NATIONAL QUALITY FORUM

Measure Submission and Evaluation Worksheet 5.0

This form contains the information submitted by measure developers/stewards, organized according to NQF's measure evaluation criteria and process. The evaluation criteria, evaluation guidance documents, and a blank online submission form are available on the submitting standards web page.

NQF #: 2081 NQF Project: Infectious Disease Project

(for Endorsement Maintenance Review)
Original Endorsement Date: Most Recent Endorsement Date: Last Updated Date: Aug 23, 2012

BRIEF MEASURE INFORMATION

De.1 Measure Title: Newly enrolled in medical care

Co.1.1 Measure Steward: Health Resources and Services Administration - HIV/AIDS Bureau

De.2 Brief Description of Measure: Percentage of patients, regardless of age, with a diagnosis of HIV who were newly enrolled and had a medical visit in each of the 4-month periods in the measurement year

2a1.1 Numerator Statement: Number of patients in the denominator who had at least one medical visit in each 4-month period of the measurement year (Measurement year is a consecutive 12-month period of time.).

2a1.4 Denominator Statement: Number of patients, regardless of age, with a diagnosis of HIV who was newly enrolled with a medical provider and had at least one medical visit in the first 4 months of the measurement year. "Newly enrolled" patients are those who are: newly diagnosed with HIV and new to medical care; patients new to medical care (previously diagnosed with HIV and never received HIV medical care); patients who transferred their medical care to your organization; or patients returning to medical care after a 2-year absence (patients re-engaged by the same organization).

2a1.8 Denominator Exclusions: Patients who died at any time during the measurement year.

1.1 Measure Type: Process
2a1. 25-26 Data Source: Electronic Clinical Data : Electronic Health Record, Paper Medical Records
2a1.33 Level of Analysis: Clinician : Group/Practice, Facility

1.2-1.4 Is this measure paired with another measure? No

De.3 If included in a composite, please identify the composite measure (*title and NQF number if endorsed*):
Not applicable

STAFF NOTES (*issues or questions regarding any criteria*)

Comments on Conditions for Consideration:

Is the measure untested? Yes☐ No☐ If untested, explain how it meets criteria for consideration for time-limited endorsement:

1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (*check De.5*):
5. Similar/related endorsed or submitted measures (*check 5.1*):
Other Criteria:

Staff Reviewer Name(s):

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

See Guidance for Definitions of Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable
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Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See guidance on evidence.
Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)

1a. High Impact: H☐ M☐ L☐ I ☐
(*The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.*)

De.4 Subject/Topic Areas *(Check all the areas that apply)*: Infectious Diseases : Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS)
De.5 Cross Cutting Areas (*Check all the areas that apply)*: Access

1a.1 Demonstrated High Impact Aspect of Healthcare: High resource use, Patient/societal consequences of poor quality, Severity of illness

1a.2 If "Other," please describe:

1a.3 Summary of Evidence of High Impact *(Provide epidemiologic or resource use data)*:
Human immunodeficiency virus (HIV) is a communicable infection that leads to a progressive disease with a long asymptomatic period. Approximately 50,000 persons in the United States are newly infected with HIV each year. Without treatment, most persons develop acquired immunodeficiency syndrome (AIDS) within 10 years of HIV infection. Antiretroviral therapy delays this progression, increases the length of survival, and prevents sexual transmission of HIV. Early linkage to, and long-term retention in HIV care leads to better health outcomes. Linkage to HIV medical care shortly after HIV diagnosis and continuous care thereafter provide opportunities for risk reduction counseling, initiation of treatment, and other strategies that improve individual health and prevent onward transmission of infection (1-6). Delayed linkage and poor retention in care are associated with delayed receipt of antiretroviral treatment, higher rate of virologic failure, and increased morbidity and mortality (5, 7).

Poor retention in care during the first year of outpatient medical care is associated with delayed or failed receipt of antiretroviral therapy, delayed time to virologic suppression and greater cumulative HIV burden, increased sexual risk transmission behaviors, increased risk of long-term adverse clinical events, and low adherence to antiretroviral therapy (1, 5, 7, 9). Early retention in HIV care has been found to be associated with time to viral load suppression and 2-year cumulative viral load burden among patients newly initiating HIV medical care (8). In this study, each "no show" clinic visit conveyed a 17% increased risk of delayed viral load suppression. A dose- response relationship has been shown between constancy of visits during the first year (i.e. having an HIV primary care visit in each 3-month quarter) and survival (9).

Another study examining care over a two year period has found that mean increase from baseline CD4 counts was significantly greater among those with optimal retention (visits in all 4 six-month intervals) than among those with sub-optimal retention, and that mortality was higher among those with suboptimal retention (10).

1a.4 Citations for Evidence of High Impact cited in 1a.3:
1. Giordano TP, Gifford AL, White AC Jr, Suarez-Almazor ME, Rabeneck L, Hartman C, et al. Retention in care: a challenge to survival with HIV infection. Clin Infect Dis. 2007; 44:1493-9.
2. Cohen MS, Chen YQ, McCauley M, Gamble T, Hosseinipour MC, Kumarasamy N, et al; HPTN 052 Study Team. Prevention of HIV-1 infection with early antiretroviral therapy. N Engl J Med. 2011; 365:493-505.
3. Giordano TP, White AC Jr, Sajja P, Graviss EA, Arduino RC, Adu-Oppong A, et al. Factors associated with the use of highly active antiretroviral therapy in patients newly entering care in an urban clinic. J Acquir Immune Defic Syndr. 2003; 32:399-405.
4. Lucas GM, Chaisson RE, Moore RD. Highly active antiretroviral therapy in a large urban clinic: risk factors for virologic failure and adverse drug reactions. Ann Intern Med. 1999; 131:81-7.
5. Metsch LR, Pereyra M, Messinger S, Del Rio C, Strathdee SA, Anderson-Mahoney P, et al; Antiretroviral Treatment and Access Study (ARTAS) Study Group. HIV transmission risk behaviors among HIV-infected persons who are successfully linked to care. Clin Infect Dis. 2008; 47:577-84.
6. Montaner JS, Lima VD, Barrios R, Yip B, Wood E, Kerr T, et al. Association of highly active antiretroviral therapy coverage, population viral load, and yearly new HIV diagnoses in British Columbia, Canada: a population-based study. Lancet. 2010; 376:532-

9.
7. Ulett KB, Willig JH, Lin HY, Routman JS, Abroms S, Allison J, Chatham A, Raper JL, Saag MS, Mugavero MJ. The therapeutic implications of timely linkage and early retention in HIV care. AIDS Patient Care STDS. 2009 Jan; 23(1):41-9.
8. Mugavero MJ, Amico KR, Westfall AO, Crane HM, Zinski A, Willig JH, Dombrowski JC, Norton WE, Raper JL, Kitahata MM, Saag MS. Early retention in HIV care and viral load suppression: implications for a test and treat approach to HIV prevention. J Acquir Immune Defic Syndr. 2012 Jan 1; 59(1):86-93.
9. Mugavero MJ, Lin HY, Willig JH, Westfall AO, Ulett KB, Routman JS, Abroms S, Raper JL, Saag MS, Allison JJ. Missed visits and mortality among patients establishing initial outpatient HIV treatment. Clin Infect Dis. 2009 Jan 15;48(2):248-56.
10. Tripathi A, Youmans E, Gibson JJ, Duffus WA. The impact of retention in early HIV medical care on viro-immunological parameters and survival: a statewide study. AIDS Res Hum Retroviruses. 2011; 27:751-8.

1b. Opportunity for Improvement: H☐ M☐ L☐ I ☐
(*There is a demonstrated performance gap - variability or overall less than optimal performance*)

1b.1 Briefly explain the benefits (improvements in quality) envisioned by use of this measure:
While prompt linkage to, and sustained retention in, HIV medical care have been clearly shown to maximize patient outcomes, defining and measuring "optimal retention" is not necessarily straightforward, as the most appropriate or useful measure varies according to where the patient is in his/her treatment trajectory (newly diagnosed, recently reengaged in care after some lapse in treatment, or long-time care recipients), who will use the measure (e.g., providers, administrators, or payors), and how the information yielded by the measure will be used (1).

1. Mugavero MJ, Davila JA, Nevin CR, Giordano TP. From Access to Engagement: Measuring Retention in Outpatient HIV Clinical Care. AIDS Patient Care and STDs. October 2010, 24(10): 607-613.

1b.2 Summary of Data Demonstrating Performance Gap *(Variation or overall less than optimal performance across providers)*:
[*For Maintenance – Descriptive statistics for performance results for this measure - distribution of scores for measured entities by quartile/decile, mean, median, SD, min, max, etc.*]

- A recent meta-analysis using observational data from HIV-diagnosed persons identified through surveillance systems, clinic medical records, or surveys found that short-term retention for medical visits was moderate, but declined over time:
  - 69% of patients had two or more HIV medical care visits during a 6-month interval.
  - 54% had at least two visits during the prior 12-months.
  - Only 64% had at least one visit every 6 months over an 18–24 month interval.
  - 26% had at least one visit per year during an interval of 3–5 years (1).
- Using data from 13 areas reporting relevant HIV-related tests to national HIV surveillance, CDC determined retention in care in persons older than 12 years living with HIV at the end of 2009, as well as the percentage established in care within 12 months after HIV diagnosis in 2008. CDC defined retention in care as >=2 CD4 or viral load tests at least 3 months apart in the past year. Among 100,375 persons living with HIV, 45% had >=2 tests at least 3 months apart. Approximately 64% established care within 12 months of diagnosis (2).
- In an analysis of HIV care utilization data (covering the period between January 1, 2001 and December 31, 2009) among HIV-infected adults enrolled in the HIV Research Network (HIVRN), a consortium of clinics that provide primary and subspecialty care to HIV patients, Fleishman et al. found that, overall, 21.7% of patients never established HIV care after an initial visit (i.e., .Among those who did become established patients, 57.4% did not meet the "consistent retention" (> 2 visits at least 90 days apart over 12 months) criterion in all years, and 34.9% were lost to follow-up (out of care for > 12 months) at some point in the course of their care. Only 20.4% of all patients established care, had regular visits to monitor their condition, and remained in care indefinitely (3).
- In an analysis of 9 years (January 1, 2001 through December 31, 2009) of outpatient HIV care utilization from 17, 425 HIV-infected adults enrolled in the HIV Research Network (HIVRN), a consortium of HIV care clinics, Yehia et al. found that:
  - 7179 (41.6%) individuals never experienced an interval between outpatient visits longer than 6 months (no gap), 5426 (31.1%) had one or more 7–12-month gaps in care, and 4820 (27.7%) had one or more gaps of longer than 12 months.
  - When HRSA's existing measure of retention in care (i.e., two outpatient visits separated by at least 90 days during a 12-month period) was extended across multiple years, patients met the criterion in an average of 74.6% of years during outpatient time (median = 83.3%; 95% CI 72.5%, 73.2%). Overall, 42.6% of patients met the HRSA criterion in all years during their outpatient time (4).

1b.3 Citations for Data on Performance Gap: [*For Maintenance – Description of the data or sample for measure results reported in 1b.2 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]

1. Marks G, Gardner L, Craw JA, Crepaz N. Entry and retention in medical care among HIV-diagnosed persons in the United States: a meta-analysis. AIDS 2010;24:2665–78.
2. Hall HI, Gray KM, Tang T, Li J, Mermin J. Retention in Care of Adults and Adolescents Living With HIV in 13 US Areas. JAIDS 2012; 60(1):77-82.
3. Fleishman JA, Yehia BR, Moore RD, Korthuis PT, Gebo KA; for the HIV Research Network. Establishment, Retention, and Loss to Follow-Up in Outpatient HIV Care. J Acquir Immune Defic Syndr. 2012 Apr 23. [Epub ahead of print]
4. Yehia BR, Fleishman JA, Metlay JP, Korthuis PT, Agwu AL, Berry SA, Moore RD, Gebo KA; for the HIV Research Network. Comparing different measures of retention in outpatient HIV care. AIDS 2012 Jun 1; 26(9):1131-1139.

1b.4 Summary of Data on Disparities by Population Group: [*For Maintenance –Descriptive statistics for performance results for this measure by population group*]

- In an evaluation of "no show" rates (defined as patients scheduled to go to a clinic who never attend an initial visit and, thus, fail to establish care) at the University of Alabama at Birmingham's 1917 HIV Clinic, Mugavero et al. found that female patients, racial minorities, and patients lacking private health insurance were significantly more likely to fail to establish care (1).
- In an analysis of data from 13 areas reporting relevant HIV-related tests to national HIV surveillance, CDC found that the percentage of people living with HIV (PLWH) who were in care in the past year (at least 1 visit) differed by demographic and risk groups (all $P < 0.05$, except for men who have sex with men [MSM] and injection drug-users [IDU]), with lower percentages of blacks/African Americans (54.9%) and Hispanics/Latinos (49.3%) having been in care in the past year compared with whites (64.2%). The percentage in care was slightly lower among older PLWH (eg, 50.9% among those 65 years and older) compared with PLWH aged 13–24 years (62.1%). More females exposed through heterosexual contact were in care compared with the other risk groups among females or males (2).

1b.5 Citations for Data on Disparities Cited in 1b.4: [*For Maintenance – Description of the data or sample for measure results reported in 1b.4 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]

1. Mugavero MJ, Lin HY, Allison JJ, et al. Failure to establish HIV care: characterizing the ''no show'' phenomenon. Clin Infect Dis. 2007;45: 127–30.
2. Hall HI, Gray KM, Tang T, Li J, Mermin J. Retention in Care of Adults and Adolescents Living With HIV in 13 US Areas. JAIDS 2012; 60(1):77-82.

1c. Evidence (*Measure focus is a health outcome OR meets the criteria for quantity, quality, consistency of the body of evidence.*)
Is the measure focus a health outcome? Yes☐ No☐ If not a health outcome, rate the body of evidence.

Quantity: H☐ M☐ L☐ I☐ Quality: H☐ M☐ L☐ I☐ Consistency: H☐ M☐ L☐ I☐

Quantity	Quality	Consistency	Does the measure pass subcriterion1c?
M-H	M-H	M-H	Yes☐
L	M-H	M	Yes☐ IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise No☐
M-H	L	M-H	Yes☐ IF potential benefits to patients clearly outweigh potential harms: otherwise No☐
L-M-H	L-M-H	L	No ☐

Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service	Does the measure pass subcriterion1c? Yes☐ IF rationale supports relationship

1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome)*:
As noted in Section 1a.3., there is sufficient evidence that lower rates of significant gaps between medical visits is associated with desirable patient quality of care outcomes including reduce morbidity and mortality, as well as improved adherence to HIV antiretroviral medications.

See Guidance for Definitions of Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable

1c.2-3 Type of Evidence *(Check all that apply)*:
Clinical Practice Guideline, Selected individual studies (rather than entire body of evidence), Systematic review of body of evidence (other than within guideline development)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:
As described in Section 1a.3, retention in medical care visits is associated with decreased patient morbidity and mortality and increased adherence to HIV antiretroviral medications. In recent years, the body of literature related to retention in HIV medical care has grown significantly. Measures of retention in care are important to monitor because optimal care cannot be delivered if patients do not maintain a schedule of regular visits. Optimal care substantially reduces morbidity and mortality and prevents transmission.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: To develop its recently released Guidelines for Improving Entry Into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations From an International Association of Physicians in AIDS Care Panel, the International Association of Physicians in AIDS Care (IAPAC) conducted a systematic literature search to produce an evidence base restricted to randomized, controlled trials (RCTs) and observational studies with comparators that had at least 1 measured biological or behavioral end point. The IAPAC recommendation focused on monitoring retention in care was based on 2 studies.

The Department of Health and Human Services (HHS) Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents was based on 14 studies examining impact of treatment on reducing morbidity and mortality, and 8 studies examining impact of treatment on preventing transmission. These guidelines outline the frequency at which CD4 counts, viral loads, and a number of other laboratory tests should be monitored for people living with HIV. There are 3 studies that support the frequency of CD4 count monitoring and 9 studies supporting the frequency of viral load monitoring. Similarly, the U.S. Department of Health and Human Services Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection recommend monitoring the CD4 and viral load levels at time of diagnosis and every 3-4 months thereafter.

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events*): Two well-designed analyses of cohort studies that examined the relationship between missed visits and survival.

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* Giordano et al: Compared with persons with visits in each quarter of their initial year in treatment, persons with visits in 3, 2, and 1 quarter were at increased risk for death: HR 1.42 (95% CI 1.11-1.83), 1.67 (95% CI 1.24-2.25), and 1.95 (95% CI 1.37-2.78), respectively.

Mugavero at el: Compared with persons with no missed visits during their initial year of treatment, persons who missed one or more visits were at increased risk for death: HR 2.70 (95% CI 1.00-7.30).

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:
Benefits: Attending medical visits allows for needed assessment, screenings, counseling, monitoring, procedures, and vaccinations.
Harm: There is no perceived harms associate with attending medical visits.
Cost: Cost associated with attending medical visits and components of the medical visit (screenings, procedures, vaccinations, etc.).

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? Yes

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: Expert panel convened by International Association of Physicians in AIDS Care (IAPAC). See http://libproxy.cdc.gov:2144/content/156/11/817.full#app-1 for panel roster and www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=M12-0061 for disclosures.

The panel members that contributed to the HHS Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents as well as the panel members' disclosures can be found in the guidelines available at http://www.aidsinfo.nih.gov/contentfiles/lvguidelines/adultandadolescentgl.pdf.

The panel members that contributed to the HHS Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection as well as the panel members' disclosures can be found at http://aidsinfo.nih.gov/contentfiles/PedFinancialDisclosures2011.pdf.

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: Modified GRADE system. The panel graded the overall quality of the body of evidence for each recommendation on the basis of its risk for bias, quantity, and consistency using methods adapted from the American College of Physicians guidelines and the Grading of Recommendation Assessment, Development and Evaluation (GRADE) System for Rating Clinical Guidelines processes.

1c.13 Grade Assigned to the Body of Evidence: AI-AIII

1c.14 Summary of Controversy/Contradictory Evidence: Not applicable

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:
Giordano TP, Gifford AL, White C, Suarez-Almazor ME, Rabeneck L, Hartman C, Backus LI, Mole LE, Morgan RO. Retention in Care: A challenge to survival with HIV infection. Clin Infec Dis 2007; 44:1493-9.

Mugavero MJ, Lin HY, Willig JH, Westfall AO, Ulett KB, Routman JS, Abroms S, Raper JL, Saag MS, Allison JJ. Missed visits and mortality among patients establishing initial outpatient HIV treatment. Clin Infect Dis. 2009 Jan 15;48(2):248-56.

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:
Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents:

Frequency of CD4 Count Monitoring. In general, CD4 counts should be monitored every 3–4 months to (1) determine when to start ART in untreated patients, (2) assess immunologic response to ART, and (3) assess the need for initiation or discontinuation of prophylaxis for opportunistic infections (AI).

At Initiation or Change in Therapy. Plasma viral load should be measured before initiation of therapy and preferably within 2–4 weeks, and not more than 8 weeks, after treatment initiation or after treatment modification (BI). Repeat viral load measurement should be performed at 4–8-week intervals until the level falls below the assay's limit of detection (BIII).

- In Patients Who Have Viral Suppression but Therapy Was Modified Due to Drug Toxicity or Regimen Simplification. Viral load measurement should be performed within 2–8 weeks after changing therapy. The purpose of viral load monitoring at this point is to confirm potency of the new regimen (BIII).
- In Patients on a Stable ARV Regimen. Viral load should be repeated every 3–4 months or as clinically indicated (BII).

Some clinicians may extend the interval to every 6 months for adherent patients who have suppressed viral loads for more than 2–3 years and whose clinical and immunologic status is stable (BIII).

Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. Available at http://www.aidsinfo.nih.gov/contentfiles/lvguidelines/adultandadolescentgl.pdf. Section accessed [6/28/2012] [C-4 and C-6]

Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection:

Consequently, CD4 values should be obtained as soon as possible after a child has a positive test for HIV and every 3 to 4 months thereafter. More frequent evaluation may be needed for children with suspected clinical, immunologic, or virologic deterioration; to confirm an abnormal value; or when initiating or changing therapy. Because young infants with HIV infection may have rapid disease progression, some experts monitor CD4 percentage more frequently (e.g., every 1-2 months) in untreated infants younger than 6-12 months of age. (Page 19). HIV RNA copy number should be assessed as soon as possible after a child has a positive virologic test for HIV and every 3 to 4 months thereafter; more frequent evaluation may be necessary for children experiencing virologic, immunologic, or clinical deterioration or to confirm an abnormal value (see). (Page 25)

Panel on Antiretroviral Therapy and Medical Management of HIV-Infected Children. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection. August 11, 2011; pp 1-268. Available at http://aidsinfo.nih.gov/ContentFiles/lvguidelines/PediatricGuidelines.pdf. Accessed June 29, 2012. [Pages 19 and 25]

Guidelines for Improving Entry Into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations From an International Association of Physicians in AIDS Care Panel:

Systematic monitoring of retention in HIV care is recommended for all patients.

Annals of Internal Medicine, vol 156, no 11, page 818. http://annals.org/article.aspx?doi=10.7326/0003-4819-156-11-201206050-00419

1c.17 Clinical Practice Guideline Citation: Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. Available at http://www.aidsinfo.nih.gov/contentfiles/lvguidelines/ adultandadolescentgl.pdf. Section accessed [6/28/2012]

Panel on Antiretroviral Therapy and Medical Management of HIV-Infected Children. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection. August 11, 2011; pp 1-268. Available at http://aidsinfo.nih.gov/ContentFiles/lvguidelines/PediatricGuidelines.pdf. Accessed June 29, 2012.

Guidelines for Improving Entry Into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations From an International Association of Physicians in AIDS Care Panel. Melanie A. Thompson, MD; Michael J. Mugavero, MD, MHSc; K. Rivet Amico, PhD; Victoria A. Cargill, MD, MSCE; Larry W. Chang, MD, MPH; Robert Gross, MD, MSCE; Catherine Orrell, MBChB, MSc, MMed; Frederick L. Altice, D; David R. Bangsberg, MD, MPH; John G. Bartlett, MD; Curt G. Beckwith, MD; Nadia Dowshen, MD; Christopher M. Gordon, PhD; Tim Horn, MS; Princy Kumar, MD; James D. Scott, PharmD, MEd; Michael J. Stirratt, PhD; Robert H. Remien, PhD; Jane M. Simoni, PhD; and Jean B. Nachega, MD, PhD, MPH. Ann Int med 2012; 156:817-833.

1c.18 National Guideline Clearinghouse or other URL: http://www.aidsinfo.nih.gov/contentfiles/lvguidelines/ adultandadolescentgl.pdf; http://aidsinfo.nih.gov/ContentFiles/lvguidelines/PediatricGuidelines.pdf; http://annals.org/article.aspx?doi=10.7326/0003-4819-156-11-201206050-00419

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? Yes

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: Expert panels developed guidelines

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: The HHS guidelines and the International Association of Physicians in AIDS Care used a similar system where strength of each recommendation was graded on the basis of not only the quality and quantity of the body of evidence but also the magnitude of benefit, risk and burdens, costs, and generalizability, recording scores on standardized forms.

HHS guideline:
A: Strong recommendation for the statement
B: Moderate recommendation for the statement
C: Optional recommendation for the statement

International Association of Physicians in AIDS Care guidelines:
Strong (A) Almost all patients should receive the recommended course of action
Moderate (B) Most patients should receive, however other choices may be more appropriate for some
Optional (C) May consider on the basis of individual patient circumstances

1c.23 Grade Assigned to the Recommendation: A

1c.24 Rationale for Using this Guideline Over Others: At present there are no other graded guidelines addressing retention in care.

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?
1c.25 Quantity: Moderate 1c.26 Quality: Moderate1c.27 Consistency: High
1c.28 Attach evidence submission form:
1c.29 Attach appendix for supplemental materials:

Was the threshold criterion, *Importance to Measure and Report*, met?
(*1a & 1b must be rated moderate or high and 1c yes*) Yes☐ No☐
Provide rationale based on specific subcriteria:

For a new measure if the Committee votes NO, then STOP.
For a measure undergoing endorsement maintenance, if the Committee votes NO because of 1b. (no opportunity for improvement), it may be considered for continued endorsement and all criteria need to be evaluated.

2. RELIABILITY & 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. (evaluation criteria)
Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

S.1 Measure Web Page *(In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained*). Do you have a web page where current detailed specifications for this measure can be obtained? No

S.2 If yes, provide web page URL:

2a. RELIABILITY. Precise Specifications and Reliability Testing: H☐ M☐ L☐ I ☐

2a1. Precise Measure Specifications. (*The measure specifications precise and unambiguous.*)

2a1.1 Numerator Statement *(Brief, narrative description of the measure focus or what is being measured about the target population, e.g., cases from the target population with the target process, condition, event, or outcome)*:
Number of patients in the denominator who had at least one medical visit in each 4-month period of the measurement year (Measurement year is a consecutive 12-month period of time.).

2a1.2 Numerator Time Window *(The time period in which the target process, condition, event, or outcome is eligible for inclusion)*:
The numerator time window is the measurement year. The measurement year can be any consecutive 12-month period.

2a1.3 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, codes with descriptors, and/or specific data collection items/responses*:
To be included in the numerator, patients had at least one medical visit in each 4-month period of the measurement year.

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
Number of patients, regardless of age, with a diagnosis of HIV who was newly enrolled with a medical provider and had at least one medical visit in the first 4 months of the measurement year. "Newly enrolled" patients are those who are: newly diagnosed with HIV and new to medical care; patients new to medical care (previously diagnosed with HIV and never received HIV medical care); patients who transferred their medical care to your organization; or patients returning to medical care after a 2-year absence (patients re-engaged by the same organization).

2a1.5 Target Population Category *(Check all the populations for which the measure is specified and tested if any)*: Adult/Elderly Care, Children's Health, Special Healthcare Needs

2a1.6 Denominator Time Window *(The time period in which cases are eligible for inclusion)*:
Patients are eligible for inclusion in the denominator if they were diagnosis of HIV, were newly enrolled with a medical provider, and had at least one medical visit with a provider in the first 4 months of the measurement year.

2a1.7 Denominator Details (*All information required to identify and calculate the target population/denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
To be included in the denominator, patients must meet all of the following conditions/events:
1. Patients of any age during the measurement year
2. Patients without a date of death during the measurement year
3. Patients diagnosed with HIV during the first 3 months of the measurement year and had a medical visit in the first 4 months of the measurement year OR patients diagnosed with HIV prior to the measurement year and their first medical visit ever with the provider is during the first 4 months of the measurement year OR patients diagnosed with HIV prior to the measurement year and had a medical visit in the first 4 months of the measurement year after a 2-year absence from medical care

2a1.8 Denominator Exclusions *(Brief narrative description of exclusions from the target population)*:
Patients who died at any time during the measurement year.

2a1.9 Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
Patients who died at any time during the measurement year.

2a1.10 Stratification Details/Variables *(All information required to stratify the measure results including the stratification variables, codes with descriptors, definitions, and/or specific data collection items/responses)*:
Not applicable

2a1.11 Risk Adjustment Type *(Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13)*: No risk adjustment or risk stratification 2a1.12 If "Other," please describe:

2a1.13 Statistical Risk Model and Variables *(Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development should be addressed in 2b4.)*:

2a1.14-16 Detailed Risk Model Available at Web page URL (or attachment). Include coefficients, equations, codes with descriptors, definitions, and/or specific data collection items/responses. Attach documents only if they are not available on a webpage and keep attached file to 5 MB or less. NQF strongly prefers you make documents available at a Web page URL. Please supply login/password if needed:

2a1.17-18. Type of Score: Rate/proportion

2a1.19 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

2a1.20 Calculation Algorithm/Measure Logic*(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; aggregating data; risk adjustment; etc.)*:

1. Identify the individuals who satisfy all specific criteria for inclusion in the denominator. The individuals who did not have a date of death during the measurement year and met one of the following criterion are the denominator population.
   a. Patients diagnosed with HIV during the first 3 months of the measurement year and had a medical visit in the first 4 months of the measurement year OR
   b. Patients diagnosed with HIV prior to the measurement year and their first medical visit ever with the provider is during the first 4 months of the measurement year OR
   c. Patients diagnosed with HIV prior to the measurement year and had a medical visit in the first 4 months of the measurement year after a 2-year absence from medical care
2. Identify the individuals from the denominator population who meet the criterion for inclusion in the numerator: patients who had at least one medical visit in each 4-month period of the measurement year
3. Calculate the percentage by dividing the numerator population by the denominator population and multiply by 100.

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:

2a1.24 Sampling (Survey) Methodology. If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate):
Not applicable; not based on a sample.

2a1.25 Data Source *(Check all the sources for which the measure is specified and tested*). If other, please describe:
Electronic Clinical Data : Electronic Health Record, Paper Medical Records

2a1.26 Data Source/Data Collection Instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): Not applicable.

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment:

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:
Attachment
Newly_enrolled_measure_data_dictionary.pdf

2a1.33 Level of Analysis (*Check the levels of analysis for which the measure is specified and tested)*: Clinician : Group/Practice, Facility

2a1.34-35 Care Setting *(Check all the settings for which the measure is specified and tested)*: Ambulatory Care : Clinician Office/Clinic

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability*.)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

We utilized the multisite HIV Research Network (HIVRN), a consortium of community and academic HIV providers care sites, linked by a centralized Data Coordinating Center (DCC). The HIVRN has 18 participating treatment sites. However, for this work, we included 15/18 sites. Three sites were not included because they did not submit data for all the years that data were analyzed (e.g. new or retiring sites). The sites are representative of both academic and community-based HIV care; of the 4 major geographic divisions of the U.S. of the demographic diversity of HIV infection across the U.S. and of the insurance status and coverage types typical of the population in care. The measurement years included calendar years 2008, 2009, and 2010.

All of the patients in the HIVRN dataset have a diagnosis of HIV. Patients were included, regardless of age, in each measurement year if they newly enrolled with a medical provider and had at least one medical visit in the first 4 months of the measurement year. The following lists the number of patients included for each year:

Year	Number of patients included
2008	1,298
2009	1,230
2010	1,245

The patient characteristics are as follows:

	2008	2009	2010			
Race/Ethnicity:						
African American/Caribbean			49.80%	49.92%	49.68%	
White, not Hispanic			27.19%	30.00%	27.80%	
Hispanic	20.40%	18.02%	19.69%			
Other	2.61%	2.07%	2.84%			
Gender:						
Male	72.41%	74.15%	75.26%			
Female	26.74%	25.20%	23.78%			
Transgender		0.85%	0.65%	0.96%		
Age:						
<18	1.23%	0.73%	1.12%			
18-29	18.10%	19.76%	21.53%			
30-49	62.17%	62.68%	58.31%			
50+	18.49%	16.83%	19.04%			
HIV Risk:						
IV Drug Use		15.79%	11.30%	12.61%		
Men Having Sex with Men			38.83%	44.39%	43.29%	
Heterosexual Contact			36.67%	36.59%	35.34%	
Vertical	1.00%	0.98%	1.12%			
Blood	0.85%	0.73%	0.80%			
Other/Unknown		6.86%	6.02%	6.83%		
Insurance:						
Private	16.33%	17.32%	16.95%			
Medicaid		35.75%	32.28%	29.72%		
Medicare		8.55%	6.42%	9.80%		
Dual (Medicare and Medicaid)				2.70%	2.11%	2.17%
Uninsured		6.32%	4.55%	4.50%		
Ryan White		26.43%	31.71%	32.21%		

Other/Unknown	3.93%	5.61%	4.66%
Site Type:			
Hospital-based	73.73%	72.60%	76.63%
Community-based		26.27%	27.40%	23.37%

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:
Reliability was calculated according to the methods outlined in a technical report prepared by J.L. Adams for the National Committee for Quality Assurance titled "The Reliability of Provider Profiling: A Tutorial" (RAND Corporation, TR-653-NCQA, 2009). In this context, reliability represents the ability of a measure to confidently distinguish the performance of one physician from another. As discussed in the report: "Conceptually, it is the ratio of signal to noise. The signal in this case is the proportion of variability in measured performance that can be explained by real differences in performance. There are 3 main drivers of reliability; sample size, differences between physicians, and measurement error."
According to this approach, reliability is estimated with a beta-binomial model. The beta-binomial model is appropriate for measuring the reliability of pass/fail measures such as those proposed here. Reliability scores vary from 0.0 to 1.0, with a score of zero indicating that all variation is attributable to measurement error (noise, or individual accountable entity variance) whereas a reliability of 1.0 implies that all variation is caused by real difference in performance across accountable entities.
As discussed in the technical report, there is not a clear cut-off for minimum reliability level. Values above 0.7, however, are considered sufficient to see differences between some physicians (or clinics) and the mean, and values above 0.9 are considered sufficient to see differences between pairs of physicians (in this case clinics).
Clinic-specific reliability results for the "Newly enrolled in medical care" measure are detailed in the Table below. Clinic-specific reliability is consistently greater than 0.9, and thus can be considered to be very good. Clinic-specific reliability is lower for the "newly enrolled" measure, owing at least in part to the small number of observations in several clinics. Median reliability, however, is 0.91 and can therefore be considered good. Clinic-specific reliability was also calculated for 2008 and 2009. Results were consistent with results from 2010 and are not shown here.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Table 1: Clinic-Specific Reliability for Patients Newly Enrolled in Medical Care with Medical Visits Measure - Year 2010
Between-clinic variance: 0.0271

Clinic	n	percent	Reliability
A	173	60.1	0.95
B	5	20.0	0.46
C	40	55.0	0.81
D	42	50.0	0.82
E	37	45.9	0.80
F	140	50.7	0.94
G	19	84.2	0.76
H	98	48.0	0.91
I	135	59.3	0.94
J	149	58.4	0.94
K	33	60.6	0.79
L	290	20.3	0.98
M	64	73.4	0.90
Peds	20	95.0	0.92
Median	0.91 (Range 0.46-0.98)		

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* are consistent with the evidence cited in support of the measure focus (*criterion 1c)* and identify any differences from the evidence:
Studies suggest that poor retention, increased rate of missed medical visits, and gaps in medical visits is an issue that leads to poorer health outcomes among people living with HIV. The measure specifications presented are consistent with the elements of patient retention as descried in the studies.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:

We utilized the multisite HIV Research Network (HIVRN), a consortium of community and academic HIV providers care sites, linked by a centralized Data Coordinating Center (DCC). The HIVRN has 18 participating treatment sites. However, for this work, we included 15/18 sites. Three sites were not included because they did not submit data for all the years that data were analyzed (e.g. new or retiring sites). The sites are representative of both academic and community-based HIV care; of the 4 major geographic divisions of the U.S. of the demographic diversity of HIV infection across the U.S. and of the insurance status and coverage types typical of the population in care. The measurement years included calendar years 2008, 2009, and 2010.

All of the patients in the HIVRN dataset have a diagnosis of HIV. Patients were included, regardless of age, in each measurement year if they newly enrolled with a medical provider and had at least one medical visit in the first 4 months of the measurement year. The following lists the number of patients included for each year:

Year	Number of patients included
2008	1,298
2009	1,230
2010	1,245

The patient characteristics are as follows:

	2008	2009	2010
Race/Ethnicity:			
African American/Caribbean	49.80%	49.92%	49.68%
White, not Hispanic	27.19%	30.00%	27.80%
Hispanic	20.40%	18.02%	19.69%
Other	2.61%	2.07%	2.84%
Gender:			
Male	72.41%	74.15%	75.26%
Female	26.74%	25.20%	23.78%
Transgender	0.85%	0.65%	0.96%
Age:			
<18	1.23%	0.73%	1.12%
18-29	18.10%	19.76%	21.53%
30-49	62.17%	62.68%	58.31%
50+	18.49%	16.83%	19.04%
HIV Risk:			
IV Drug Use	15.79%	11.30%	12.61%
Men Having Sex with Men	38.83%	44.39%	43.29%
Heterosexual Contact	36.67%	36.59%	35.34%
Vertical	1.00%	0.98%	1.12%
Blood	0.85%	0.73%	0.80%
Other/Unknown	6.86%	6.02%	6.83%
Insurance:			
Private	16.33%	17.32%	16.95%
Medicaid	35.75%	32.28%	29.72%
Medicare	8.55%	6.42%	9.80%
Dual (Medicare and Medicaid)	2.70%	2.11%	2.17%
Uninsured	6.32%	4.55%	4.50%
Ryan White	26.43%	31.71%	32.21%

Other/Unknown 3.93% 5.61% 4.66%

Site Type:
Hospital-based 73.73% 72.60% 76.63%
Community-based 26.27% 27.40% 23.37%

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:
Face validity was established through a technical work group established for the development of the measures. The technical work group consisted of leading researchers and physicians in HIV retention, care, and treatment as well as governmental and non-governmental public health officials from across the country. The technical work group used a modified Delphi process whereby experts in performance measurement and retention presented the most current research to the work group members. Often, the principle investigator of the study presented to the work group. The work group members discussed each of the presentations and identified data elements for each measure. The work group members voted on the domains for the proposed measures. The vote was based on importance, usability, and feasibility. The votes were tallied and draft components of the measures were returned to the workgroup for additional voting via survey. Consensus was reach when a simple majority agreed on the final set of measures.

Additional face validity was gained through a structured process of webinar presentations to a national audience of Ryan White Program providers. The Ryan White providers were presented detailed information about each of the measures via a webinar. After receiving the detailed information about the measures (technical work group process, supporting research studies, numerator, denominator, and exclusions), Ryan White providers were asked to implement the measures within their quality management program and provide feedback on the feasibility and usability of the measures. Feedback was gathered during an additional webinar and written responses.

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:
This measure was found to be important, usable, and feasible by the technical work group overseeing the development of this measure and several others. The technical work group considered seven measures. In total, four of the 7 measures were voted as the most import, feasible, and useable. Four of the 7 measures were voted as the most important, feasible, and useable. The Ryan White providers have also deemed the measures important, usable, and feasible. Over 180 Ryan White providers from across the country have voluntary reported performance data for this measure at least once with 148 of those providers reporting performance data for 4 straight measurement periods.

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Testing was not performed for the excluded patients.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:
Testing was not performed for the excluded patients.

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*
Testing was not performed for the excluded patients.

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Not applicable.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:
Not applicable.

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:
Not applicable.

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: Not applicable.

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
We utilized the multisite HIV Research Network (HIVRN), a consortium of community and academic HIV providers care sites, linked by a centralized Data Coordinating Center (DCC). The HIVRN has 18 participating treatment sites. However, for this work, we included 15/18 sites. Three sites were not included because they did not submit data for all the years that data were analyzed (e.g. new or retiring sites). The sites are representative of both academic and community-based HIV care; of the 4 major geographic divisions of the U.S. of the demographic diversity of HIV infection across the U.S. and of the insurance status and coverage types typical of the population in care. The measurement years included calendar years 2008, 2009, and 2010.

All of the patients in the HIVRN dataset have a diagnosis of HIV. Patients were included, regardless of age, in each measurement year if they newly enrolled with a medical provider and had at least one medical visit in the first 4 months of the measurement year. The following lists the number of patients included for each year:

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The patient characteristics are as follows:

	2008	2009	2010
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Hispanic	20.40%	18.02%	19.69%
Other	2.61%	2.07%	2.84%
Gender:			
Male	72.41%	74.15%	75.26%
Female	26.74%	25.20%	23.78%
Transgender	0.85%	0.65%	0.96%
Age:			
<18	1.23%	0.73%	1.12%
18-29	18.10%	19.76%	21.53%
30-49	62.17%	62.68%	58.31%
50+	18.49%	16.83%	19.04%
HIV Risk:			

IV Drug Use	15.79%	11.30%	12.61%		
Men Having Sex with Men	38.83%	44.39%	43.29%		
Heterosexual Contact	36.67%	36.59%	35.34%		
Vertical	1.00%	0.98%	1.12%		
Blood	0.85%	0.73%	0.80%		
Other/Unknown	6.86%	6.02%	6.83%		

Insurance:

Private	16.33%	17.32%	16.95%		
Medicaid	35.75%	32.28%	29.72%		
Medicare	8.55%	6.42%	9.80%		
Dual (Medicare and Medicaid)		2.70%	2.11%	2.17%	
Uninsured	6.32%	4.55%	4.50%		
Ryan White	26.43%	31.71%	32.21%		
Other/Unknown	3.93%	5.61%	4.66%		

Site Type:

Hospital-based	73.73%	72.60%	76.63%		
Community-based		26.27%	27.40%	23.37%	

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:
We reported the mean, minimum, maximum, and percentile.

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
Among the 14 sites (2 pediatric sites were combined due to small patient populations), the following data are reported for measurement years 2008, 2009, and 2010.

	2008	2009	2010
Minimum		28.97%	18.52%	20.00%
Maximum		88.89%	77.27%	95.00%
Mean	54.47%	52.93%	57.11%	
25th percentile		45.63%	44.31%	48.47%
50th percentile		57.85%	60.35%	56.69%
75th percentile		65.75%	65.79%	60.48%

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
This measure was not tested with multiple data sources.

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:
This measure was not tested with multiple data sources.

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)*:
This measure was not tested with multiple data sources.

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: The following are the results stratified by patient characterisitcs and site.

	2008	2009	2010			
Race/Ethnicity:						
African American/Caribbean			53.33%	50.17%	54.65%	
White, not Hispanic			56.40%	58.13%	56.27%	
Hispanic	58.14%	54.59%	64.61%			
Other	66.67%	52.00%	65.71%			
Gender:						
Male	55.07%	52.41%	57.31%			
Female	54.05%	54.19%	55.74%			
Transgender		36.36%	62.50%	75.00%		
Age:						
<18	68.75%	66.67%	78.57%			
18-29	47.66%	46.91%	55.22%			
30-49	55.14%	52.40%	55.37%			
50+	57.92%	61.35%	63.29%			
HIV Risk:						
IV Drug Use		52.68%	49.64%	52.23%		
Men Having Sex with Men		57.94%	57.88%	60.67%		
Heterosexual Contact		53.78%	52.67%	55.68%		
Vertical	84.62%	66.67%	71.43%			
Blood	72.73%	22.22%	20.00%			
Other/Unknown		35.96%	25.68%	52.94%		
Insurance:						
Private	52.36%	58.22%	59.24%			
Medicaid		54.74%	51.13%	59.19%		
Medicare		53.15%	54.43%	50.82%		
Dual (Medicare and Medicaid)			60.00%	61.54%	44.44%	
Uninsured		40.24%	46.43%	42.86%		
Ryan White		59.18%	52.05%	58.60%		
Other/Unknown		50.98%	52.17%	58.62%		
Site Type:						
Hospital-based		53.81%	51.29%	55.14%		
Community-based			56.30%	57.27%	63.57%	
Site:						
A	62.38%	63.10%	60.12%			
B	78.57%	68.18%	20.00%			
C	44.00%	37.74%	55.00%			
D	66.15%	63.00%	50.00%			
E	45.45%	39.29%	45.95%			
F	45.05%	50.00%	50.71%			
G	88.89%	66.67%	84.21%			
H	28.97%	18.52%	47.96%			
I	57.69%	55.33%	59.26%			

J 46.15% 57.69% 58.39%
K 58.00% 63.16% 60.61%
L 64.53% 42.41% 20.34%
M 52.54% 69.14% 73.44%
Pediatric Sites (combined) 76.00% 77.27% 95.00%

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:
Not applicable

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?
(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐
Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

C.1 Intended Actual/Planned Use *(Check all the planned uses for which the measure is intended)*: Public Health/Disease Surveillance, Public Reporting, Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3.1 Current Use *(Check all that apply; for any that are checked, provide the specific program information in the following questions)*: Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3a. Usefulness for Public Reporting: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for public reporting.*)

3a.1. Use in Public Reporting - disclosure of performance results to the public at large *(If used in a public reporting program, provide name of program(s), locations, Web page URL(s)).* If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: [*For Maintenance – If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.*]
The technical work group saw utility in publically reporting this data.
This measure may be used by HIV care among Ryan White Program providers. It is currently used a performance measure for a national quality improvement project focused on retention in medical care among people living with HIV. Access to the performance data collected by the national quality improvement project is available for participants enrolled in the project as well as available to the public on the project's website.

Additionally, upon endorsement, the measure developer will seek inclusion in Stage 3 of the Center for Medicare and Medicaid (CMS) Electronic Health Records (EHR) Incentive Programs (Meaningful Use) and Physician Quality Reporting System (PQRS).

3a.2.Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting. If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results: When reviewing the HIV Research Network data by sites, this measure is able to distinguish difference in performance across sites. The top and bottom performing sites for this measure tended to consistently perform as either the top or bottom performer on other measures; however, this measure could identify potential patients that are at risk for retention in care leading to a stronger outcome

for other measures.

This measure is currently being utilized in a national quality improvement project focused on retention in medical care among people living with HIV. As part of this national quality improvement project, Ryan White providers voluntarily agreed to submit data on 4 performance measures, including this measure, every two months. See data below. As each of the measurement periods closes, the performance data submitted by each site are aggregated and report to the project participants via webinar. (Anyone can access the live webinar and the archived webinars.) The project participants have reported that this measure is meaningful to the management of their HIV patient population and understandable by both providers and patients.

Measurement year: 10/1/2010-9/30/2011
Mean (Total Patients): 56.37% (7,532)
Sites Reporting: 187

Measurement year: 12/1/2010-11/30/2011
Mean (Total Patients): 58.08% (8,553)
Sites Reporting: 181

Measurement year: 2/1/2011-1/31/2012
Mean (Total Patients): 58.78% (8,186)
Sites Reporting: 186

Measurement year: 4/1/2011-3/31/2012
Mean (Total Patients): 59.25% (6,469)
Sites Reporting: 146

3.2 Use for other Accountability Functions (payment, certification, accreditation). If used in a public accountability program, provide name of program(s), locations, Web page URL(s): Not applicable

3b. Usefulness for Quality Improvement: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for quality improvement.*)

3b.1. Use in QI. If used in quality improvement program, provide name of program(s), locations, Web page URL(s):
[*For Maintenance – If not used for QI, indicate the reasons and describe progress toward using performance results for improvement*].
This measure is currently used as a performance measure for a national quality improvement project focused on retention in medical care among people living with HIV. Along with submitting performance measure data, the Ryan White providers participating in the project are asked to select one or more of the four performance measures and use it as the basis for a quality improvement project. The project collects improvement strategies tested by each of the participating Ryan White providers and shares the strategies during monthly webinars. The improvement strategies, performance data, archived webinars, list of participating Ryan White providers, and other materials can be found at www.incarecampaign.org/.

3b.2. Provide rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement. If usefulness was demonstrated *(e.g., QI initiative),* describe the data, method and results:
The Ryan White providers who are employing this measure have reported that this measure is meaningful, understandable, and useful for quality improvement activities. This measure is unique in that is responds to the recent literature regarding retention and risk of death and other health outcomes.

Overall, to what extent was the criterion, *Usability*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)

4a. Data Generated as a Byproduct of Care Processes: H☐ M☐ L☐ I ☐

4a.1-2 How are the data elements needed to compute measure scores generated? *(Check all that apply).*
Data used in the measure are:
generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition,
Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)

4b. Electronic Sources: H☐ M☐ L☐ I ☐

4b.1 Are the data elements needed for the measure as specified available electronically *(Elements that are needed to compute measure scores are in defined, computer-readable fields)*: ALL data elements in electronic health records (EHRs)

4b.2 If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources:

4c. Susceptibility to Inaccuracies, Errors, or Unintended Consequences: H☐ M☐ L☐ I ☐

4c.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to prevent, minimize, or detect. If audited, provide results:
To our knowledge, there are no known inaccuracies, errors, or unintended consequences of measurement identified during testing or operational use.

4d. Data Collection Strategy/Implementation: H☐ M☐ L☐ I ☐

A.2 Please check if either of the following apply (*regarding proprietary measures*):
4d.1 Describe what you have learned/modified 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 *(e.g., fees for use of proprietary measures)*:
For the national quality improvement project, this measure had additional exclusions of patients who were incarcerated or transferred care during the measurement year. From the feedback received from a subset of the Ryan White providers who participated in the national quality improvement project, we eliminated these two exclusions (incarceration and transferred during the measurement year). The main reason for the elimination of these exclusions was the inability to electronically code incarceration and transferred in either claims data or electronic health records.

The data used in this measure are readily available and used for other purposes such as payment, meeting reporting requirements for public funding, and disease surveillance. We used the data from 15 sites within the HIV Research Network. These sites have been reporting data to the HIV Research Network for a minimum of 5 years. The HIV Research Network puts forth effort to review for and correct missing or invalid data. We believe the variations in performance across the sites were related to performance and not differences in data availability.

Overall, to what extent was the criterion, *Feasibility*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

OVERALL SUITABILITY FOR ENDORSEMENT

Does the measure meet all the NQF criteria for endorsement? Yes☐ No☐
Rationale:

If the Committee votes No, STOP.
If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.

5. COMPARISON TO RELATED AND 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 before a final recommendation is made.

5.1 If there are related measures *(either same measure focus or target population)* or competing measures *(both the same measure focus and same target population*), list the NQF # and title of all related and/or competing measures:
0403 : HIV/AIDS: Medical Visit

5a. Harmonization

5a.1 If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications completely harmonized? No

5a.2 If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden:
We have used the most current and available set of the National Committee on Quality Assurance (NCQA) measure when we set out to draft this measure. We will continue to work closely with the NCQA to continue to harmonize the measures for the care and treatment of people living with HIV.

5b. Competing Measure(s)

5b.1 If this measure has 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)*:
Mugavero, et al., has published two studies that examined the impact early retention has on patient health outcomes. Early retention in HIV care has been found to be associated with time to viral load suppression and 2-year cumulative viral load burden among patients newly initiating HIV medical care (1). In this study, each "no show" clinic visit conveyed a 17% increased risk of delayed viral load suppression. A dose- response relationship has been shown between constancy of visits during the first year (i.e. having an HIV primary care visit in each 3-month quarter) and survival (2).
Retention in care is crucial in maximizing the health outcomes of people living with HIV. As eloquently outlined by Mugavero, et al., there are several ways to measure retention and engagement with each having its own strengths and limitations (3).
Facilities/Clinic may choose to utilize one or more measures depending on the facility/clinic characteristics, personnel administering the measure (clinician vs. administrator), and/or purpose of the measure (quality improvement, benchmarking, or monitoring). HIV care and treatment as well as performance measures are dynamic systems. As a result, it may be necessary to have more than one measure available for use.

1. Mugavero MJ, Amico KR, Westfall AO, Crane HM, Zinski A, Willig JH, Dombrowski JC, Norton WE, Raper JL, Kitahata MM, Saag MS. Early retention in HIV care and viral load suppression: implications for a test and treat approach to HIV prevention. J Acquir Immune Defic Syndr. 2012 Jan 1; 59(1):86-93.
2. Mugavero MJ, Lin HY, Willig JH, Westfall AO, Ulett KB, Routman JS, Abroms S, Raper JL, Saag MS, Allison JJ. Missed visits and mortality among patients establishing initial outpatient HIV treatment. Clin Infect Dis. 2009 Jan 15;48(2):248-56.
3. Mugavero MJ, Davila JA, Nevin CR, Giordano TP. From Access to Engagement: Measuring Retention in Outpatient HIV Clinical Care. AIDS Patient Care and STDs. October 2010, 24(10): 607-613

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner): Health Resources and Services Administration - HIV/AIDS Bureau, 5600 Fisher Lane, Rockville, Maryland, 20857

Co.2 Point of Contact: Marlene, Matosky, MPH, RN, mmatosky@hrsa.gov, 301-443-0798-

Co.3 Measure Developer if different from Measure Steward: Health Resources and Services Administration - HIV/AIDS Bureau, 5600 Fisher Lane, Rockville, Maryland, 20857

Co.4 Point of Contact: Marlene, Matosky, MPH, RN, mmatosky@hrsa.gov, 301-443-0798-

Co.5 Submitter: Marlene, Matosky, MPH, RN, mmatosky@hrsa.gov, 301-443-0798-, Health Resources and Services Administration - HIV/AIDS Bureau

Co.6 Additional organizations that sponsored/participated in measure development:
The Centers for Disease Control

Co.7 Public Contact: Marlene, Matosky, MPH, RN, mmatosky@hrsa.gov, 301-443-0798-, Health Resources and Services Administration - HIV/AIDS Bureau

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
The work group members determined the measure concepts, identified the data elements, voted on the final measures, and assessed the face validity of the measures.
Bruce Agins, NYS DOH AIDS Institute, New York, NY
Judy Bradford, Fenway Community Health, Boston, MA
John Brooks, CDC, Atlanta, GA
Karen Brudney, Columbia University, New York, NY
Laura Cheever, HRSA HAB, Rockville, MD
Nikki Cockern, Wayne State University, Detroit, MI
Chinazo Cunningham, Montefiore Medical Center, New York, NY
William Cunningham, UCLA, Los Angeles, CA
Julie Dombrowski, University of Washington, Seattle, WA
Edward Gardner, Denver Health, Denver, CO
Elvin Geng, UCSF, San Francisco, CA
Thomas Giordano, Baylor College of Medicine, Houston, TX
Barb Gripshover, Cleveland ACT UP, Cleveland, OH
Deborah Konkle Parker, University of Mississippi, Jackson, MS
Tim Long, Alliance Chicago, Chicago, IL
Cheryl Lynn-Besch, Louisiana State University, New Orleans, LA
Julio Marrero, COSSMA, San Juan, PR
Brian Montague, Brown University, Providence, RI
Karam Mounzer, Philadelphia Fight, Philadelphia, PA
Michael Mugavero, University of Alabama, Birmingham, AL
Sylvia Naar King, Wayne State University, Detroit, MI
Josiah Rich, Brown University, Providence, RI
Allan Rodriguez, Miami University, Miami, FL
Amy Sitapati, UCSD, San Diego, CA
Avnish Tripathi, University of South Carolina, Charleston, SC
Gregory Winstead, Christian Community Health Center, Chicago, IL

Ad.2 If adapted, provide title of original measure, NQF # if endorsed, and measure steward. Briefly describe the reasons for adapting the original measure and any work with the original measure steward: The National Committee on Quality Assurance (NCQA) stewards a related measure NQF 403 medical visits. We have discussed the NQF 403 measure with the NCQA as well as the measures that we are submitting for endorsement. We have used the most current and available set of NCQA measure when we set out to draft this measure. We will continue to work closely with the NCQA to continue to harmonize the measures for the care and treatment of people living with HIV.

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.3 Year the measure was first released:
Ad.4 Month and Year of most recent revision:
Ad.5 What is your frequency for review/update of this measure?

Ad.6 When is the next scheduled review/update for this measure?
Ad.7 Copyright statement:
Ad.8 Disclaimers:
Ad.9 Additional Information/Comments: It is our intention that this measure will be used in quality improvement in addition to public reporting. As it is involved in quality improvement, it is not our intent that the performance goal will be 100%. When we do set the performance goal, we will take into consideration appropriate reasons why the patient may not be able to meet the numerator criterion.
Date of Submission (*MM/DD/YY*): 07/02/2012

VARIABLE DESCRIPTION	FORMAT TYPE	FIELD LENGTH	DEFINITION/ GUIDELINES
Date of Enrollment	Date	MM/15/YYYY	Date of patient's first HIV primary care visit at site. A fixed variable (does not change over time.) Report only month and year with the 15th day of the month.
Visit Date	Date	Date MM/DD/YYYY	Month, Day, Year
Primary Care Visit Type	Numeric	1	Please convert visit type to the associated numeric value. 1 = HIV primary care visit (NOTE: An HIV primary care visit is defined as "a visit with a medical provider – MD, DO, Fellow, Resident, PA, NP - in the HIV clinic") 2 = Nurse 3 = Social Worker 4 = Pharmacist 5 = Case Manager 6 = Nutritionist 8 = Other 0 = Specialty/non-HIV primary care visit type (examples include visits to a dentist, ob/gyn, hepatologist, etc.) 9 = Unknown
Death or Censor	Alpha	1	D = Deceased L = Lost to care, Loss to follow up (12 months)
Date of HIV Diagnosis	Date	MM/01/YYYY	Date of patient's HIV diagnosis. *Note: Required for new patients; optional for existing patients.* Report month and year only using the 1st day of the month.

			(Example: 04/01/1997) If just the year is known, please code as the first of the year (01/01/1997).