice*, 11(1), 47-54.

<p>S.4. Numerator Statement: Number of patients who had an FN risk assessment documented in the medical record prior to the first cycle of intravenous chemotherapy.</p> <p>S.6. Denominator Statement: Number of patients 18 years of age or older with a solid malignant tumor or lymphoma receiving the first cycle of intravenous chemotherapy.</p> <p>S.8. Denominator Exclusions: There are no denominator exclusions.</p>
<p>De.1. Measure Type: Process</p> <p>S.17. Data Source: Electronic Health Records, Paper Medical Records</p> <p>S.20. Level of Analysis: Clinician : Group/Practice</p>
<p>IF Endorsement Maintenance – Original Endorsement Date: Oct 26, 2016 Most Recent Endorsement Date: Oct 26, 2016</p>
<p>IF this measure is included in a composite, NQF Composite#/title:</p> <p>IF this measure is paired/grouped, NQF#/title:</p> <p>De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?</p>

<p>1. Evidence, Performance Gap, Priority – Importance to Measure and Report</p>
<p>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.</p>
<p>1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form NQF_2930_Evidence_Form_3-11-16_To_NQF.pdf, NQF_2930_Evidence_Form_3-11-16_To_NQF.docx</p> <p>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.</p>
<p>1b. Performance Gap Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:</p> <ul style="list-style-type: none"> considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or Disparities in care across population groups. <p>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) <i>If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.</i></p> <p>This process measure focuses on assessing the risk of febrile neutropenia (FN) in patients with a solid malignant tumor or lymphoma prior to receiving their first cycle of an intravenous chemotherapy regimen. FN is a complication of chemotherapy that occurs as a result of chemotherapy-induced neutropenia, causing the patient to be highly susceptible to infection. FN after chemotherapy occurs frequently, with the incidence of FN among patients with solid tumors estimated to be 13.1-20.6% during their chemotherapy course and 3.1-7.4% in the first cycle (Weycker et al., 2015), and incidence among patients with lymphoma estimated at 36% (Bohlius et al., 2008). If a patient presents with fever during the neutropenic phase, antibiotic treatment (usually intravenous) and often hospital admission are required to control a likely infection and prevent the development of sepsis, and other complications, including death. Estimates of mortality for patients who were hospitalized for complications related to FN range from 7 to 20 percent among those with solid tumors, with higher rates among those with comorbidities (Kuderer et al., 2006; Elting et al., 1997; Schwenkglenks et al., 2006; Segal et al., 2008), and 9 percent among those with lymphoma (Kuderer et al., 2006).</p> <p>Having information about a patient's FN risk allows the identification of patients at higher risk of FN who are more likely to benefit from treatment with prophylactic colony-stimulating factor (CSF) which stimulates the production of white blood cells and lowers the risk of FN and its complications. If a higher proportion of patients are assessed for FN risk, more of those with a higher FN risk would receive CSF and a lower proportion of patients would be expected to develop FN and its complications.</p>

Citations

Bohlius, J., Herbst, C., Reiser, M., Schwarzer, G., & Engert, A. (2008). Granulopoiesis-stimulating factors to prevent adverse effects in the treatment of malignant lymphoma. *Cochrane Database Syst Rev*(4), Cd003189.

Elting, L. S., Rubenstein, E. B., Rolston, K. V., & Bodey, G. P. (1997). Outcomes of bacteremia in patients with cancer and neutropenia: observations from two decades of epidemiological and clinical trials. *Clin Infect Dis*, 25(2), 247-259.

Kuderer, N. M., Dale, D. C., Crawford, J., Cosler, L. E., & Lyman, G. H. (2006). Mortality, morbidity, and cost associated with febrile neutropenia in adult cancer patients. *Cancer*, 106(10), 2258-2266.

Schwenkglenks M., J. C., Constenla M., Leonard R.C. (2006). Neutropenic event risk and impaired chemotherapy delivery in six European audits of breast cancer treatment. *Supportive Care Cancer*, 14(9), 901-909.

Segal, B. H., Freifeld, A. G., Baden, L. R., Brown, A. E., Casper, C., Dubberke, E., et al. (2008). Prevention and treatment of cancer-related infections. *J Natl Compr Canc Netw*, 6(2), 122-174.

Weycker, D., Li, X., Edelsberg, J., Barron, R., Kartashov, A., Xu, H., & Lyman, G. H. (2014). Risk and Consequences of Chemotherapy-Induced Febrile Neutropenia in Patients With Metastatic Solid Tumors. *Journal of Oncology Practice*, 11(1), 47-54.

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.

Table 1. Summary Statistics for Measure Rates by Clinic

No. of clinics / Mean / Median / Min / Max / STD / IQR / P10 / P25 / P50 / P75 / P90

5 / 0.127 / 0.162 / 0 / 0.270 / 0.113 / 0.154 / 0.01 / 0.025 / 0.162 / 0.179 / 0.234

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.

FN occurs frequently after chemotherapy, with the incidence among patients with solid tumors estimated to be 13.1-20.6% during their chemotherapy course and 3.1-7.4% in the first cycle (Weycker et al., 2015), and incidence among patients with lymphoma estimated at 36% (Bohlius et al., 2008). Prophylactic treatment with CSF reduces the risk of FN substantially. For example, in a systematic review, use of CSFs was shown to significantly lower the proportion of breast cancer patients who developed FN after chemotherapy compared to placebo or no treatment (RR 0.27; 95% CI 0.11 to 0.70) (Renner et al., 2012). Additional data for other solid tumor sites and lymphoma are provided in the Evidence Form for this measure. Assessing FN risk prior to initiation of chemotherapy allows identifying patients who should receive CSF prophylaxis, thereby reducing the incidence of FN. According to a recent study in patients with solid tumors or lymphoma (O'Brien, Dempsey, & Kennedy, 2014), the rate of FN decreased by 52% when a tool is used to estimate FN risk and those with higher risk were treated with G-CSF.

There is limited published data on the frequency of risk assessment for FN. A study was conducted at four offices of a community oncology practice to assess the effect of a computer-based risk assessment tool (CBRAT) for FN in patients starting myelosuppressive chemotherapy regimens for breast cancer or non-small cell lung cancer (Miller, 2010). Before the implementation of the CBRAT, 13 of 101 patients (13%) had documented risk assessments for febrile neutropenia. After the implementation of CBRAT, risk assessment increased to 100% ($p < 0.001$).

Citations

Bohlius, J., Herbst, C., Reiser, M., Schwarzer, G., & Engert, A. (2008). Granulopoiesis-stimulating factors to prevent adverse effects in the treatment of malignant lymphoma. *Cochrane Database Syst Rev*(4), Cd003189.

Miller K. (2010). Using a Computer-Based Risk Assessment Tool to Identify Risk for Chemotherapy-Induced Febrile Neutropenia. *Clinical Journal of Oncology Nursing* 14(1), 87-91.

O'Brien, C., Dempsey, O., & Kennedy, M. J. (2014). Febrile neutropenia risk assessment tool: improving clinical outcomes for oncology patients. *Eur J Oncol Nurs*, 18(2), 167-174.

Renner, P., Milazzo, S., Liu, J. P., Zwahlen, M., Birkmann, J., & Horneber, M. (2012). Primary prophylactic colony-stimulating factors for the prevention of chemotherapy-induced febrile neutropenia in breast cancer patients. *Cochrane Database Syst Rev*, 10, Cd007913.

Weycker, D., Li, X., Edelsberg, J., Barron, R., Kartashov, A., Xu, H., & Lyman, G. H. (2014). Risk and Consequences of Chemotherapy-Induced Febrile Neutropenia in Patients With Metastatic Solid Tumors. *Journal of Oncology Practice*, 11(1), 47-54.

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.*

This measure was stratified for disparities by age, gender, and race/ethnicity. The results/scores are presented for these categories in Table 2.

Table 2. Rates by Age, Race/Ethnicity, and Gender for the Entire Sample

Category: Denominator / Numerator / Measure Rate

All Patients: 192 / 24 / 0.125

Age (years)

18 – 44: 27 / 6 / 0.222

45 – 64: 69 / 5 / 0.072

65 – 74: 63 / 8 / 0.127

75 – 84: 30 / 5 / 0.167

85+: 3 / 0 / 0

Race/Ethnicity

White, non-Hispanic: 111 / 17 / 0.153

Black, non-Hispanic: 16 / 0 / 0

Hispanic: 30 / 2 / 0.067

Other: 13 / 2 / 0.154

Unknown: 22 / 3 / 0.136

Gender

Female: 134 / 20 / 0.149

Male: 58 / 4 / 0.069

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

In a retrospective observational study of breast cancer patients based on 1994-2003 Medicare- Surveillance, Epidemiology, and End Results (SEER) data, Rajan et al. (2011) found that first-cycle CSF is used more frequently in white women than in nonwhite women. In the same study, the percentage of patients who received prophylactic CSF varied substantially by SEER geographic region. In another study of breast cancer patients based on 1998-2005 Medicare-SEER data, CSF use was significantly lower among black and Hispanic women than white women, and among women with a lower socioeconomic status score (based on census tract-level education, poverty level, and income data) (Hershman et al., 2012).

Citations

Hershman DL, Wilde ET, Wright JD, et al. (2012). Uptake and economic impact of first-cycle colony stimulating factor use during

adjuvant treatment of breast cancer. J Clin Oncol. 30:806-812, 2012

Rajan SS, Lyman GH, Carpenter WR, et al. (2011). Chemotherapy characteristics are important predictors of primary prophylactic CSF administration in older patients with breast cancer. Breast Cancer Res Treat 127, 511-520.

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):

Cancer, Cancer : Bladder, Cancer : Breast, Cancer : Colorectal, Cancer : Gynecologic, Cancer : Hematologic, Cancer : Liver, Cancer : Lung, Esophageal, Cancer : Prostate, Cancer : Skin

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

Safety : Complications, Safety : Healthcare Associated Infections, Safety : Medication

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

Populations at Risk

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.)

A measure-specific Web page was not set up for this measure.

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_2930_Code_Sets_12-5-18_To_NQF.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.

No

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.

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).

Number of patients who had an FN risk assessment documented in the medical record prior to the first cycle of intravenous chemotherapy.

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 numerator is defined as patients with an FN risk assessment documented in the medical record within 30 days before the first cycle of intravenous chemotherapy. An FN risk assessment is defined as at least one of the following:

- Template in the record or evidence that an online tool was used to assess FN risk (e.g., a Febrile Neutropenia Risk Assessment Tool similar to that described in the study by O'Brien et al. [2014])
- FN risk of the planned regimen was noted as a percentage (e.g., >20%) OR noted qualitatively (e.g., "high FN risk")
- Patient factor(s) was noted as a contributor to elevated FN risk (e.g., "high FN risk due to advanced age and comorbidity")
- Justification for USE of CSF was documented (e.g., "high risk regimen, CSF support will be used;" "due to the presence of expanders and risk of infection, CSF will be used")
- Justification for NOT using CSF was documented (e.g., "due to patient's youth and excellent health, CSF support will not be used")

Citation

O'Brien, C., Dempsey, O., & Kennedy, M. J. (2014). Febrile neutropenia risk assessment tool: improving clinical outcomes for oncology patients. *Eur J Oncol Nurs*, 18(2), 167-174.

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

Number of patients 18 years of age or older with a solid malignant tumor or lymphoma receiving the first cycle of intravenous chemotherapy.

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).

IDENTIFICATION OF PATIENTS WITH SOLID MALIGNANT TUMOR OR LYMPHOMA IN MEDICAL RECORDS

The time period is defined as any time during the measurement period (12 consecutive months). The denominator includes patients treated for a solid malignant tumor or lymphoma with first cycle of intravenous chemotherapy who meet the following conditions:

1. Patient was 18 years of age or older when first-cycle intravenous chemotherapy of the current regimen was initiated.
2. Patient's first-cycle intravenous chemotherapy was initiated any time during months 2 through 12 of the 12-month measurement period.
3. The treatment ordered was intravenous chemotherapy (see sheet labeled "IV Chemo CPT (2018 Codes)" in the attached Excel file for a list of 2018 CPT procedure codes for IV chemotherapy).
4. Patient was being treated for a solid malignant tumor or lymphoma (see sheet labeled "Denom Diag ICD10 (2018 Codes)" in the attached Excel file for a list of 2018 ICD-10 diagnosis codes).
5. Patient did not receive chemotherapy in the 12 months prior to the first cycle of chemotherapy.
6. Patients receiving experimental therapy or participating in clinical trials are not eligible because the trial protocol dictates CSF prophylaxis decisions.
7. Patients on weekly chemotherapy regimens are not eligible because the intervals between treatments are not long enough

for CSF prophylaxis to have an effect.

8. Patients receiving concurrent radiation therapy (see sheet labeled “Radiat Ther CPT (2018 Codes)” in the attached Excel file for 2018 CPT codes for radiation therapy) are not eligible because CSF prophylaxis is contraindicated for those patients due to the risk of irreversible stem cell damage. Patients who receive palliative local radiation for pain control are eligible.

9. Record of care was complete (e.g., provider notes prior to cycle #1 of chemotherapy are available).

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

There are no denominator exclusions.

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.)

Not applicable.

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.)

Measure results may be stratified by:

- Age – Divided into five categories: 18-44, 45-64, 65-74, 75-84, and 85+ years
- Race/Ethnicity
- Gender
- Curative/adjuvant and palliative chemotherapy
- Periodicity of chemotherapy (2-, 3- and 4-week cycles)

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:

Rate/proportion

If other:

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

Better quality = Higher score

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

Denominator: Number of patients 18 years of age or older with a solid malignant tumor or lymphoma receiving the first cycle of intravenous chemotherapy.

Create Denominator:

1. Identify patients who received intravenous chemotherapy in an outpatient setting during the measurement year (see sheet labeled “IV Chemo CPT (2018 Codes)” in the attached Excel file for 2018 CPT procedure codes for IV chemotherapy).
2. Of patients identified in Step 1, keep only patients who were being treated for a solid malignant tumor or lymphoma (see sheet labeled “Denom Diag ICD10 (2018 Codes)” in the attached Excel file for a list of 2018 ICD-10 diagnosis codes).
3. Of patients identified in Step 2, keep patients who initiated the first cycle of intravenous chemotherapy between February 1 and December 31 of the measurement year.
4. Of patients identified in Step 3, keep those who were 18 years of age or older when first-cycle intravenous chemotherapy was initiated.
5. Of patients identified in Step 4, keep patients who did not receive chemotherapy in the 12 months prior to the initiation of the first cycle of chemotherapy. This is the denominator of the measure.

Numerator: Number of patients who had an FN risk assessment documented in the medical record prior to the first cycle of

intravenous chemotherapy.

Create Numerator:

For patients in the denominator, identify those with an FN risk assessment documented in the medical record prior to the first cycle of intravenous chemotherapy. This is the numerator of the measure. Any of the following can be counted as evidence that a risk assessment for FN was performed:

- Template in the record or online tool was used to assess FN risk (e.g., a Febrile Neutropenia Risk Assessment Tool similar to that described in the study by O'Brien et al. [2014])
- FN risk of the planned regimen was noted as a percentage (e.g., >20%) OR noted qualitatively (e.g., "high FN risk")
- Patient factor(s) was noted as a contributor to elevated FN risk (e.g., "high FN risk due to advanced age and comorbidity")
- Justification for use of CSF was documented (e.g., "high risk regimen, CSF support will be used;" "due to the presence of expanders and risk of infection, CSF will be used")
- Justification for NOT using CSF was documented (e.g., "due to patient's youth and excellent health, CSF support will not be used")

The measure is calculated as the numerator divided by the denominator.

Citation

O'Brien, C., Dempsey, O., & Kennedy, M. J. (2014). Febrile neutropenia risk assessment tool: improving clinical outcomes for oncology patients. *Eur J Oncol Nurs*, 18(2), 167-174.

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.

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.

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

If other, please describe in S.18.

Electronic Health 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.

The data source for the measure is medical records in electronic or paper form. The instrument used to abstract the information from the medical record was developed for this measure and is attached as a file called "Measure Data Collection Tool" to the Appendix of this form. The field test data collection form is available from the developer upon request.

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)

No data collection instrument provided

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

Clinician : Group/Practice

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

Other, Outpatient Services

If other: Outpatient chemotherapy clinic

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.)

2. Validity – See attached Measure Testing Submission Form

[NQF_2930_Testing_Form_3-11-16_To_NQF.docx](#), [NQF_2930_Testing_Form_4-8-16_To_NQF.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.

[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**.

[Some data elements are in defined fields in 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).

[Information about FN risk assessment is often found in the patient's medical record and therefore may not be available from electronic sources.](#)

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.

Testing demonstrated that the measure was feasible to specify and calculate using medical record data. Medical record data needed to implement the measure are available, accessible, and timely.

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).

There are no fees, licensing, or other requirements to use any aspect of the measure as specified.

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)
Regulatory and Accreditation Programs	
Professional Certification or Recognition Program	
Quality Improvement (Internal to the specific organization)	
Not in use	

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

Not applicable; the measure is being submitted for initial endorsement.

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?)

Not applicable; the measure is being submitted for initial endorsement.

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.)

Because the measure is being submitted to NQF for initial endorsement, we do not yet have specific plans to submit it for use in a specific federal, state or local program. However, this measure would be appropriate for use in a CMS reporting program for outpatient care provided to oncology patients, for example, under oncology bundled payment demonstrations. We will explore the possibility of submitting this measure through the Measures under Consideration process for the one of the CMS reporting programs. This would entail submitting information about the measure through JIRA, which is the CMS software system for collecting information on candidate measures for the list of "Measures under Consideration" for the annual pre-rulemaking process.

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.

Not applicable; this measure is being submitted for initial endorsement.

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.

The measure has not been implemented in any reporting programs, and no unintended negative consequences were identified during testing.

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?

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.)

Not applicable; there are no competing NQF-endorsed measures.

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_2930_Measure_Data_Collection_Tool_4-8-16_To_NQF.docx](#)

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): University of Southern California

Co.2 Point of Contact: Soeren, Mattke, mattke@usc.edu, 202-468-5797-

Co.3 Measure Developer if different from Measure Steward: University of Southern California

Co.4 Point of Contact: Soeren, Mattke, mattke@usc.edu, 202-468-5797-

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.

A group of ten clinical oncology experts was used to rate the face validity and usability of the measure. Their names and affiliations are provided in the Testing Form.

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: Some proprietary codes are contained in the measure specifications for convenience of the user. Use of these codes may require permission from the code owner or agreement to a license.

ICD-10 codes are copyrighted © World Health Organization (WHO), Fourth Edition, 2010. CPT © 2010 American Medical Association. CPT is a registered trademark of the American Medical Association. All rights reserved.

Ad.7 Disclaimers: This performance measure does not establish a standard of medical care and has not been tested for all potential applications.

Ad.8 Additional Information/Comments: Liz Sloss at RAND made the revisions in the NQF submission form related to the field testing results on April 8, 2016, and re-submitted the measure.

Based on an email exchange between Amber Sterling at NQF and Liz Sloss at RAND (see below), this form will be updated after the March 11, 2016, submission deadline with results from the field test and other items related to testing.

From: cancerem [<mailto:cancerem@qualityforum.org>]

Sent: Friday, February 26, 2016 2:42 PM

To: Sloss, Liz; cancerem

Cc: Mattke, Soeren; Roth, Carol; Qureshi, Nabeel

Subject: RE: Questions about measure submission for the Cancer 2015-2016 Call for Measures

Hi Liz,

I have spoken to our Senior Director on the project and she is comfortable with you all submitting the testing by Friday April 8th. Please try very hard to stick to this timeline as we will then internally review the measure before we submit it to our committee.

As it gets closer, we can discuss how you actually will submit the amended information. If you aren't able to add it directly to the submission, we can definitely do it for you.

Thanks,
Amber

From: Sloss, Liz [mailto:sloss@rand.org]
Sent: Thursday, February 25, 2016 4:40 PM
To: cancerem
Cc: Mattke, Soeren; Roth, Carol; Qureshi, Nabeel
Subject: RE: Questions about measure submission for the Cancer 2015-2016 Call for Measures

Hi Amber,

We're planning to submit a new measure on "Febrile Neutropenia Risk Assessment Prior to Chemotherapy" to be considered for endorsement under the current Cancer 2015-2016 Call for Measures.

This measure is abstracted from electronic or paper medical records and we unfortunately encountered a few delays in obtaining enough records for the field test. So we're able to submit the Online Submission Form and the Evidence Form by the March 11 (6:00 PM ET) deadline, but will have to submit the Testing Form later. We would submit the Testing Form by Friday, April 8, at the latest. If the Testing Form is completed before that date, we will submit it as soon as it is completed. We have a few related questions:

- If the Measure Submission Form and the Evidence Form are submitted online by Friday, March 11, and the Testing Form is submitted by Friday, April 8, can the new measure be considered for endorsement under the Cancer 2015-2016 Call for Measures?
- How should we submit the testing form after the Friday, March 11 (6:00 PM ET) submission deadline?
 - o Can we access the already submitted Measure Submission Form ourselves and upload the testing form as an attachment?
 - o If not, can we email the testing form to you, so you can attach it manually to the already submitted Measure Submission Form?

I really appreciate your help in navigating the NQF Submission process.

Thanks,
Liz