NATIONAL QUALITY FORUM

MEASURE WORKSHEET

This document summarizes the evaluation of the measure as it progresses through NQF's Consensus Development Process (CDP). The information submitted by measure developers/stewards is included after the Brief Measure Information, Preliminary Analysis, and Pre-meeting Public and Member Comments sections.

To navigate the links in the worksheet: Ctrl + click link to go to the link; ALT + LEFT ARROW to return

Purple text represents the responses from measure developers.

Red text denotes developer information that has changed since the last measure evaluation review.

Brief Measure Information

NQF #: 2902

Corresponding Measures:

De.2. Measure Title: Contraceptive Care - Postpartum

Co.1.1. Measure Steward: HHS Office of Population Affairs

De.3. Brief Description of Measure: Among women ages 15 through 44 who had a live birth, the percentage that is provided:

1) A most effective (i.e., sterilization, implants, intrauterine devices or systems (IUD/IUS)) or moderately (i.e., injectables, oral pills, patch, or ring) effective method of contraception within 3 and 60 days of delivery.
2) A long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery.

Two time periods are proposed (i.e., within 3 and within 60 days of delivery) because each reflects important clinical recommendations from the Centers for Disease Control and Prevention (CDC) and the American College of Obstetricians and Gynecologists (ACOG). The 60-day period reflects ACOG recommendations that women should receive contraceptive care at the 6-week postpartum visit. The 3-day period reflects CDC and ACOG recommendations that the immediate postpartum period (i.e., at delivery, while the woman is in the hospital) is a safe time to provide contraception, which may offer greater convenience to the client and avoid missed opportunities to provide contraceptive care.

1b.1. Developer Rationale: Unintended pregnancies and interpregnancy intervals of less than 18 months have been associated with poor perinatal outcomes such as preterm birth, low birth weight, small size for gestational age, as well as adverse maternal outcomes [1, 2]. Studies among U.S. women report that women at younger maternal age are at higher risk for unintended pregnancy [14] and older maternal age is associated with closely spaced pregnancies [15]. Contraception is a highly effective clinical preventive service that can assist women in reaching their reproductive health goals, like reducing unintended

pregnancies and the percentage of births occurring within 18 months of a previous birth [3, 4]. The type of contraceptive method used by a woman is strongly associated with her risk of unintended pregnancy [3-6]. The most effective methods (LARC and sterilization) have a failure rate that is less than 1% per year under typical use [4]. The moderately effective methods (injectable, pill, patch, ring) have a typical failure rate of 4-7% per year, while the less effective methods have a typical failure rate of 13-27% [4]. One recent analysis also indicates that the most used contraceptive methods in the United States have experienced reductions in their typical use failure rates [24]. Not using any method at all has a failure rate of 85% [4].

After NQF endorsed #2902 in 2016, OPA published multiple articles in peer-reviewed journals to inform providers delivering care in public and private settings (e.g., commercial health plans, Medicaid, community health centers, free-standing reproductive health clinics) about the new measure. These publications outline our conceptual framework for developing #2902 alongside its two complementary measures (NQF #2903 and #2904) and emphasize appropriate measure implementation and use. Furthermore, OPA highlighted systematic reviews which indicate that effective contraceptive method use increases the interbirth interval and reduces adolescent and unintended pregnancies. This association between use of effective contraception and positive reproductive health outcomes demonstrates the importance of contraceptive care measures to health care quality [25-27].

Because some contraceptive methods are more effective than others in preventing unintended pregnancy and in spacing births among postpartum women who wish to delay pregnancy, NQF #2902 focuses on utilization of these contraceptive methods among women within 3 and 60 days of delivery. The measure calculates contraceptive provision at two separate postpartum periods because current clinical guidelines offer recommendations related to both lengths of time after delivery. The 60-day period reflects ACOG recommendations that women should obtain contraceptive care at the 6-week postpartum visit [17]; AAP and CDC also recommend postpartum contraceptive provision and describe how it can be done so safely (see evidence report for details) [8-12]. The 3-day period reaffirms CDC and ACOG recommendations that the immediate postpartum period (i.e., at delivery, while the woman is at the hospital) is a safe and particularly effective time for women to obtain contraception if they desire it. Initiating use of contraception immediately postpartum can be convenient for the client since they are accessing health care services at the hospital post-delivery. Because some women may not attend a postpartum visit, inpatient contraceptive initiation can prevent missed opportunities to provide contraceptive care [17].

Many states have addressed barriers to postpartum LARC insertion in their Medicaid programs (i.e., by reimbursing separately for LARC in the immediate postpartum period, outside of the bundled delivery payment); in 2016 HHS CMS released an Information Bulletin describing the postpartum LARC payment and policy strategies employed by state Medicaid agencies at that time [18, 19]. The cost effectiveness of this practice for payers has been documented as well [20-22]. Given this context, we expect that use of NQF #2902 will continue to encourage more providers to follow ACOG [7, 17] and CDC [11, 12] recommendations to deliver patient-centered counseling about postpartum contraception to clients during prenatal care and at the postpartum visit. For women who want to use contraception after delivery, providers should discuss the possibility of obtaining LARC and the full range of contraceptive methods in the immediate postpartum period, the effectiveness of the different methods, and other factors that may help a woman select the method that is best for her [11]. Providers should advocate to make LARC available in the immediate postpartum inpatient setting or on a same-day basis in postpartum outpatient care [7, 23].

Thus, NQF #2902 is designed to encourage providers to offer those clients seeking contraception the full range of methods. For the NQF #2902 primary measure, OPA has not set a benchmark for it and does not expect scores to reach 100%. OPA also emphasizes that the NQF #2902 LARC sub-measure should not be used to encourage high utilization rates and that it would be an inappropriate measure to implement in a pay-for-performance context. This sub-measure aims to ensure access to LARC methods in the postpartum period by monitoring very low rates of provision (i.e., below 2%). The goal of providing contraception should never be to recommend any one method or class of methods over women's individual choices. Women who want to delay or prevent pregnancy after a recent live birth delivery should have access to a broad range of contraceptive methods, preferably on a same-day, on-site basis. Furthermore, it is important that these contraceptive services are provided in a client-centered manner that treats each person as a unique individual with respect, empathy, and understanding, providing accurate, easy-to-understand information based on the client's self-identified needs, goals, preferences, and values [11]. Patients receiving client-centered care may feel motivated to continue seeking reproductive health care for contraception and if they become pregnant, prenatal care and birth [13]. Thus, efforts to provide client-centered contraceptive services aligned with American Academy of Pediatrics (AAP), ACOG, and CDC, and OPA recommendations [7-12] may be strengthened by quality improvement processes based on standardized metrics of contraceptive care provision.

References

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S.4. Numerator Statement: Primary measure: Women ages 15 through 44 who had a live birth and were provided a most (sterilization, implant, intrauterine device) or moderately (injectable, pill, patch, or ring) effective method of contraception within 3 and 60 days of delivery.

Sub-measure: Women ages 15 through 44 who had a live birth and were provided a long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery.

S.6. Denominator Statement: Women ages 15 through 44 who had a live birth in a 12-month measurement year.

S.8. Denominator Exclusions: The following categories are excluded from the denominator: (1) deliveries that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth or induced abortion); and (2) deliveries that occurred during the last two months of the measurement year.

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

S.17. Data Source: Claims

S.20. Level of Analysis: Clinician : Group/Practice, Health Plan, Population : Regional and State

IF Endorsement Maintenance – Original Endorsement Date: Oct 25, 2016 **Most Recent Endorsement Date:** Oct 25, 2016

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

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

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? Although not a requirement, two other measures have been submitted for maintenance endorsement in separate applications that are complementary to this measure and, if reported together, would provide a broader perspective on the quality of contraceptive services. The

two other measures are focused on: (1) provision of most and moderately effective methods of contraception among all women at risk (not just postpartum women), and (2) long-acting reversible contraceptive methods (LARC) among all women at risk (not just postpartum women).

Preliminary Analysis: Maintenance of Endorsement

To maintain NQF endorsement endorsed measures are evaluated periodically to ensure that the measures still meets the NQF endorsement criteria ("maintenance"). The emphasis for maintaining endorsement is focused on how effective the measure is for promoting improvements in quality. Endorsed measures should have some experience from the field to inform the evaluation. The emphasis for maintaining endorsement is noted for each criterion.

Criteria 1: Importance to Measure and Report

1a. Evidence

Maintenance measures – less emphasis on evidence unless there is new information or change in evidence since the prior evaluation.

1a. Evidence. The evidence requirements for a ***structure, process or intermediate outcome*** measure is that it is based on a systematic review (SR) and grading of the body of empirical evidence where the specific focus of the evidence matches what is being measured. For measures derived from patient report, evidence also should demonstrate that the target population values the measured process or structure and finds it meaningful.

The developer provides the following evidence for this measure:

- **Systematic Review of the evidence specific to this measure?** ☒ **Yes** ☐ **No**
- **Quality, Quantity and Consistency of evidence provided?** ☒ **Yes** ☐ **No**
- **Evidence graded?** ☒ **Yes** ☐ **No**

Summary of prior review in 2016

- The developer provided robust summaries of clinical practice guideline recommendations and other systematic reviews (SR). This evidence included data developed through randomized control trials (RCTs) and meta-analyses. The developer reported that the evidence showed support for contraceptive effectiveness and its impact on unintended pregnancies.

Changes to evidence from last review

☐ **The developer attests that there have been no changes in the evidence since the measure was last evaluated.**

☒ **The developer provided updated evidence for this measure:**

Updates:

- The developer cited a robust number of guidelines and a conceptual framework in support of the measure. These included guidelines from the Centers for Disease Control (CDC), the HHS Office of Population Affairs (OPA), American College of Obstetricians and Gynecologists (ACOG), and the Health Resources and Services Administration (HRSA).

- To support the calculation of the LARC sub-measure for within 3 and 60 days of delivery, the developer provided evidence that immediate postpartum LARC insertion leads to increased utilization of this contraceptive method. The provision of LARC and most and moderately effective methods are both calculated within 3 and 60 days of delivery.
- The use of a diaphragm was removed from the moderate effective contraceptive list.

Exception to evidence

- Does the Committee want to discuss how patient choice for no, over the counter (OTC), or lower effective contraceptives are captured in the measure?
- Does the evidence support excluding deliveries that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth or induced abortion) where contraceptives may be applicable?

Questions for the Committee:

- The evidence provided by the developer is updated, directionally the same, and stronger compared to that for the previous NQF review. Does the Committee agree there is no need for repeat discussion and vote on Evidence?
- Is the evidence directly applicable to the process of care being measured?
- Does the Committee agree with removing diaphragm from the list of moderate contraceptive methods?
- If derived from patient report, does the target population value the measured process or structure and find it meaningful?

Guidance from the Evidence Algorithm

Measure does not assess a health outcome or PRO (Box 1) → Measure assesses an intermediate clinical outcome based on an SR and grading of the evidence (Box 3) → A summary of the quantity, quality, and consistency (QQC) of the body of evidence is provided (Box 4) → The summary includes high quality, quantity, and consistency of evidence are high and the net benefit is substantial and outweighs undesirable effects (Box 5a) → High

The highest possible rating is high.

Preliminary rating for evidence: ☒ **High** ☐ **Moderate** ☐ **Low** ☐ **Insufficient**

1b. Gap in Care/Opportunity for Improvement and 1b. Disparities

Maintenance measures – increased emphasis on gap and variation

1b. Performance Gap. The performance gap requirements include demonstrating quality problems and opportunity for improvement. [Gap data]

- The developer provided gap data for several data sets used in measure testing. All available data showed increased scores from 3-days postpartum to 60-days post-partum.
- Performance data was provided for the following levels of analysis: Clinician group/practice, Facility, Health Plan, Public Health Region, and State from eight different programs. For example:
    - The developer stated that, "#2902 was reported for the first time in CMS's Adult and Child Core Set and then again in FFY 2019." The developer reported the following data from the Centers for Medicaid & Medicare Services (CMS): Maternal and Infant Health

Initiative, Core Measure Set. Measure scores from additional data sets are reported in answer to question 1b.2 below. The data illustrate an increase in scores across years and across days post-partum.

- FFY 2018:
  - 3-days postpartum - 15-20 (3.4%) and 21-44 (10.6%)
  - 60-days postpartum - 15-20 (40.8%) and 21-44 (39.4%)
- FFY 2019
  - 3-days postpartum - 15-20 (4.1%) and 21-44 (1.3%)
  - 60-days postpartum - 15-20 (41.8%) and 21-44: 40.2%

Disparities

- The developer analyzed 2018 data from the Washington State Health Care Authority to examine disparities and reported for:
  - Overall measure scores ages 15-20 by race/ethnicity - Hispanic: 24.4, White: 37.2, Asian: 19.4, Black: 24.5, American Indian/Alaska Native: 33.7, Hawaiian/Pacific Islander: 18.9, More than One Race: 34.9, and Other/Unknown: 23.7
  - Overall measure scores ages 21-44 by race/ethnicity - Hispanic: 33.1, White: 27.0, Asian: 26.0, Black: 26.1, American Indian/Alaska Native: 24.6, Hawaiian/Pacific Islander: 23.6, More than One Race: 29.9, and Other/Unknown: 26.9
  - Sub-measure scores ages 15-20 by race/ethnicity - Hispanic: 24.7, White: 17.5, Black: 17.7, American Indian/Alaska Native: 18.6, More than One Race: 15.8, Other/Unknown: 13.9, Asian and Hawaiian/Pacific Islander were suppressed due to small numbers
  - Sub-measure scores ages 21-44 by race/ethnicity - Hispanic: 20.1, White: 13.2, Asian: 13.2, Black: 14.8, American Indian/Alaska Native: 9.8, Hawaiian/Pacific Islander: 10.7, More than One Race: 13.9, and Other/Unknown: 13.0.
- Evidence also demonstrates health disparities for 6-week postpartum visits, which impacts performance for providing the 60-day method of contraception.

Questions for the Committee:

- Is there a gap in care that warrants a national performance measure?
- Should the measure be stratified considering the disparities results?

Preliminary rating for opportunity for improvement: ☐ **High** ☒ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee Pre-evaluation Comments:
Criteria 1: Importance to Measure and Report (including 1a, 1b, 1c)

1a. Evidence to Support Measure Focus: For all measures (structure, process, outcome, patient-reported structure/process), empirical data are required. How does the evidence relate to the specific structure, process, or outcome being measured? Does it apply directly or is it tangential? How does the structure, process, or outcome relate to desired outcomes? For maintenance measures –are you aware of any new studies/information that changes the evidence base for this measure that has not been cited in the submission? For measures derived from a patient report: Measures derived from a patient report must demonstrate that the target population values the measured outcome, process, or structure.

- strong evidence
- Strong evidence is outlined. I think we should discuss why pregnancies that did end in a live birth are not included - I think those are important patients to capture. I think there needs to be an additional measure created about peripartum contraceptive counseling (during and after pregnancy - so prenatal and postpartum visits, which are multiple visits and multiple providers), which would help to address coercion/directiveness towards/against pregnant people. I agree that diaphragm should be removed from moderately effective.
- Yes
- 1) Is there evidence to support excluding pregnancies ending in a live birth but not pregnancies that ended in other ways? It seems reasonable to treat all pregnancies the same, either include or exclude all, regardless of how they ended. 2) I agree with removing diaphragm from the list of moderately effective methods.
- The evidence supports contraceptive effectiveness and importance of measure
- Evidence supports the intermediate clinical outcomes. Not aware of additional studies.
- evidence acceptable

1b. Performance Gap: Was current performance data on the measure provided? How does it demonstrate a gap in care (variability or overall less than optimal performance) to warrant a national performance measure? Disparities: Was data on the measure by population subgroups provided? How does it demonstrate disparities in the care?

- significant gaps with racial disparities
- For "FFY 2019- 21-44 (1.3%)" Is this a typo? Was it increased to 13%? I think the gaps demonstrate a need for this national measure.
- Yes
- I am not clear that the measure is able to adequately differentiate performance gaps and disparities vs. differences in patient choice due to cultural and other factors.
- Performance gap in care demonstrates opportunity for improvement.
- Performance data including data related to disparities provided and gap in care demonstrated.
- yes gap demonstrated

Criteria 2: Scientific Acceptability of Measure Properties

2a. Reliability: Specifications and Testing

2b. Validity: Testing; Exclusions; Risk-Adjustment; Meaningful Differences; Comparability; Missing Data

2c. For composite measures: empirical analysis support composite approach

Reliability

2a1. Specifications requires the measure, as specified, to produce consistent (reliable) and credible (valid) results about the quality of care when implemented. For maintenance measures – no change in emphasis – specifications should be evaluated the same as with new measures.

2a2. Reliability testing demonstrates if the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise enough to distinguish differences in performance across providers. For maintenance measures – less emphasis if no new testing data provided.

Validity

2b2. Validity testing should demonstrate the measure data elements are correct and/or the measure score correctly reflects the quality of care provided, adequately identifying differences in quality. For maintenance measures – less emphasis if no new testing data provided.

2b2-2b6. Potential threats to validity should be assessed/addressed.

Composite measures only:

2d. Empirical analysis to support composite construction. Empirical analysis should demonstrate that the component measures add value to the composite and that the aggregation and weighting rules are consistent with the quality construct.

Complex measure evaluated by Scientific Methods Panel? ☒ **Yes** ☐ **No**

Evaluators: NQF Scientific Methods Panel Subgroup 3

Methods Panel Review (Combined)

Methods Panel Evaluation Summary:

This measure was reviewed by the Scientific Methods Panel, a summary of the measure and the Panel discussion is provided below.

Reliability

- The developer states that *#2903* Contraceptive Care – Most & Moderately Effective Methods and *#2904* Contraceptive Care - Access to LARC are complementary measures to this measure. The developer excludes patients with a pregnancy that did not end with a live birth in *#2902*, but not *#2903* and *#2904*. The developer emphasizes the measure is not to be used in pay for performance programs.
- As the measure intends to assess the number of live birth (rather than the number of women with live births, the developer may wish to change the language of the measure to capture more than one live birth in the measurement period.

- The level of analysis for the measure is group/practice, health plan, and population: regional and state. No facility-level is checked or tested for the 3-day time parameter.
- Deliveries that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth or induced abortion) are excluded from the measure, where contraceptives may be applicable.
- The majority of SMP members voted moderate on reliability of the measure and found the specifications to be clear.
- The developer provided testing at the clinician group/practice, health plan, and state/public health region levels.
- The developer used a beta-binomial model using parametric empirical Bayes methods to test reliability of the measure. Members found the testing approach and methods to be reasonable.
- Multiple members suggested that a minimum sample size be established for the measure to reach adequate reliability results for reporting entities, although no sample requirement is defined in the specification.
- Results are generally moderate, depending upon the region (state) being discussed, the type of contraception, and age group. Results are not "pooled" across all geographical regions, although testing seeks reliability estimates for different regions, levels of reporting, contraception method, and age groups.

Validity

- The majority of SMP members voted moderate on validity of the measure.
- The developer provided empirical and face validity testing of the measure score using a novel alternative approach to Pearson's.
- Face validity of nine experts was conducted to distinguish good versus poor quality care: MOST/MOD (mean 4.22, median 4.5), LARC (mean 3.78, median 4).
- For empirical validity testing, developers employed a novel multilevel correlation estimation method to test the relationship between the contraceptive care measure and the related measures (timeliness of prenatal care and postpartum care measures). Members did not have concerns about using this alternative method to demonstrate validity and did not have strong concerns with the moderate correlations presented.
- An SMP reviewer noted the measure might assume what patients want, may want, or the timing of contraceptive decision making inappropriately, which could compromise validity. The measure does not appear to take into account patients who refuse contraception or to use over the counter or lower effective methods of contraception (e.g., rhythm method).
- Empirical validity testing was not conducted for health plans and populations. The developer noted this was due to the limited numbers of units ($n \leq 21$) at these levels which are not sufficient for correlation testing.
- Regarding exclusions, one member had concerns about the exclusion of patients giving birth in the final two months of the measurement year. A number of SMP members recommended a rolling 12-month look back for the performance period.
- The developer provided additional explanation for this exclusion. Namely, that measurement of the most and moderate contraceptive provisions after 60 days is not possible within the measurement year for live births taking place in the final two months of the year. Therefore, the

developer reported that exclusion of these births was necessary to align with ACOG recommendations regarding the timing of the post-partum care visit.

- Multiple members had concerns with the testing results for exclusions. Specifically, the low sensitivity.

Questions for the Committee regarding reliability:

- Do you have any concerns that the measure about the lack of minimum sample size (i.e., are measure specifications adequate)?
- The Scientific Methods Panel is satisfied with the reliability testing for the measure. Does the Committee think there is a need to re-vote on reliability?

Questions for the Committee regarding validity:

- Do you have any concerns regarding the construct validity testing of the measure?
- Do you have any concerns regarding the exclusions in the measure?
- The Scientific Methods Panel is satisfied with the validity analyses for the measure. Does the Committee think there is a need to re-vote on validity?

Preliminary rating for reliability:	☐ **High**	☒ **Moderate**	☐ **Low**	☐ **Insufficient**
Preliminary rating for validity:	☐ **High**	☒ **Moderate**	☐ **Low**	☐ **Insufficient**

Committee Pre-evaluation Comments:

Criteria 2: Scientific Acceptability of Measure Properties (including all 2a, 2b, and 2c)

2a1. Reliability-Specifications: Which data elements, if any, are not clearly defined? Which codes with descriptors, if any, are not provided? Which steps, if any, in the logic or calculation algorithm or other specifications (e.g., risk/case-mix adjustment, survey/sampling instructions) are not clear? What concerns do you have about the likelihood that this measure can be consistently implemented?

- moderate
- Since the scientific methods panel was satisfied with reliability and validity, I don't think the committee needs to re-vote. As I mentioned above, I think we should discuss the exclusions.
- none
- As noted above, I have concerns regarding the exclusions in this measure. I have no other concerns.
- No concerns
- Data elements clearly defined and i have no concerns.
- may have trouble getting hospital birth control data since deliveries are paid through DRG and may not have granular data

2a2. Reliability - Testing: Do you have any concerns about the reliability of the measure?

- moderate
- No - as I explained above.
- No
- No concerns.
- No concerns
- No concerns.
- see above

2b1. Validity - Testing: Do you have any concerns with the testing results?

- moderate
- No - as I explained above.
- No
- No concerns.
- no concerns
- No concerns
- No

2b4-7. Threats to Validity (Statistically Significant Differences, Multiple Data Sources, Missing Data) 2b4. Meaningful Differences: How do analyses indicate this measure identifies meaningful differences about quality? 2b5. Comparability of performance scores: If multiple sets of specifications: Do analyses indicate they produce comparable results? 2b6. Missing data/no response: Does missing data constitute a threat to the validity of this measure?

- moderate
- Missing data will also be a threat to validity, but I think it is okay for this measure.
- No
- Is it possible to use a rolling 12-month look-back period for this measure to avoid excluding pregnancies that ended in the last 2 months of the year?
- Measure uses claims data so no concerns.
- No concerns, claims data.

- ? re inpatient coding with rise of PP iUD

2b2-3. Other Threats to Validity (Exclusions, Risk Adjustment) 2b2. Exclusions: Are the exclusions consistent with the evidence? Are any patients or patient groups inappropriately excluded from the measure? 2b3. Risk Adjustment: If outcome (intermediate, health, or PRO-based) or resource use performance measure: Is there a conceptual relationship between potential social risk factor variables and the measure focus? How well do social risk factor variables that were available and analyzed align with the conceptual description provided? Are all of the risk-adjustment variables present at the start of care (if not, do you agree with the rationale provided)? Was the risk adjustment (case-mix adjustment) appropriately developed and tested? Do analyses indicate acceptable results? Is an appropriate risk-adjustment strategy included in the measure?

- n/a
- I would like to discussion the exclusions as a group.
- Yes
- Concerns regarding exclusions/inclusions of pregnancies regardless of how they end as noted above.
- Developer explained why risk adjustment not needed.
- Justification provided for no risk adjustment. No concerns
- process, no risk adjustment needed

Criterion 3. Feasibility

Maintenance measures – no change in emphasis – implementation issues may be more prominent

3. **Feasibility** is the 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.
    - The developer reports that the measure is coded by someone other than the person obtaining the original information.
    - The developer reports that all data elements are in defined fields in electronic administrative claims. The developer also reports that there is ongoing work with UCSF to develop an eCQM version of this measure.
    - The measure developer participated in a MIHI grant program to develop the measure and identified several important lessons from this collaborative work:
        - The co-design process for measure development increased feasibility of the measure.
        - Measure users found calculation of the measure time-consuming. Technical assistance is available from OPA for measure users, and OPA is exploring ways to improve efficiency.

Questions for the Committee:

- Do you have concerns about the measure users' experiences with calculating the measure?

Preliminary rating for feasibility: ☒ **High** ☐ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee Pre-evaluation Comments:

Criteria 3: Feasibility

3. **Feasibility: Which of the required data elements are not routinely generated and used during care delivery? Which of the required data elements are not available in electronic form (e.g., EHR or other electronic sources)? What are your concerns about how the data collection strategy can be put into operational use?**

- highly feasible
- No concerns. High feasibility.
- None
- Measure users found calculation of the measure time-consuming, which could lead to low use of the measure, despite TA from OPA available.
- No concerns, claims data
- No concerns, claims data.
- see data concerns above

Criterion 4: Usability and Use

Maintenance measures – increased emphasis – much greater focus on measure use and usefulness, including both impact/improvement and unintended consequences

4a. Use (4a1. Accountability and Transparency; 4a2. Feedback on measure)

4a. Use evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

4a.1. 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.

Current uses of the measure

Publicly reported? ☒ **Yes** ☐ **No**

The measure is currently used in public reporting, for internal quality improvement for the following:

Public Reporting

- Center for Medicaid and CHIP Services, https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Quality-of-Care/Maternal-and-Infant-Health-Care-Quality.html
- Iowa Medicaid Enterprise, https://dhs.iowa.gov/ime/members/medicaid-a-to-z
- Louisiana Medicaid, https://qualitydashboard.ldh.la.gov/
- MassHealth. https://www.mass.gov/orgs/masshealth
- Washington State Health Care Authority, https://www.hca.wa.gov/about-hca/reproductive-health
- Title X Family Planning Program, https://rhntc.org/resources/contraceptive-access-change-package

Current use in an accountability program? ☒ **Yes** ☐ **No** ☐ **UNCLEAR**

Accountability program details

The developer states the measure is included the NQF Core Quality Measure Collaborative (CQMC) led by CMS/AHIP at the clinician/group level in outpatient settings.. http://www.qualityforum.org/cqmc/. See Public Reporting details for Accountability information.

4a.2. Feedback on the measure by those being measured or others. Three criteria demonstrate feedback: 1) those being measured have been given performance results or data, as well as assistance with interpreting the measure results and data; 2) those being measured and other users have been given an opportunity to provide feedback on the measure performance or implementation; 3) this feedback has been considered when changes are incorporated into the measure

Feedback on the measure by those being measured or others

- In FFY 2018, CMS began publicly reporting rates among both age groups for 31 states. Public reporting has continued since then.
- OPA has published multiple peer-reviewed articles on the appropriate implementation and use of the measure.
- OPA publishes information on its website to help implementors appropriately use and understand the limitations of the measure.
- OPA manages two email addresses to field questions from measure users. CMS and NCQA also forward questions that they receive to these addresses. As a CMS contractor, Mathematica Policy Research also collects feedback and answers user questions.
    - Questions have included input on various unexpected issues with certain coding systems, how to deal with states' differences in coding systems, and recommendations for stratification of the measure.
    - Feedback from these programs have significantly contributed to updates for the measure.
- OPA has worked with Association of State and Territorial Health Officials (ASTHO) and Planned Parenthood Federation of America (PPFA) to disseminate information about the measure and a guide on stratification of the measure.
- OPA has incorporated suggested codes as identified by measure users in the measure specifications.

Additional Feedback:

- The measure has been included in the Core Quality Measures Collaborative (CQMC) Consensus Core Set: Obstetrics and Gynecology.

***Questions for the Committee**:*

- How have the performance results been used to further the goal of high-quality, efficient healthcare?

Preliminary rating for Use: ☒ **Pass** ☐ **No Pass**

4b. Usability (4a1. Improvement; 4a2. Benefits of measure)

4b. Usability evaluate the extent to which audiences (e.g., consumers, purchasers, providers, policymakers) use or could use performance results for both accountability and performance improvement activities.

4b.1 Improvement. Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated.

Improvement results

- The developer reports that results show continued room for improvement, especially in LARC provision 3-days postpartum as compared to 60-days postpartum. Limited improvement suggests that barriers remain for women during the post-partum period.
- When discussing improvement, OPA again stresses that there is no specific benchmark for the primary measure because some women will not choose a most or moderately effective method for a number of reasons not related to quality of care.

4b2. Benefits vs. harms. 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).

Unexpected findings (positive or negative) during implementation

- No unexpected findings have been reported since initial endorsement.

Potential harms

- The developer reports that they remind measure users of the potential for coercive care practices in response to this measure. Measure users should not strive for a particular benchmark.
- Although not yet tested in pregnant patients, the developer believes that use of balancing measure #3543 will promote person-centered contraceptive care and post-partum LARC utilization. The developer reports that research in the pregnant population is warranted.

Additional Feedback:

- The measure has been included in the Core Quality Measures Collaborative (CQMC) Consensus Core Set: Obstetrics and Gynecology

***Questions for the Committee**:*

- Do the benefits of the measure outweigh any potential unintended consequences?

Preliminary rating for Usability and use: ☒ **High** ☐ **Moderate** ☐ **Low** ☐ **Insufficient**

Committee Pre-evaluation Comments:
Criteria 4: Usability and Use

4a1. Use - Accountability and Transparency: How is the measure being publicly reported? Are the performance results disclosed and available outside of the organizations or practices whose performance is measured? For maintenance measures - which accountability applications is the measure being used for? For new measures - if not in use at the time of initial endorsement, is a credible plan for implementation provided? 4a2. Use - Feedback on the measure: Have those being measured been given performance results or data, as well as assistance with interpreting the measure results and data? Have those being measured or other users been given an opportunity to provide feedback on the measure performance or implementation? Has this feedback has been considered when changes are incorporated into the measure?

- yes
- Measures have been publicly reported - seems to help.
- Yes
- No concerns.
- Feedback obtained and incorporated.
- No concerns
- in use as a measurement

4b1. Usability – Improvement: How can the performance results be used to further the goal of high-quality, efficient healthcare? If not in use for performance improvement at the time of initial endorsement, is a credible rationale provided that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations? 4b2. Usability – Benefits vs. harms: Describe any actual unintended consequences and note how you think the benefits of the measure outweigh them.

- yes
- I think all potential harms have been laid out in the evaluation worksheet.
- Potential coercive practices for minority populations
- Additional guidance may be needed to learn how this measure can be used to set performance improvement targets.
- No harms identified
- Benefits outweigh harm
- need to watch for coercive overzealous prescribing

Criterion 5: Related and Competing Measures

Related or competing measures

- 1517: Prenatal & Postpartum Care (PPC)
- 2903: Contraceptive Care – Most & Moderately Effective Methods
- 2904: Contraceptive Care - Access to LARC
- 3543: Person-Centered Contraceptive Counseling (PCCC) measure

Harmonization

- The developer reports that these related measures are harmonized to the extent possible.
- Namely, measures #2903 and #2904 are complementary to this measure.
    - #2903 focuses on most or moderately effective contraceptive provision in all women of reproductive age
    - #2904 focuses on LARC provision only in all women of reproductive age

Committee Pre-evaluation Comments: Criterion 5: Related and Competing Measures

5. Related and Competing: Are there any related and competing measures? If so, are any specifications that are not harmonized? Are there any additional steps needed for the measures to be harmonized?

- 1517, 2903, 2904
- "Although not yet tested in pregnant patients, the developer believes that use of balancing measure #3543 will promote person-centered contraceptive care and post-partum LARC utilization. The developer reports that research in the pregnant population is warranted." I agree.
- Yes, But measures are complementary
- Are there ways that this measure can be harmonized with the #3543: Person-Centered Contraceptive Counseling (PCCC) measure?
- No

Public and Member Comments

Comments and Member Support/Non-Support Submitted as of: 06/29/2021

- No NQF Members have submitted support/non-support choices as of this date.
- No Public or NQF Member comments submitted as of this date.

Combined Methods Panel Scientific Acceptability Evaluation

Measure Number: 2902

Measure Title: Contraceptive Care - Postpartum

RELIABILITY: SPECIFICATIONS

1. **Are submitted specifications precise, unambiguous, and complete so that they can be consistently implemented?** ☒ **Yes** ☐ **No**

   Submission document: "MIF_2902" document, items S.1-S.22

   ***NOTE**: NQF staff will conduct a separate, more technical, check of eCQM specifications, value sets, logic, and feasibility, so no need to consider these in your evaluation.*

2. **Briefly summarize any concerns about the measure specifications.**

   Panel Member 1: None.

Panel Member 3: Specifications are clear, but a few clarifications would be helpful. The following attachment was not provided: NQF_2902_Codes_2021.xlsx It is not clear what the nature of the hierarchical structure of the primary and sub-measure is. What impact on the score does this structure have? No justification was provided for excluding deliveries that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth or induced abortion). Aren't these women also at risk of having unintended pregnancies with its associated poor outcomes? The exclusion of the last two months of the calendar year is not well justified. Could developers consider the measurement year starting from births occurring from Nov 1st of the previous year to not trim out 2/12 months of information? The level of analyses specified (Clinician : Group/Practice, Health Plan, Population : Regional and State) does not match the levels reported in the testing form (group/practice, health plan, public health region). Please clarify this and for which of these levels was the measure specified.

Panel Member 4: Excel Spreadsheet of codes is not included. Question as to whether continuous enrollment is an issue and probably should clarify.

Panel Member 5: No Concerns

Panel Member 6: none

Panel Member 8: None

RELIABILITY: TESTING

Type of measure:

☐ **Outcome (including PRO-PM)** ☒ **Intermediate Clinical Outcome** ☒ **Process**

☐ **Structure** ☐ **Composite** ☐ **Cost/Resource Use** ☐ **Efficiency**

Data Source:

☐ **Abstracted from Paper Records** ☒ **Claims** ☐ **Registry**
☐ **Abstracted from Electronic Health Record (EHR)** ☐ **eMeasure (HQMF) implemented in EHRs**
☐ **Instrument-Based Data** ☐ **Enrollment Data** ☐ **Other (please specify)**

Level of Analysis:

☐ **Individual Clinician** ☒ **Group/Practice** ☐ **Hospital/Facility/Agency** ☒ **Health Plan**
☒ **Population: Regional, State, Community, County or City** ☐ **Accountable Care Organization**
☐ **Integrated Delivery System** ☒ **Other (please specify)**

Panel Member 3: public health region
Panel Member 5: public health region

Measure is:

☐ **New** ☒ **Previously endorsed (**NOTE: Empirical validity testing is expected at time of maintenance review; if not possible, justification is required.)

Submission document: "MIF_2902" document for specifications, testing attachment questions 1.1-1.4 and section 2a2

3. **Reliability testing level** ☒ **Measure score** ☐ **Data element** ☐ **Neither**

4. **Reliability testing was conducted with the data source and level of analysis indicated for this measure ☒ Yes ☐ No**
5. If score-level and/or data element reliability testing was NOT conducted or if the methods used were NOT appropriate, was **empirical VALIDITY testing** of **patient-level data** conducted?

   ☐ **Yes** ☐ **No**
6. **Assess the method(s) used for reliability testing**

   Submission document: Testing attachment, section 2a2.2

   Panel Member 1: Calculated a signal-to-noise statistic for all three levels of the measure specification.

   Panel Member 2: The developer assessed measure score reliability via a beta-binomial model using parametric empirical Bayes methods, which is appropriate for this type of measure.

   Panel Member 3: Methods should be appropriate. However, a detailed description of the method used for reliability testing was supposed to be demonstrated in the Appendix, but I could not locate it within the submission materials.

   Panel Member 4: Reliability was estimated from a Beta-binomial model using parametric empirical Bayes methods.

   Panel Member 5: Reliability was estimated from a Beta-binomial model using parametric empirical Bayes methods. Two distributional shape parameters (alpha and beta) were estimated from the observed quality scores, and reliability was then calculated as a function of alpha, beta, and total patient count for each unit of analysis. Overall reliability in this context represents the ability of the proposed measure to confidently distinguish the performance of one entity (e.g., facility) from another. analyses at three levels (public health region, group billing provider, and health plan), stratified by three age categories (15-20, 21-44, 15-44 years).

   Panel Member 6: Data source is claims from Iowa Medicaid, CMS dataset for Texas, Washington State Health Care Authority, Massachusetts Health Dataset, and Louisiana Medicaid Dataset. A signal to noise approach was taken to assess reliability at three levels: public health region, group billing provider, and health plan. For each of levels in each of the regions, reliability statistics were calculated, when appropriate to the region. Targeted was greater than .90 for high-stakes decision and greater than .70 for reporting and monitoring. Results are given for each of the areas, for the types of contraception available to that population and the data available.

   Panel Member 7: OK - beta binomial, empirical Bayes with "two distributional shapes parameters"; assume min-75 regardless of level of analysis

   Panel Member 8: A signal-to-noise (SNR) method was used to assess reliability at the facility level. It would have been good perhaps to also include a split-sample or stability of classification (e.g., deciles) analysis.
7. **Assess the results of reliability testing**

   Submission document: Testing attachment, section 2a2.3

   Panel Member 1: Reliability statistics are generally quite good (>0.70) unless the median patient population is small. The measure appears less reliable in group practices with small numbers.

   Panel Member 2: Overall, reliability results were excellent for measure at facility, public health region, and health plan level. The results at group billing provider level were poor, however, for providers with at least 75 case counts, the reliability results were also excellent. This measure is not

specified for group/practice, so this is not concerning. It will be important to establish a volume threshold for reporting if this is reported at group/practice level.

Panel Member 3: I have no concerns regarding the reliability results.

Panel Member 4: The method used seems appropriate however, given that the minimum sample size of 75 patients yields sufficient reliability, which may be difficult to achieve for some provider groups.

Panel Member 5: Reliability was mostly greater than .70 at the public health region and health plan levels, showing adequate reliability. This was mostly driven by the large number of patients per unit at these levels… with only 5 health plans having very similar rates in LA, the ability to distinguish among health plans by measure performance is limited.

Panel Member 6: The results are generally moderate, depending upon the region(state) being discussed, the type of contraception utilized, and the applicable age group. Generally, reliability was greater than or near .80 for all in Iowa, except for the 60 day LARC in ages 15-20 and at the group billing provider level for all methodologies. Unit sizes greater than 75 improved group billing provider levels to greater than .80 For CMS-Texas, all had reliability above or near .80 except for 60 day LARC at the region level, which was not affected by a larger unit size. For Washington State, reliability was greater than .80 for all relevant methods and ages except for the 60-day MOST/MOD in age 15-20 (.422) and the 60-day LARC (.000). In Massachusetts, reliability was greater than .70 for all relevant groups, except for 60-day MOST/MOD in ages 15-20 (.117) and 60-day LARC in ages 15-20. At unit size of greater than 75, all improved except those two groups. Finally, in Louisiana, reliability was lower, generally above or near .60 for all groups except 3-day LARC in age 15-20 (.086), 60-day LARC age 15-20 (.000), and not applied to 60-day MOST/MOD for ages 15-20.

Panel Member 7: OK

Panel Member 8: In general, and especially for entities with>75 women, reliabilities were high.

8. Was the method described and appropriate for assessing the proportion of variability due to real differences among measured entities? NOTE: If multiple methods used, at least one must be appropriate.

   Submission document: Testing attachment, section 2a2.2

   ☒ **Yes**

   ☐ **No**

   ☐ **Not applicable** (score-level testing was not performed)

9. Was the method described and appropriate for assessing the reliability of ALL critical data elements?

   Submission document: Testing attachment, section 2a2.2

   ☒ **Yes**

   ☐ **No**

   ☒ **Not applicable** (data element testing was not performed)

10. **OVERALL RATING OF RELIABILITY** (taking into account precision of specifications and **all** testing results):

    ☒ **High** (NOTE: Can be HIGH **only if** score-level testing has been conducted)

    ☒ **Moderate** (NOTE: Moderate is the highest eligible rating if score-level testing has **not** been conducted)

☐ **Low** (NOTE: Should rate **LOW** if you believe specifications are NOT precise, unambiguous, and complete or if testing methods/results are not adequate)

☐ **Insufficient** (NOTE: Should rate **INSUFFICIENT** if you believe you do not have the information you need to make a rating decision)

11. **Briefly explain rationale for the rating of OVERALL RATING OF RELIABILITY and any concerns you may have with the approach to demonstrating reliability.**

Panel Member 1: Used approach methods to assess reliability. I would reinforce the measure developer's recommendation that a minimum sample size be established for this measure, as lower volume providers seem to have less reliable scores.

Panel Member 2: The reliability scores were in general very high for facility, public health region, and health plan reporting with high case counts.

Panel Member 3: See comments above under article 6.

Panel Member 4: Rates moderate due to the required number of patients needed to satisfy sufficient reliability at the provider level.

Panel Member 5: Reliability was adequate for the purpose of the measure.

Panel Member 6: The results were not "pooled" across all geographical regions and were intended to give estimates of reliability for the different regions, level of reporting, method of contraception, and age groups. Generally, the overwhelming majority were greater than .60 and many were above .80 or even .90.

Panel Member 7: 1. Reliability varied my contraception methods/timing and state. What for is the question here. 2. I wonder whether "face validity" applies here or is an appropriate question for the SMP. I lack subject matter expertise on this, but some regions/ patient groups/patients may not view these intermediate outcomes as favorable - infringement on patient autonomy. I defer.

Panel Member 8: In general, and especially for entities with>75 women, reliabilities were high.

VALIDITY: TESTING

12. **Validity testing level: ☒ Measure score ☐ Data element ☒ Both**
13. **Was the method described and appropriate for assessing the accuracy of ALL critical data elements?** *NOTE that data element validation from the literature is acceptable.*

Submission document*: Testing attachment, section 2b1.*

☒ **Yes**

☐ **No**

☒ **Not applicable** (data element testing was not performed)

14. **Method of establishing validity of the measure score:**

☒ **Face validity**

☒ **Empirical validity testing of the measure score**

☐ **N/A (score-level testing not conducted)**

15. **Was the method described and appropriate for assessing conceptually and theoretically sound hypothesized relationships?**

Submission document: Testing attachment, section 2b1.

☒ **Yes**

☐ **No**

☒ **Not applicable** (score-level testing was not performed)

16. **Assess the method(s) for establishing validity**

Submission document: Testing attachment, section 2b2.2

Panel Member 1: Face validity: Acceptable. Used a panel of 9 experts and asked them to rate whether the measure would provide an accurate reflection of quality and can be used to distinguish good and poor quality in contraceptive services. Empirical validity: Acceptable. The proposed relationships and direction of those relationships seem reasonable.

Panel Member 2: The developer assessed the validity of key data elements by reporting sensitivity, specificity, kappa, PPV and NPV on those data elements. The developer further assessed the measure score validity by correlating this measure with four other related quality measures and provided conceptual reasons for expected results.

Panel Member 3: Methods for establishing empirical validity are appropriate.

Panel Member 4: Reasonable approach described.

Panel Member 5: Convergent validity using Pearson correlation test of the postpartum contraceptive measures by exploring whether they were correlated with other similar quality measures. We hypothesize that facilities/providers that perform well on postpartum contraceptive care should perform well on prenatal and postpartum care and therefore, these related measures will be positively correlated to the postpartum contraceptive care measures.

Panel Member 6: Empirical validity testing was conducted by exploring correlations with other similar quality measures including timeliness or prenatal care and postpartum care, assuming that those providers who did well on one, did well on all. A Pearson's correlation test was performed first. In addition, a novel alternative approach employing a multilevel correlation estimation method. A logic transformation of the binomial proportions is used to relax the linearity assumption.

Panel Member 7: Whether the assumptions here are reasonable or not are very difficult for me to gauge.

Panel Member 8: Correlation analyses (both standard and improved) of the measure with similar measures. They hypothesized that facilities/providers that perform well on postpartum contraceptive care should perform well on prenatal and postpartum care and therefore, these related measures will be positively correlated to the postpartum contraceptive care measures.

17. **Assess the results(s) for establishing validity**

Submission document: Testing attachment, section 2b2.3

Panel Member 1: Face validity: Panel was generally favorable toward the two measures' ability to measure the quality of contraceptive care. The mean rating for the most/moderately effective postpartum measure was 4.22 with a median of 4.5 (between Agree and Strongly Agree). The mean rating for the LARC postpartum measure was 3.78 with a median of 4 (Agree). Empirical validity: No concerns. Found weak to moderate positive correlations between the postpartum contraceptive care measures with postpartum care and first trimester prenatal care. Did not provide any empirical validity testing for health plans & population.

Panel Member 2: The results were mostly as expected. Non-significant correlation between this measure and Chlamydia screening is not unexpected. The results provided some support of the validity of this measure. Data element testing results were good for a majority of data elements.

However, sensitivity for contraceptive patch (numerator variable) and live birth in the last 2 months (exclusion variable) is quite low. This is concerning as it will affect identification of both outcome and cohort.

Panel Member 3: Results suggested weak to moderate positive correlations between the postpartum contraceptive care measures with postpartum care and first trimester prenatal care. Correlations were int he expected direction. I agree with the developers that although these correlations were not strong, they provide reasonable evidence for validity given he differences between measures and populations assessed and within the context of the 2902 measure which should has strong face validity, as when for the 2016 submission.

Panel Member 4: Provided reasonable evidence for validity at the score level.

Panel Member 5: Weak to moderate positive correlations between the postpartum contraceptive care measures with postpartum care and first trimester prenatal care that (in theory) should be related… Pearson's correlation results indicated weak to moderate positive correlations. Overall, we observed weak to moderate positive correlations between the postpartum contraceptive care measures with postpartum care and first trimester prenatal care that (in theory) should be related; these were consistent with our hypotheses.

Panel Member 6: Pearson correlations with the two other quality measures were between .21 and .31 for the MOST/MOD 3 day measure with the multilevel correlation estimate .37 to .39. For the MOST/MOD 60 day measure Pearson was .28 to .52 with the multilevel correlation estimation .52 to .60. For the LARC 3-day measure Pearson was .06 to .28 with the multilevel correlation estimation .10 to .32. For the LARC 60 day measure Pearson was .30-.45 while the multilevel correlation estimation was ..42 to .51. In sum, Pearson was lower than the multilevel estimation, and most of the correlations were weak to moderately positive.

Panel Member 7: End of Section 2b13 outlines concerns that are beyond calculation - breastfeeding and hormonal contraceptives.

Panel Member 8: The results generally support the hypotheses.

VALIDITY: ASSESSMENT OF THREATS TO VALIDITY

18. **Please describe any concerns you have with measure exclusions.**

Submission document: Testing attachment, section 2b2.

Panel Member 1: No concerns.

Panel Member 2: Low sensitivity of "live birth in the last 2 months" will impact one exclusion criterion. Please note that this particular exclusion seems to vary across data sources, 0% for PPFA 2019 data, 0.9% for WA HCA health plan 2019 data, 4.6% for IME public health region 2018 data.

Panel Member 3: The main concern I have is with the exclusion of live birth deliveries that occurred during the last 2 months of the measurement year, which contributes the large majority of excluded cases. I think there are ways to avoid this exclusion as noted above, by modifying the included months for a given year to include a full year. Additionally, care providers might be negatively motivated to meet the required performance for the end-year births knowing that they will be excluded. No testing was conducted to assess the impact of this exclusion on the performance rate. It is therefore recommended that developers assess performance rates that include a full 12 months from a given year (Nov 1st to Oct 31st) compared to the 10 month period assessed, and add this information to the submission as complimentary material.

Panel Member 4: Acceptable.

Panel Member 5: Empirical validity demonstrated poor correlation with comparative with some of the measures. Difficult to pass entire set with some results very poor.

Panel Member 6: None

Panel Member 7: Non-empiric: From my read, does not account for patient preference or Academy of Breastfeeding statement.

19. **Risk Adjustment**

Submission Document: Testing attachment, section 2b3

19a. **Risk-adjustment method** ☒ **None** ☐ **Statistical model** ☐ **Stratification**

19b. **If not risk-adjusted, is this supported by either a conceptual rationale or empirical analyses?**

☒ Yes ☒ No ☒ Not applicable

19c. **Social risk adjustment:**

19c.1 Are social risk factors included in risk model? ☐ Yes ☒ No ☒ Not applicable

19c.2 Conceptual rationale for social risk factors included? ☒ Yes ☒ No

19c.3 Is there a conceptual relationship between potential social risk factor variables and the measure focus? ☒ Yes ☐ No

19d. **Risk adjustment summary:**

19d.1 All of the risk-adjustment variables present at the start of care? ☐ Yes ☐ No

19d.2 If factors not present at the start of care, do you agree with the rationale provided for inclusion? ☐ Yes ☐ No

19d.3 Is the risk adjustment approach appropriately developed and assessed? ☐ Yes ☐ No

19d.4 Do analyses indicate acceptable results (e.g., acceptable discrimination and calibration) ☐ Yes ☐ No

19d.5. Appropriate risk-adjustment strategy included in the measure? ☒ Yes ☐ No

19e**. Assess the risk-adjustment approach**

Panel Member 1: Measure is not risk-adjusted, but the measure developer does provide a justification. The measure developer does recommend stratifying the measure by age group to understand age-group differences in performance.

Panel Member 2: The developer articulated why risk adjustment is not needed for this measure.

Panel Member 3: The justification for not risk-adjusting this measure other than age group stratification is, to my view, weak. I agree that ideally, no adjustment would be best. However, this assumes that the disparities identified between different patient groups in the use of most and moderately effective and LARC methods of contraception are within the provider's control. To justify no risk-adjustment, some level of evidence that supports this assumption should be presented. Also, no testing was provided to support the stratification approach (2b3.5. & 2b3.9). Please add this information.

Panel Member 4: Justification provided. No evidence to contradict the developer's rationale.

Panel Member 5: No risk adjustment but authors recommend stratifying by age group so that measure scores for adolescent and adult women can be calculated separately for quality improvement (QI) purposes.

Panel Member 6: Risk adjustment was not felt to be justified, mostly because, although variation exists, it was felt to be due to modifiable clinical and programmatic considerations, socio-economic per se.

Panel Member 7: I do not understand why age-only risk stratification is offered when other demographic variables are named as potential source of variation and may be considered as risk-adjustors.

20. **Please describe any concerns you have regarding the ability to identify meaningful differences in performance.**

    Submission document: Testing attachment, section 2b4.

    Panel Member 1: None. See good variation in performance across measured entities.

    Panel Member 2: No particular concern as the distribution of measure scores showed substantial variation among measure entities.

    Panel Member 3: No concerns

    Panel Member 4: No concerns.

    Panel Member 5: Ability to identify differences needs to be taken in context of the units measured. As noted by Authors; Given the sensitive and context-dependent nature of quality improvement activities for contraceptive care, we strongly recommend that any methods for addressing performance gaps are developed carefully in conjunction with established guidelines for patient-centered contraceptive care. Because the interpretation of these measures is context dependent, clinically meaningful differences are best evaluated by subject matter experts who are familiar with the healthcare delivery organizations and their populations.

    Panel Member 6: None

    Panel Member 7: Focus here is on low-use.

21. **Please describe any concerns you have regarding comparability of results if multiple data sources or methods are specified.**

    Submission document: Testing attachment, section 2b5.

    Panel Member 1: N/A

    Panel Member 2: Even at the same measure level, the results seemed to be quite different. For example, mean rate for facilities in PPFA was 0.612 while mean rate for facilities in NYP was 0.427. It is important to establish consistent data element reliability for critical data elements across data sources before attempting to compare results based on different data sources.

    Panel Member 3: Not applicable

    Panel Member 4: N/A

    Panel Member 6: Not applicable.

22. **Please describe any concerns you have regarding missing data.**

    Submission document: Testing attachment, section 2b6.

    Panel Member 1: None. Measure uses claims data which typically has very low rates of missing data.

    Panel Member 3: No concerns

    Panel Member 4: No concerns

Panel Member 5: No concerns

Panel Member 6: Missing data is low. Exclusions were expected and built into the model

For cost/resource use measures ONLY:

23. **Are the specifications in alignment with the stated measure intent?**

    ☒ **Yes** ☐ **Somewhat** ☐ **No (If "Somewhat" or "No", please explain)**

24. **Describe any concerns of threats to validity related to attribution, the costing approach, carve outs, or truncation (approach to outliers):**

25. **OVERALL RATING OF VALIDITY taking into account the results and scope of all testing and analysis of potential threats.**

    ☐ **High** (NOTE: Can be HIGH only if score-level testing has been conducted)

    ☒ **Moderate** (NOTE: Moderate is the highest eligible rating if score-level testing has NOT been conducted)

    ☒ **Low** (NOTE: Should rate LOW if you believe that there **are** threats to validity and/or relevant threats to validity were **not assessed OR** if testing methods/results are not adequate)

    ☐ **Insufficient** (NOTE: For instrument-based measures and some composite measures, testing at both the score level and the data element level **is required**; if not conducted, should rate as INSUFFICIENT.)

26. **Briefly explain rationale for rating of OVERALL RATING OF VALIDITY and any concerns you may have with the developers' approach to demonstrating validity.**

    Panel Member 1: Conducted both face validity and empirical validity testing. While the empirical validity testing provided looked at group practices (and had moderate correlations in the expected direction), no empirical validity testing was provided for health plans & population.

    Panel Member 2: Data element validity for two key data elements (contraceptive patch and live birth in the last 2 months) is concerning.

    Panel Member 3: The concerns about exclusion criteria and no risk-adjustment are the reason for the moderate rating.

    Panel Member 4: Appropriate testing with acceptable results.

    Panel Member 5: Empirical validity demonstrated poor correlation with comparative with some of the measures. Difficult to pass entire set with some results very poor.

    Panel Member 6: Validity was not strong across groups, methodologies, locations, ages and struggled between low double digits and just barely adequate double digits.

    Panel Member 7: This may be beyond the SMP, however, the measure assumes what the patient wants, perhaps inappropriately. Lack of risk adjustment (or accounting for what patient wants) may compromise validity. I am not certain of this but raise the question. Otherwise - moderate.

    Panel Member 8: The empirical validity results generally support the hypotheses.

FOR COMPOSITE MEASURES ONLY: Empirical analyses to support composite construction

27. **What is the level of certainty or confidence that the empirical analysis demonstrates that the component measures add value to the composite and that the aggregation and weighting rules are consistent with the quality construct?**

☐ **High**

☐ **Moderate**

☐ **Low**

☐ **Insufficient**

28. **Briefly explain rationale for rating of EMPIRICAL ANALYSES TO SUPPORT COMPOSITE CONSTRUCTION**

ADDITIONAL RECOMMENDATIONS

29. **If you have listed any concerns in this form, do you believe these concerns warrant further discussion by the multi-stakeholder Standing Committee? If so, please list those concerns below.**

    Panel Member 1: The measure is specified for group practices, health plans, and population. The measure developer did not provide any empirical validity testing at the health plan and population levels. That said, given that health plans and populations are generally larger in size than a group practice, this concern is likely minimized. However, no empirical data was provided to actually support this assumption.

    Panel Member 5: The overall measure contains multiple measures applied to different entities. Some of measure groups demonstrated poor validity. Authors caution how measures should be used but once they are endorsed, there is no control if CMS adopted them into a payment program. I have concerns of passing the entire measure when some of them performed poorly on validity

    Panel Member 6: A unique measure with many components and no aggregate score. Will likely have to discuss.

    Panel Member 7: Why does this measure not account for patient preference on birth control?

Developer Submission

NQF #: 2902

Corresponding Measures:

De.2. Measure Title: Contraceptive Care - Postpartum

Co.1.1. Measure Steward: HHS Office of Population Affairs

De.3. Brief Description of Measure: Among women ages 15 through 44 who had a live birth, the percentage that is provided:

1) A most effective (i.e., sterilization, implants, intrauterine devices or systems (IUD/IUS)) or moderately (i.e., injectables, oral pills, patch, or ring) effective method of contraception within 3 and 60 days of delivery.
2) A long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery.

Two time periods are proposed (i.e., within 3 and within 60 days of delivery) because each reflects important clinical recommendations from the Centers for Disease Control and Prevention (CDC) and the American College of Obstetricians and Gynecologists (ACOG). The 60-day period reflects ACOG recommendations that women should receive contraceptive care at the 6-week postpartum visit. The 3-day period reflects CDC and ACOG recommendations that the immediate postpartum period (i.e., at delivery, while the woman is in the hospital) is a safe time to provide contraception, which may offer greater convenience to the client and avoid missed opportunities to provide contraceptive care.

1b.1. Developer Rationale: Unintended pregnancies and interpregnancy intervals of less than 18 months have been associated with poor perinatal outcomes such as preterm birth, low birth weight, small size for gestational age, as well as adverse maternal outcomes [1, 2]. Studies among U.S. women report that women at younger maternal age are at higher risk for unintended pregnancy [14] and older maternal age is associated with closely spaced pregnancies [15]. Contraception is a highly effective clinical preventive service that can assist women in reaching their reproductive health goals, like reducing unintended pregnancies and the percentage of births occurring within 18 months of a previous birth [3, 4]. The type of contraceptive method used by a woman is strongly associated with her risk of unintended pregnancy [3-6]. The most effective methods (LARC and sterilization) have a failure rate that is less than 1% per year under typical use [4]. The moderately effective methods (injectable, pill, patch, ring) have a typical failure rate of 4-7% per year, while the less effective methods have a typical failure rate of 13-27% [4]. One recent analysis also indicates that the most used contraceptive methods in the United States have experienced reductions in their typical use failure rates [24]. Not using any method at all has a failure rate of 85% [4].

After NQF endorsed #2902 in 2016, OPA published multiple articles in peer-reviewed journals to inform providers delivering care in public and private settings (e.g., commercial health plans, Medicaid, community health centers, free-standing reproductive health clinics) about the new measure. These publications outline our conceptual framework for developing #2902 alongside its two complementary measures (NQF #2903 and #2904) and emphasize appropriate measure implementation and use. Furthermore, OPA highlighted systematic reviews which indicate that effective contraceptive method use increases the interbirth interval and reduces adolescent and unintended pregnancies. This association between use of effective contraception and positive reproductive health outcomes demonstrates the importance of contraceptive care measures to health care quality [25-27].

Because some contraceptive methods are more effective than others in preventing unintended pregnancy and in spacing births among postpartum women who wish to delay pregnancy, NQF #2902 focuses on utilization of these contraceptive methods among women within 3 and 60 days of delivery. The measure calculates contraceptive provision at two separate postpartum periods because current clinical guidelines offer recommendations related to both lengths of time after delivery. The 60-day period reflects ACOG recommendations that women should obtain contraceptive care at the 6-week postpartum visit [17]; AAP and CDC also recommend postpartum contraceptive provision and describe how it can be done so safely (see evidence report for details) [8-12]. The 3-day period reaffirms CDC and ACOG recommendations that the immediate postpartum period (i.e., at delivery, while the woman is at the hospital) is a safe and particularly effective time for women to obtain contraception if they desire it. Initiating use of contraception immediately postpartum can be convenient for the client since they are accessing health care services at the hospital post-delivery. Because some women may not attend a postpartum visit, inpatient contraceptive initiation can prevent missed opportunities to provide contraceptive care [17].

Many states have addressed barriers to postpartum LARC insertion in their Medicaid programs (i.e., by reimbursing separately for LARC in the immediate postpartum period, outside of the bundled delivery payment); in 2016 HHS CMS released an Information Bulletin describing the postpartum LARC payment and policy strategies employed by state Medicaid agencies at that time [18, 19]. The cost effectiveness of this practice for payers has been documented as well [20-22]. Given this context, we expect that use of NQF #2902 will continue to encourage more providers to follow ACOG [7, 17] and CDC [11, 12] recommendations to deliver patient-centered counseling about postpartum contraception to clients during prenatal care and at the postpartum visit. For women who want to use contraception after delivery, providers should discuss the possibility of obtaining LARC and the full range of contraceptive methods in the immediate postpartum period, the effectiveness of the different methods, and other factors that may help a woman select the method that is best for her [11]. Providers should advocate to make LARC available in the immediate postpartum inpatient setting or on a same-day basis in postpartum outpatient care [7, 23].

Thus, NQF #2902 is designed to encourage providers to offer those clients seeking contraception the full range of methods. For the NQF #2902 primary measure, OPA has not set a benchmark for it and does not expect scores to reach 100%. OPA also emphasizes that the NQF #2902 LARC sub-measure should not be used to encourage high utilization rates and that it would be an inappropriate measure to implement in a pay-for-performance context. This sub-measure aims to ensure access to LARC methods in the postpartum period by monitoring very low rates of provision (i.e., below 2%). The goal of providing contraception should never be to recommend any one method or class of methods over women's individual choices. Women who want to delay or prevent pregnancy after a recent live birth delivery should have access to a broad range of contraceptive methods, preferably on a same-day, on-site basis. Furthermore, it is important that these contraceptive services are provided in a client-centered manner that treats each person as a unique individual with respect, empathy, and understanding, providing accurate, easy-to-understand information based on the client's self-identified needs, goals, preferences, and values [11]. Patients receiving client-centered care may feel motivated to continue seeking reproductive health care for contraception and if they become pregnant, prenatal care and birth [13]. Thus, efforts to provide client-centered contraceptive services aligned with American Academy of Pediatrics (AAP), ACOG, and CDC, and OPA recommendations [7-12] may be strengthened by quality improvement processes based on standardized metrics of contraceptive care provision.

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S.4. Numerator Statement: Primary measure: Women ages 15 through 44 who had a live birth and were provided a most (sterilization, implant, intrauterine device) or moderately (injectable, pill, patch, or ring) effective method of contraception within 3 and 60 days of delivery.

Sub-measure: Women ages 15 through 44 who had a live birth and were provided a long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery.

S.6. Denominator Statement: Women ages 15 through 44 who had a live birth in a 12-month measurement year.

S.8. Denominator Exclusions: The following categories are excluded from the denominator: (1) deliveries that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth or induced abortion); and (2) deliveries that occurred during the last two months of the measurement year.

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

S.17. Data Source: Claims

S.20. Level of Analysis: Clinician : Group/Practice, Health Plan, Population : Regional and State

IF Endorsement Maintenance – Original Endorsement Date: Oct 25, 2016 **Most Recent Endorsement Date:** Oct 25, 2016

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

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

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? Although not a requirement, two other measures have been submitted for maintenance endorsement in separate applications that are complementary to this measure and, if reported together, would provide a broader perspective on the quality of contraceptive services. The two other measures are focused on: (1) provision of most and moderately effective methods of contraception among all women at risk (not just postpartum women), and (2) long-acting reversible contraceptive methods (LARC) among all women at risk (not just postpartum women).

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

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

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

Postpartum_2902_NQF_Evidence_attachment_2021-04-27.docx

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

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

Yes

1a. Evidence (subcriterion 1a)

Measure Number (*if previously endorsed*)**:** #2902

Measure Title: Contraceptive Care - Postpartum

IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: N/A

Date of Submission: **4/19/2021**

1a.1. This is a measure of: (*should be consistent with type of measure entered in De.1*)

Outcome

☐ Outcome:

☐ Patient-reported outcome (PRO):

PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors. (*A PRO-based performance measure is not a survey instrument. Data may be collected using a survey instrument to construct a PRO measure.)*

☒ Intermediate clinical outcome (*e.g., lab value*): **Contraceptive provision**

☐ Process:

☐ Appropriate use measure:

☐ Structure:

☐ Composite:

1a.2 LOGIC MODEL Diagram or briefly describe the steps between the healthcare structures and processes (e.g., interventions, or services) and the patient's health outcome(s). The relationships in the diagram should be easily understood by general, non-technical audiences. Indicate the structure, process or outcome being measured.

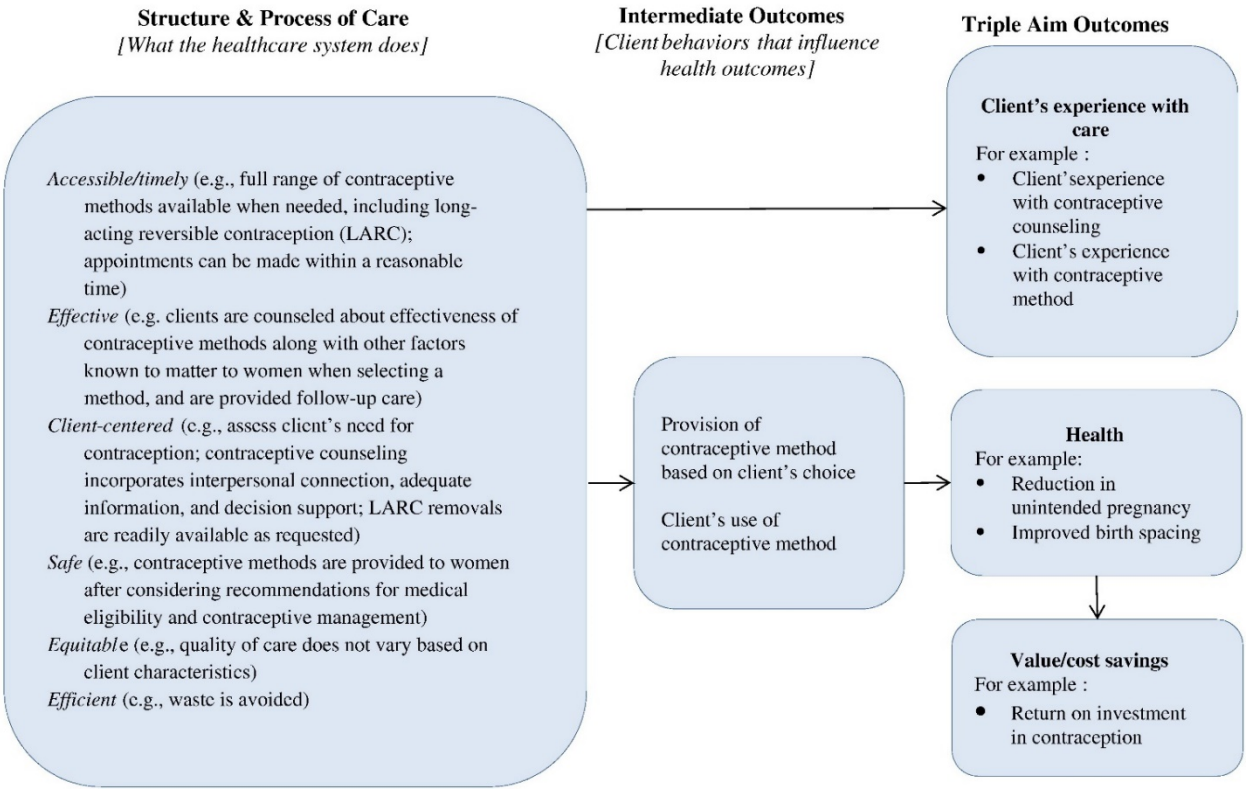
2021 Submission

The diagram in Figure 1 below describes the relationship between the structures and processes of quality contraceptive care, including patient- (or client-) centered care, and improved outcomes, including the intermediate clinical outcome of relevance for this application: contraceptive provision. This diagram was developed in 2017 by the U.S. Department of Health and Human Services (HHS), Office of Population Affairs (OPA), in collaboration with the University of California San Francisco (UCSF) Person-Centered Reproductive Health Program, measure steward for the NQF-endorsed Person-Centered Contraceptive Counseling (PCCC) measure (NQF #3543). The diagram was created in the context of describing OPA's work to develop claims-based measures of contraceptive provision (NQF #2902, #2903, and #2904, endorsed in 2016), and the need for the development of the PCCC (which is a Patient-Reported Outcome Performance Measure or PRO-PM) to help provide a more robust picture of contraceptive care quality (Gavin 2017). NQF endorsed the PCCC in November 2020.

OPA's conceptual framework for contraceptive care incorporates essential components of the Institute of Medicine's six dimensions of quality care, Donabedian's quality of care model *structure* and *process*

categories, and the Institute for Healthcare Improvement's concept of the "Triple Aim". Several evidence-based clinical family planning recommendations of CDC and OPA serve as examples of health systems' structure and process components in contraceptive care (Gavin and CDC, 2014). These components affect two intermediate clinical outcomes: provision of contraceptive methods based on client's choice, and client's use of contraception. The intermediate outcomes signify a client's decision at the end of a clinical encounter that will influence their probability of having an unintended pregnancy. The structure and process also directly affect the client's experience with care. Health outcomes are influenced through the intermediate outcomes of client behavior; and cost-savings result in reductions in unintended pregnancy and improvements in birth spacing. (Gavin 2017).

Figure 1: Office of Population Affairs' conceptual framework for clinical performance measures for contraceptive care.



1a.3 Value and Meaningfulness: **IF** this measure is derived from patient report, provide evidence that the target population values the measured ***outcome, process, or structure*** and finds it meaningful. (Describe how and from whom their input was obtained.)

2021 Submission

Not applicable; measure is not derived from patient report.

****RESPOND TO ONLY ONE SECTION BELOW -EITHER 1a.2, 1a.3 or 1a.4) ****

1a.2 FOR OUTCOME MEASURES including PATIENT REPORTED OUTCOMES - Provide empirical data demonstrating the relationship between the outcome (or PRO) to at least one healthcare structure, process, intervention, or service.

2021 Submission

Not applicable; measure is not derived from patient report.

1a.3. SYSTEMATIC REVIEW(SR) OF THE EVIDENCE (for INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURES, INCLUDING THOSE THAT ARE INSTRUMENT-BASED) If the evidence is not based on a systematic review go to section 1a.4) If you wish to include more than one systematic review, add additional tables.

What is the source of the systematic review of the body of evidence that supports the performance measure? A systematic review is a scientific investigation that focuses on a specific question and uses explicit, prespecified scientific methods to identify, select, assess, and summarize the findings of similar but separate studies. It may include a quantitative synthesis (meta-analysis), depending on the available data. (IOM)

☒ Clinical Practice Guideline recommendation (with evidence review)

☐ US Preventive Services Task Force Recommendation

☒ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*)

☐ Other

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	• Immediate versus delayed postpartum insertion of contraceptive implant for contraception (Review) • Sothornwit J, Werawatakul Y, Kaewrudee S, Lumbiganon P, Laopaiboon M • 2017 • Sothornwit J, Werawatakul Y, Kaewrudee S, Lumbiganon P, Laopaiboon M. Immediate versus delayed postpartum insertion of contraceptive implant for contraception. *Cochrane Database of Systematic Reviews* 2017, Issue 4. Art. No.: CD011913. • https://doi.org/10.1002/14651858.CD.011913.pub2

Systematic Review	Evidence
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	Conclusions from this review indicate that the rate of initiation of contraceptive implant at the first postpartum check-up visit was higher with immediate postpartum insertion than with delayed insertion (p. 2).
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Moderate quality: further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Provide all other grades and definitions from the evidence grading system	GRADE Working Group grades of evidence was used in this SR. The other grades include: High quality: further research is very unlikely to change our confidence in the estimate of effect. Low quality: further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: we are very uncertain about the estimate.
Grade assigned to the **recommendation** with definition of the grade	Not applicable.
Provide all other grades and definitions from the recommendation grading system	Not applicable.
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	• Quantity – 3 studies • Quality – Randomized controlled trials

Systematic Review	Evidence
Estimates of benefit and consistency across studies	Initiation rate of contraceptive implants at the first postpartum check-up visit was significantly higher in the immediate insertion group than in the delayed insertion group (RR 1.41, 95% CI 1.28 to 1.55; three studies, 410 participants; moderate quality evidence). There appeared to be little or no difference between the groups in the continuation rate of contraceptive implant used at six months after insertion (RR 1.02, 95% CI 0.93 to 1.11; two studies, 125 participants; low quality evidence) or at 12 months after insertion (RR 1.04; 95% CI 0.81 to 1.34; one study, 64 participants; very low quality evidence). It was unclear whether there was any difference between the groups in scores for participant satisfaction on a 0-10 scale (MD -0.40, 95% CI -1.26 to 0.46, low quality evidence), or in rates of unintended pregnancy (RR 1.82, 95% CI 0.38 to 8.71, 1 RCT, 64 women, very low quality evidence) at 12 months, or in rate of breastfeeding rate at six months (RR 2.01
What harms were identified?	Women who received an immediate postpartum contraceptive implant insertion had a higher mean number of days of abnormal vaginal bleeding within six weeks postpartum (MD 5.80 days, 95% CI 3.79 to 7.81; one study, 215 participants; low quality evidence) and a higher rate of other side effects in the first six weeks after birth (RR 2.06, 95% CI 1.38 to 3.06; one study, 215 participants; low quality evidence) than those who received a delayed postpartum insertion. There appeared to be little or no difference between the groups in heavy, irregular vaginal bleeding or associated severe cramping within 12 months (RR 1.01, 95% CI 0.72 to 1.44, one study, 64 participants; very low quality evidence).
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Not applicable.

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	• Immediate postpartum insertion of intrauterine device for contraception. • Lopez LM, Bernholc A, Hubacher D, Stuart G, Van Vliet HAAM. • 2015 • Lopez LM, Bernholc A, Hubacher D, Stuart G, Van Vliet HAAM. Immediate postpartum insertion of intrauterine device for contraception. Cochrane Database of Systematic Reviews 2015, Issue 6. Art. No.: CD003036. DOI: 10.1002/14651858.CD003036.pub3. • https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003036.pub3/full
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	Recent trials compared different insertion times after vaginal or cesarean delivery. Evidence was limited because studies with full reports generally had small sample sizes. Overall, the quality of evidence was moderate; abstracts and older studies had limited reporting. Ongoing trials will add to the evidence, although some are small. Trials of adequate power are needed to estimate expulsion rates and side effects. The benefit of effective contraception immediately after delivery may outweigh the disadvantage of increased risk for expulsion. Frequent prenatal visits during the third trimester provide the opportunity to discuss effective contraceptive methods and desired timing for initiation.
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Provide all other grades and definitions from the evidence grading system	This SR utilized GRADE Working Group grades of evidence. The other grades include: High quality: Further research is very unlikely to change our confidence in the estimate of effect. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.

Systematic Review	Evidence
Grade assigned to the **recommendation** with definition of the grade	Not applicable.
Provide all other grades and definitions from the recommendation grading system	Not applicable.
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	Quantity – 15 studies Quality - Randomized controlled trials (RCTs) with at least one treatment arm that involved immediate IUC placement (i.e., within 10 minutes of placenta delivery)
Estimates of benefit and consistency across studies	Sensitivity analysis included trials with sufficient outcome data and moderate or high quality evidence. A pilot trial compared immediate insertion versus early or standard insertion. In groups comparing immediate versus early insertion (N = 30), all women had the LNG-IUS inserted. By six months, the groups had the same expulsion rate and did not differ significantly in IUC use. For immediate versus standard insertion, we conducted meta-analyses of four trials. Insertion rates did not differ significantly between study arms. However, the trial from Uganda showed insertion was more likely for the immediate group, although the estimate was imprecise. In the meta-analysis, expulsion by six months was more likely for the immediate group, but the confidence interval was wide (OR 4.89, 95% CI 1.47 to 16.32; participants = 210; studies = 4). IUC use at six months was more likely with immediate insertion than with standard insertion (OR 2.04, 95% CI 1.01 to 4.09; participants = 243; studies = 4). Study arms did not differ in use at 3 or 12 months in individual small trials.
What harms were identified?	Clinical follow-up can help detect early expulsion, as can educating women about expulsion signs and symptoms.
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Not applicable.

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	Clinical Practice Guideline recommendation • Long-Acting Reversible Contraception: Implants and Intrauterine Devices • American College of Obstetricians and Gynecologists (ACOG) • 2017 November, reaffirmed in 2019 • Long-acting reversible contraception: implants and intrauterine devices. Practice Bulletin No. 186. American College of Obstetricians and Gynecologists. Obstet Gynecol 2017; 130:e251-69 • https://doi.org/10.1097/AOG.0000000000002400

Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	In summary, intrauterine devices (IUDs) and contraceptive implants, also called long-acting reversible contraceptives (LARC), are the most effective reversible contraceptive methods that can be provided to a broad range of patients wishing to prevent pregnancy, including postpartum women. Below is the Summary of Recommendations, by grade: **"The following recommendations are based on good and consistent scientific evidence (Level A):** Insertion of an IUD immediately after first-trimester uterine aspiration should be offered routinely as a safe and effective contraceptive option. Insertion of the contraceptive implant on the same day as first-trimester or second-trimester induced or spontaneous abortion should be offered routinely as a safe and effective contraceptive option. Routine antibiotic prophylaxis is not recommended before IUD insertion. **The following recommendations are based on limited or inconsistent scientific evidence (Level B):** Intrauterine devices and the contraceptive implant should be offered routinely as safe and effective contraceptive options for nulliparous women and adolescents. Insertion of an IUD or an implant may occur at any time during the menstrual cycle as long as pregnancy may be reasonably excluded. Insertion of an IUD immediately after confirmed completion of first-trimester medication-induced abortion should be offered routinely as a safe and effective contraceptive option. Immediate postpartum IUD insertion (i.e., within 10 minutes after placental delivery in vaginal and cesarean births) should

	be offered routinely as a safe and effective option for postpartum contraception. Immediate postpartum initiation of the contraceptive implant (i.e., insertion before hospital discharge after a hospital stay for birth) should be offered routinely as a safe and effective option for post-partum contraception, regardless of breastfeeding status. Women who have not undergone routine screening for STIs or who are identified to be at increased risk of STIs based on patient history should receive CDC-recommended STI screening at the time of a single visit for IUD insertion. Intrauterine device insertion should not be delayed while awaiting test results. Treatment for a positive test result may occur without removal of the IUD. Intrauterine devices may be offered to women with a history of ectopic pregnancies. **The following recommendations are based primarily on consensus and expert opinion (Level C):** Long-acting reversible contraceptives have few contraindications and should be offered routinely as safe and effective contraceptive options for most women. The copper IUD should be offered routinely to women who request emergency contraception and are eligible for IUD placement. To improve LARC method satisfaction and continuation, patient counseling should include information on expected bleeding changes and reassurance that these changes are not harmful. Endometrial biopsy, colposcopy, cervical ablation or excision, and endocervical sampling may all be performed with an IUD in place.

Systematic Review	Evidence
	Actinomyces on cytology is considered an incidental finding. In the absence of symptoms, no antimicrobial treatment is needed, and the IUD may be left in place. Intrauterine device removal is recommended in pregnant women when the strings are visible or can be removed safely from the cervical canal. There is no compelling evidence for the removal of an IUD or implant before its expiration date in menopausal women." (p. e262)
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Grades assigned to the evidence followed the method outlined by the U.S. Preventive Services Task Force (USPSTF). The evidence associated with the recommendations included 132 graded studies. The evidence was graded as follows: • 30 studies were graded I (Evidence obtained from at least one properly designed randomized controlled trial.) • 13 studies were graded II-2 (Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.) • 43 studies were graded II-3 (Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.) • 46 studies were graded III (Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.)
Provide all other grades and definitions from the evidence grading system	Studies were reviewed and evaluated for quality according to the method outlined by the USPSTF. All grades in the USPSTF grading system for research studies were assigned to the analyses comprising the evidence, except for the following grade: II-1 Evidence obtained from well-designed controlled trials without randomization.

Systematic Review	Evidence
Grade assigned to the **recommendation** with definition of the grade	The USPSTF grading system for recommendations was used to assign grades. A total of 17 recommendations were provided in this clinical practice guideline recommendation with evidence review. 3 recommendations were assigned the grade Level A (Recommendations are based on good and consistent scientific evidence) 7 recommendations were assigned the grade Level B (Recommendations are based on limited or inconsistent scientific evidence) 7 recommendations were assigned the grade Level C (Recommendations are based primarily on consensus and expert opinion)
Provide all other grades and definitions from the recommendation grading system	Not applicable. All grades are included in the box above.
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	• This SR counted 151 studies in its body of evidence. About one-third of these studies were randomized controlled trials, case-control studies, or cohort studies. • 30 randomized controlled trials • 13 cohort or case-control analytic studies • 43 studies from multiple time series with or without intervention, uncontrolled experiments • 46 descriptive studies, expert committee reports, expert opinions based on clinical experience • 15 systematic reviews • 2 cost-benefit studies • 2 meta-analyses

Estimates of benefit and consistency across studies	ACOG's review indicated that LARC methods are safe, highly effective forms of contraception for most women, including subpopulations of women like adolescent females, nulliparous women, and women post-abortion. An increase in LARC use may have partially contributed to the decline in the rate of unintended pregnancies in the United States from 51% to 45% between 2008-2011. Citing Trussell's 2011 review of contraceptive failure rates, this review reported that the LARC methods have a typical failure rate less than 1%. ACOG found good and consistent evidence that LARC methods can be inserted immediately after induced or spontaneous abortion, providing safe and effective contraception to prevent pregnancy. One RCT reported that among women receiving immediate insertion post-abortion, six-month IUD use rates were higher than in the delayed-insertion group (92.3% vs. 76.6%; $p<0.001$) with no difference for expulsion risk between groups. No pregnancies occurred in the immediate insertion group. For post-abortion implant insertion, one RCT found that risk of medication abortion failure was low and similar between the immediate placement (i.e., same day as mifepristone administration) and after medication-induced abortion (3.9% vs. 3.8%). Another prospective cohort study indicated that continuation rates were similar among women with immediate and delayed post-abortion implant placement (82% for immediate and interval placement). ACOG determined that adequate scientific evidence exists that IUDs and implants should be offered to adolescents and nulliparous women routinely as safe and effective contraceptive options with a prevent pregnancy. One retrospective cohort study in IUD users reported that serious complications (i.e., ectopic pregnancy, pelvic inflammatory disease) were rare regardless of age or IUD type. Although adolescent women (ages 15-19) were more likely to have a claim for menstrual bleeding changes or normal pregnancy than women ages 25-44, early discontinuation rates were similar in both groups (13% vs. 11%). The Contraceptive CHOICE project, a prospective cohort study, reported high uptake for LARC methods by adolescents when these methods were offered for free. Young women ages 14-17 years selecting a LARC method were more likely to use the implant (63%) while those ages 18-20 chose an IUD (71%). Another study reported that continuation rates for postpartum

Systematic Review	Evidence
	adolescents using the implant were higher than those using contraceptive injection or combined oral contraceptive pills; this difference was statistically significant ($p<0.001$).

What harms were identified?	ACOG described the following harms for LARC methods in this review. **Harms identified with IUDs** In two studies (prospective and retrospective cohorts), users of copper and levonorgestrel-releasing (LNG) IUDs had similar mean weight gain. Commonly reported adverse effects with the copper IUD are heavy menstrual bleeding and pain. Some LNG IUD users reported the following hormone-related side effects: headaches, nausea, breast tenderness, mood changes, and ovarian cyst formation. Expulsion, method failure, and perforation are complications with IUDs that appear to rarely occur. A large, prospective, noninterventional 2015 study surveilling over 61,000 women for seven years reported 1.4 per 1000 LNG IUD insertions and 1.1 per 1000 copper IUD insertions. **Harms identified with Implants** Changes in menstrual bleeding patterns is a common side effect of implant use. One randomized, multicenter comparative study noted that the median number of bleeding/spotting days decreased from the first 90 days to the last year of the study period (Implanon: 33.5 to 19-21.5 days; Norplant: 34.5 to 18.0-23.0). The mean overall incidence decreased during the study (Implanon: 66.0% to 27.3%; Norplant: 69.0% to 21.7%). Additional adverse events reported by implant users are gastrointestinal difficulties, headaches, breast pain, vaginitis, acne, and weight gain. Another RCT reported that 1-year cumulative discontinuation rates due to menstrual bleeding disturbances was 2.1% for implants, but weight gain was cited as the main reason for 7% of users to discontinue the implant. About 83% of participants in this study continued using the implant for the project duration. One integrated analysis of international clinical trials reported that complications were rare during implant insertion and removal (1.0% for insertion, 1.7% for removal). Women experiencing insertion complications reported pain, slight bleeding, hematoma formation, deep or incorrect insertion

Systematic Review	Evidence
	and unrecognized insertion. Complications with removal include breakage of the implant and failure to palpate or locate the implant due to deep insertion.
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	This clinical guidance was reaffirmed in 2019 without changing the SR's conclusions.

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	Clinical Practice Guideline recommendation • Providing Quality Family Planning Services: Recommendations of CDC and the U.S. Office of Population Affairs. • Gavin L, Moskosky S, Carter M, Curtis K, Glass E, Godfrey E, Marcell A, Mautone-Smith N, Pazol K, Tepper N, Zapata L; Centers for Disease Control and Prevention (CDC) • 2014 Apr 25 • Gavin L, Moskosky S, Carter M, Curtis K, Glass E, Godfrey E, Marcell A, Mautone-Smith N, Pazol K, Tepper N, Zapata L; Centers for Disease Control and Prevention (CDC). Providing quality family planning services: Recommendations of CDC and the U.S. Office of Population Affairs. MMWR Recomm Rep. 2014 Apr 25;63(RR-04):1-54. PMID: 24759690. • https://www.cdc.gov/mmwr/pdf/rr/rr6304.pdf

Systematic Review	Evidence
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	"Providers are encouraged to present information on potential reversible methods of contraception by using a tiered approach (i.e., presenting information on the most effective methods first, before presenting information on less effective methods). This information should include an explanation that long-acting reversible contraceptive methods are safe and effective for most women, including those who have never given birth and adolescents. Information should be tailored and presented to ensure a client-centered approach. It is not appropriate to omit presenting information on a method solely because the method is not available at the service site. If not all methods are available at the service site, it is important to have strong referral links in place to other providers to maximize opportunities for clients to obtain their preferred method that is medically appropriate." Source: CDC/OPA (2014). Providing Quality Family Planning Services (QFP), page 8 and Appendix B Generally, the QFP recommendations outline how to provide family planning services by: • defining a core set of family planning services for women and men, • describing how to provide contraceptive and other clinical services, serve adolescents, and perform quality improvements, and • encouraging the use of the family planning visit to provide selected preventive health services for women, in accordance with the recommendations for women issued by the Institute of Medicine (IOM) and adopted by HHS • support offering a full range of Food and Drug Administration (FDA)-approved contraceptive methods as well as counseling that highlights the effectiveness of contraceptive methods overall

Systematic Review	Evidence
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Of 132 studies, 41 are graded level I and the rest are graded II-1 to II-3 using the USPSTF system. The authors described their method to assess the internal and external validity of included studies below: "The quality, or internal validity, of each individual study was assessed to consider the risk that the findings may be confounded by a systematic bias. We used the schema developed by the USPSTF for describing a study's level of risk for bias. A rating of risk for bias was determined through the presence or absence of several characteristics that are known to protect a study from the confounding influence of bias. We developed criteria by which the risk for bias of individual studies could be evaluated, based on recommendations from several sources, including the USPSTF; the Grading of Recommendations Assessment, Development and Evaluation (GRADE); and Community Guide for Preventive Services." Further details can be found in Appendix A of QFP (p. 30-32). In addition, CDC published its methodology for the systematic reviews describing the evidence and their grading in the following paper: Tregear, S. J., Gavin, L. E., & Williams, J. R. (2015). Systematic Review Evidence Methodology: Providing Quality Family Planning Services. *American journal of preventive medicine*, *49*(2 Suppl 1), S23–S30. https://doi.org/10.1016/j.amepre.2015.03.033 The SRs contained in the body of evidence are provided in a supplement of *American Journal of Preventive Medicine*: American Journal of Preventive Medicine, Volume 49, Issue 2, Supplement 1, Pages S1-S123 (August 2015). Available online at: https://www.ajpmonline.org/issue/S0749-3797(15)X0002-X

Provide all other grades and definitions from the evidence grading system	USPSTF I Evidence obtained from at least one properly randomized controlled trial. II–1 Evidence obtained from well-designed controlled trials without randomization. II–2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group. II–3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence. III Opinions of respected authorities, based on clinical experience, descriptive studies and case reports, or reports of expert committees GRADE The implications of a strong recommendation are: • For patients—most people in your situation would want the recommended course of action and only a small proportion would not; request discussion if the intervention is not offered • For clinicians—most patients should receive the recommended course of action • For policy makers—the recommendation can be adopted as a policy in most situations. The implications of a weak recommendation are: • For patients—most people in your situation would want the recommended course of action, but many would not • For clinicians—you should recognize that different choices will be appropriate for different patients and that you must help each patient to arrive at a management decision consistent with her or his values and preferences • For policy makers—policy making will require substantial debate and involvement of many stakeholders.

Grade assigned to the **recommendation** with definition of the grade	A multistage process was used to develop the recommendations that drew on established procedures for developing clinical guidelines. First, an Expert Work Group was formed comprising family planning clinical providers, program administrators, and representatives from relevant federal agencies and professional medical associations to help define the scope of the recommendations. Next, literature about three priority topics (i.e., counseling and education, serving adolescents, and quality improvement) was reviewed by using the USPSTF methodology for conducting systematic reviews. The results were presented to three technical panels comprising subject matter experts (one panel for each priority topic) who considered the quality of the evidence and made suggestions for what recommendations might be supported on the basis of the evidence. In a separate process, existing clinical recommendations on women's and men's preventive services were compiled from more than 35 federal and professional medical associations, and these results were presented to two technical panels of subject matter experts, one that addressed women's clinical services and one that addressed men's clinical services. The panels provided individual feedback about which clinical preventive services should be offered in a family planning setting and which clinical recommendations should receive the highest consideration. CDC and OPA used the input from the subject matter experts to develop a set of core recommendations and asked the Expert Work Group to review them. The members of the Expert Work Group were more familiar with the family planning service delivery context than the members of the Technical Panel and thus could better comment on the feasibility and appropriateness of the recommendations, as well as the supporting evidence. The Expert Work Group considered the core recommendations by using the following criteria: 1) the quality of the evidence; 2) the positive and negative consequences of implementing the recommendations on health outcomes, costs or cost-savings, and implementation challenges; and 3) the relative importance of these consequences, (e.g., the likelihood that implementation of the recommendation will have a

Systematic Review	Evidence
	substantial effect on health outcomes might be considered more than the logistical challenges of implementing it). In certain cases, when the evidence from the literature reviews was inconclusive or incomplete, recommendations were made on the basis of expert opinion. Finally, CDC and OPA staff considered the individual feedback from Expert Work Group members when finalizing the core recommendations and writing the recommendations document. Summary can be found in Appendix B of the 2014 QFP (p. 35-44).
Provide all other grades and definitions from the recommendation grading system	A: There is good evidence to support the recommendation that the condition be considered specifically in a preconception care evaluation. B: There is fair evidence to support the recommendation that the condition be considered specifically in a preconception care evaluation. C: There is insufficient evidence to recommend for or against the inclusion of the condition in a preconception care evaluation, but recommendation to include or exclude may be made on other grounds. D: There is fair evidence to support the recommendation that the condition be excluded in a preconception care evaluation. E: There is good evidence to support the recommendation that the condition be excluded in a preconception care evaluation.

Systematic Review	Evidence
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	Quantity: Summaries of the evidence used to prepare these recommendations are published in 9 separate systematic reviews in the original 2014 version of the guideline, and a total of 132 studies are included in the 9 systematic reviews. Quality: CDC and the Office of Population Affairs developed QFP recommendations by conducting an extensive review of published evidence, seeking expert opinion, and synthesizing existing clinical recommendations from CDC, agencies such as the U.S. Preventive Services Task Force (USPSTF), and professional medical associations such as the American College of Obstetricians and Gynecologists and the American Academy of Pediatrics. Types of studies included in the systematic reviews included: randomized controlled trials (41 studies), non-randomized controlled trials, national survey data, prospective cohorts, case-control cohort, cross-sectional studies, pre-post studies, ecological evaluation, and descriptive studies Summary can be found in Appendix B of the 2014 QFP (p. 35-44). In addition, CDC published its methodology for the systematic reviews describing the evidence and their grading in the following paper: Tregear, S. J., Gavin, L. E., & Williams, J. R. (2015). Systematic Review Evidence Methodology: Providing Quality Family Planning Services. *American journal of preventive medicine*, *49*(2 Suppl 1), S23–S30. https://doi.org/10.1016/j.amepre.2015.03.033
Estimates of benefit and consistency across studies	QFP provides guidelines to provide family planning services, including the provision of contraception, to help women plan and space births, prevent unintended pregnancies, and reduce the number of abortions.

Systematic Review	Evidence
What harms were identified?	The harms were not listed in these guidelines. However, CDC clinical recommendations on contraceptive safety address this question. CDC's "US Medical Eligibility Criteria for Contraceptive Use" (USMEC) describe what contraceptive methods are safe for women with a range of characteristics (e.g., age, postpartum) and medical conditions (e.g., infectious, or chronic diseases). The citation for the USMEC recommendations is: Curtis, K. M., Tepper, N. K., Jatlaoui, T. C., Berry-Bibee, E., Horton, L. G., Zapata, L. B., Simmons, K. B., Pagano, H. P., Jamieson, D. J., & Whiteman, M. K. (2016). U.S. Medical Eligibility Criteria for Contraceptive Use, 2016. *MMWR. Recommendations and reports : Morbidity and mortality weekly report. Recommendations and reports*, *65*(3), 1–103. https://doi.org/10.15585/mmwr.rr6503a1

Systematic Review	Evidence
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Gavin L, Pazol K, Ahrens K. Update: Providing Quality Family Planning Services — Recommendations from CDC and the U.S. Office of Population Affairs, 2017. MMWR Morb Mortal Wkly Rep 2017;66:1383–1385. DOI: http://dx.doi.org/10.15585/mmwr.mm6650a4External Gavin L, Pazol K. Update: Providing Quality Family Planning Services — Recommendations from CDC and the U.S. Office of Population Affairs, 2015. MMWR Morb Mortal Wkly Rep 2016;65:231–234. DOI: http://dx.doi.org/10.15585/mmwr.mm6509a3 These two reviews revised and updated the 2014 version based on new scientific findings. They did not make a substantial shift in how family planning care should be provided. The American Academy of Family Physicians issued a clinical practice guideline recommendation in support of and advocating use for use of QFP, which did not change conclusions of original SR. This AAFP guideline is available online at: https://www.aafp.org/afp/2015/0501/p625.html In 2018, OPA updated and expanded several systematic reviews on the following topics addressed in the 2014 QFP: counseling and education (three updated and one new systematic review), serving adolescents (one updated and one new systematic review), and community education and engagement (one paper updating two previous systematic reviews). These articles did not change conclusions of the original SR and were published in a theme issue of *American Journal of Preventative Medicine*: American Journal of Preventative Medicine, Volume 55, Issue 5, Pages 677-690, (November 01, 2018). Available online at: https://www.ajpmonline.org/issue/S0749-3797(17)X0016-0#

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	Clinical Practice Guideline recommendation • US Medical Eligibility Criteria (US MEC) for Contraceptive Use, 2016. • CDC • 2016 • Curtis KM, Tepper NK, Jatlaoui TC, et al. U.S. Medical Eligibility Criteria for Contraceptive Use, 2016. MMWR Recomm Rep 2016;65(No. RR-3):1–104. DOI: http://dx.doi.org/10.15585/mmwr.rr6503a1 • http://dx.doi.org/10.15585/mmwr.rr6503a1

Systematic Review	Evidence
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	The United States Medical Eligibility Criteria for Contraceptive Use, 2016 (US MEC) includes recommendations for using specific contraceptive methods by women and men who have certain characteristics or medical conditions. The recommendations in this report are intended to assist health care providers when they counsel women, men, and couples about contraceptive method choice. This report serves as an update to the 2010 US MEC, which was adapted from the fourth edition of World Health Organization's *Medical Eligibility Criteria for Contraceptive Use* (WHO MEC). The SR concludes that most women, including those with certain characteristics (e.g., adolescents, postpartum) and medical conditions (e.g., infectious, or chronic diseases), can use most contraceptive methods safely to prevent pregnancy. Recommendations related to IUDs and implants are reported in this review. Women who have health conditions associated with increased risk for adverse health events as a result of pregnancy should consider long-acting, highly effective contraception. The 2016 US MEC recommendations are summarized in the following tables: https://www.cdc.gov/reproductivehealth/contraception/pdf/summary-chart-us-medical-eligibility-criteria_508tagged.pdf Safety of contraceptive methods is a component of the structure and process of the health care system, which affects the provision of contraceptive methods, including LARC. The recommendations aim to eliminate unneeded medical barriers to accessing and using contraception, which in turn may decrease the number of unintended pregnancies.

Systematic Review	Evidence
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed for reporting systematic reviews. The level of evidence from the systematic reviews for each evidence summary are provided based on the U.S. Preventive Services Task Force (USPSTF) system, which includes ratings for study design (I: randomized controlled trials; II-1: controlled trials without randomization; II-2: observational studies; and II-3: multiple time series or descriptive studies), ratings for internal validity (good, fair, or poor), and categorization of the evidence as direct or indirect for the specific review topic. Evidence in this guideline ranges from I to II-3, good to poor, direct to indirect, depending on the condition and contraceptive method evaluated. For the 2016 US MEC update, CDC published 13 systematic reviews describing the evidence and their grading related to new recommendations not previously included in the 2010 US MEC. These reviews are provided in a supplement of *Contraception*: Contraception, Volume 96, Issue 6, Pages 579-760 (December 2016). Available online at: https://www.sciencedirect.com/journal/contraception/vol/94/issue/6
Provide all other grades and definitions from the evidence grading system	The following grade from the USPSTF system was not assigned to evidence in this SR: III: Opinions of respected authorities, based on clinical experience, descriptive studies and case reports, or reports of expert committees.

Grade assigned to the **recommendation** with definition of the grade	Appendices B – J provide summaries of classifications for whether women with certain medical conditions or characteristics can use contraceptive methods. The following methods are included: IUDs, progestin-only contraceptives (including etonogestrel implants), combined hormonal contraceptives, barrier contraceptive methods, fertility awareness-based methods, lactational amenorrhea method, coitus interruptus, female and male sterilization, and emergency contraceptive pills. The four categories utilized to classify the use of contraceptive methods, including LARC methods, for women with certain medical conditions or characteristics are as follows: U.S. MEC 1 = A condition for which there is no restriction for the use of the contraceptive method. U.S. MEC 2 = A condition for which the advantages of using the method generally outweigh the theoretical or proven risks. U.S. MEC 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method. U.S. MEC 4 = A condition that represents an unacceptable health risk if the contraceptive method is used. Depending on the contraceptive methods and conditions, the grading ranges from U.S. MEC 1 – 4. The recommendations were developed as part of a multi-stage process. First, CDC reviewed the existing recommendations in the US MEC 2010 for new evidence identified through the WHO/CDC CIRE system that might result in a changed recommendation. CDC then held an initial expert panel meeting to obtain input and draft a list of topics to consider for the update, including new recommendations. Next CDC staff and other invited authors conducted independent systematic reviews for topics under consideration. These reviews were conducted to identify direct evidence about the safety of contraceptive methods use by women with selected conditions. At a second expert meeting, participants were asked to provide their input using the scientific evidence presented from the systematic reviews to develop potential

Systematic Review	Evidence
	recommendations. Feedback also was received from three external reviewers, composed of health care providers and researchers who had not participated in the update meetings. These reviewers were asked to provide comments on the accuracy, feasibility, and clarity of the recommendations. During the second expert meeting, areas of research that need additional investigation also were considered. Afterwards CDC chose and documented the recommendations in this report, taking into account the perspectives offered by expert meeting participants.
Provide all other grades and definitions from the recommendation grading system	Not applicable. All grades are included in the box above.
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	Quantity – Summaries of the evidence used to prepare the new recommendations issued in 2016 are published in 13 separate systematic reviews. These summaries included a total of 108 articles. Quality – The 108 articles described the following types of studies: randomized controlled trials, non-randomized controlled trials, prospective and retrospective cohort studies, case-control studies, pharmacokinetic studies, cross-sectional studies, and pooled analyses.
Estimates of benefit and consistency across studies	A broad range of contraceptive methods are safe for women with a range of characteristics (e.g., age, postpartum) and medical conditions (e.g., infectious, or chronic diseases). The goal of these recommendations is to remove unnecessary medical barriers to accessing and using contraception, thereby decreasing the number of unintended pregnancies.
What harms were identified?	Some harms were noted in the clarification column in each appendix. However, the individual studies comprising the body of evidence may have specifically identified potential adverse events related to contraceptive method use among women with certain health conditions and characteristics. CDC published 13 systematic reviews describing the evidence and their grading for this update in a supplement of *Contraception*: Contraception, Volume 96, Issue 6, Pages 579-760 (December 2016). Available online at: https://www.sciencedirect.com/journal/contraception/vol/94/issue/6

Systematic Review	Evidence
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	• American Academy of Family Physicians issued the following practice guidelines which support and advocate for the use of US MEC: ○ https://www.aafp.org/afp/2017/0115/afp20170115p125.pdf ○ https://www.aafp.org/afp/2016/1201/afp20161201p942.pdf ○ https://www.aafp.org/afp/2015/0501/afp20150501p625.pdf ○ https://www.aafp.org/afp/2012/0215/afp20120215p403.pdf These new guidelines did not change the SR's conclusions.

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	Clinical Practice Guideline recommendation • U.S. Selected Practice Recommendations for Contraceptive Use • Curtis KM, Jatlaoui TC, Tepper NK, et al. • 2016 • Curtis KM, Jatlaoui TC, Tepper NK, et al. U.S. Selected Practice Recommendations for Contraceptive Use, 2016. MMWR Recomm Rep 2016;65(No. RR-4):1–66. DOI: http://dx.doi.org/10.15585/mmwr.rr6504a1 • http://dx.doi.org/10.15585/mmwr.rr6504a1
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	Most women can start most contraceptive methods at any time, and few examinations or tests, if any, are needed before starting a contraceptive method. Routine follow-up for most women includes assessment of her satisfaction with the contraceptive method, concerns about method use, and changes in health status or medications that could affect medical eligibility for continued use of the method.

Systematic Review	Evidence
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Evidence in this guideline ranges from I to II-3, good to poor, direct to indirect, depending on the contraceptive methods provision and related services. The level of evidence from the systematic reviews for each evidence summary are provided based on the U.S. Preventive Services Task Force (USPSTF) system, which includes ratings for study design (I: randomized controlled trials; II-1: controlled trials without randomization; II-2: observational studies; and II-3: multiple time series or descriptive studies), ratings for internal validity (good, fair, or poor), and categorization of the evidence as direct or indirect for the specific review question. Evidence considered for use in SPR was considered in a multi-tiered approach. For the 2013 version of SPR, CDC initiated a process to adapt WHO SPR for the United States. This adaptation process included four steps: 1) determining the scope of and process for the adaptation, including an October 2010 meeting in which individual feedback was solicited from a small group of partners and experts; 2) preparing the systematic reviews of the evidence during October 2010–September 2011 to be used for the adaptation, including peer review; 3) convening a larger meeting of experts in October 2011 to examine the evidence and receive input on the recommendations; and 4) finalizing recommendations by CDC. Additional evidence was similarly garnered and considered for the 2016 update to SPR.

Systematic Review	Evidence
Provide all other grades and definitions from the evidence grading system	USPSTF I Evidence obtained from at least one properly randomized controlled trial. II–1 Evidence obtained from well-designed controlled trials without randomization. II–2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group. II–3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence. III Opinions of respected authorities, based on clinical experience, descriptive studies and case reports, or reports of expert committees
Grade assigned to the **recommendation** with definition of the grade	Appendix A of SPR provides a summary of classifications for hormonal contraceptive methods and intrauterine devices by condition, pregnancy, and age. (https://www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6504.pdf) , pages -53-61 Depending on the contraceptive methods and conditions, the grading ranges from U.S. MEC 1 – 4. Categories of medical eligibility criteria for contraceptive use: U.S. MEC 1 = A condition for which there is no restriction for the use of the contraceptive method. U.S. MEC 2 = A condition for which the advantages of using the method generally outweigh the theoretical or proven risks. U.S. MEC 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method. U.S. MEC 4 = A condition that represents an unacceptable health risk if the contraceptive method is used.

Systematic Review	Evidence
Provide all other grades and definitions from the recommendation grading system	Not applicable. All grades are included in the box above.
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	• Quantity – 353 Studies • Quality – study types included systematic reviews, meta-analyses, randomized controlled trials, clinical trials, diagnostic accuracy studies, and case series.
Estimates of benefit and consistency across studies	Most women can start most contraceptive methods at any time, and few examinations or tests, if any, are needed before starting a contraceptive method.
What harms were identified?	Because changes in bleeding patterns are one of the major reasons for discontinuation of contraception, recommendations are provided for the management of bleeding irregularities with various contraceptive methods. In addition, because women and health care providers can be confused about the procedures for missed pills and dosing errors with the contraceptive patch and ring, the instructions are streamlined for easier use.
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Not applicable.

Source of Systematic Review: • **Title** • **Author** • **Date** • **Citation, including page number** • **URL**	**Clinical Practice Guideline recommendation** • **Women's Preventive Services Guidelines** • **Health Resources and Services Administration (HRSA) and ACOG** • **2019 December 17** • **Health Resources and Services Administration. (2019, December). *Women's Preventive Services Guidelines*. U.S. Department of Health and Human Services, Health Resources and Services Administration. https://www.hrsa.gov/womens-guidelines/index.html** • **https://www.hrsa.gov/womens-guidelines/index.html**

Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	The Women's Preventive Services Initiative recommends that adolescent and adult women have access to the full range of female-controlled contraceptives to prevent unintended pregnancy and improve birth outcomes. Contraceptive care should include contraceptive counseling, initiation of contraceptive use, and follow-up care (e.g., management, and evaluation as well as changes to and removal or discontinuation of the contraceptive method). The Women's Preventive Services Initiative recommends that the full range of female-controlled U.S. Food and Drug Administration-approved contraceptive methods, effective family planning practices, and sterilization procedures be available as part of contraceptive care. The full range of contraceptive methods for women currently identified by the U.S. Food and Drug Administration include: (1) sterilization surgery for women, (2) surgical sterilization via implant for women, (3) implantable rods, (4) copper intrauterine devices, (5) intrauterine devices with progestin (all durations and doses), (6) the shot or injection, (7) oral contraceptives (combined pill), 8) oral contraceptives (progestin only, and), (9) oral contraceptives (extended or continuous use), (10) the contraceptive patch, (11) vaginal contraceptive rings, (12) diaphragms, (13) contraceptive sponges, (14) cervical caps, (15) female condoms, (16) spermicides, and (17) emergency contraception (levonorgestrel), and (18) emergency contraception (ulipristal acetate), and additional methods as identified by the FDA. Additionally, instruction in fertility awareness-based methods, including the lactation amenorrhea method, although less effective, should be provided for women desiring an alternative method.

Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	While grades of evidence is not presented in the guideline, below is how the recommendations were developed: The WPSI has contracted with physician scientists with extensive experience in systematic review methodology and clinical guideline development from the Pacific Northwest Evidence-based Practice Center (EPC) at Oregon Health & Science University to conduct reviews and updates of the evidence for each topic under consideration. Focused updates of evidence reviewed for the nine topics considered for revision include overviews of recent systematic reviews for the U.S. Preventive Services Task Force (USPSTF) published since the last recommendations were issued by the Institute of Medicine (IOM) Committee in 2011, as well as systematic reviews and key studies published since the most recent systematic reviews for the USPSTF. A research librarian conducted searches in Ovid MEDLINE, Cochrane Central Register of Controlled Trials, and Cochrane Database of Systematic Reviews through July 2016 for all topics. A best evidence approach was applied when reviewing abstracts and selecting studies to include for the updates that involves using the most relevant studies with the strongest methodologies. For well-woman visits and contraceptive methods and counseling, there are no USPSTF reviews or recommendations, therefore, other systematic reviews and studies published since the 2011 IOM recommendations for these topics were included. Randomized controlled trials and large (>100) prospective cohort studies were included if they provided relevant information for each topic. Other study designs, such as case-control and modeling studies, were included when evidence was lacking or when they demonstrated new findings. Studies conducted in settings applicable to the United States were targeted. The focus of each review was on gaps identified in the 2011 IOM recommendations and any new evidence that could change or additionally inform the recommendations

	where evidence was not previously available. Selection criteria specific to each topic were developed to address issues specific to the WPSI. Applicability is defined as the extent to which the effects observed in published studies are likely to reflect the expected results when a specific intervention is applied to the population of interest under "real-world" conditions. It is an indicator of the extent to which research included in a review might be useful for informing clinical decisions in specific situations. Factors important for understanding the applicability of studies were considered including differences in the interventions and comparators, populations, and settings. No new or revised statistical meta-analyses were conducted. Studies were qualitatively synthesized according to interventions, populations, and outcomes measured. Studies and their findings were summarized in a narrative, descriptive format to provide an overview of the new evidence for each topic. MSC members interact with the EPC to identify topics and scope. Updates to previous recommendations were evaluated using established methodology. In 2019, HRSA published updated guidelines online.
Provide all other grades and definitions from the evidence grading system	Not applicable.

Grade assigned to the **recommendation** with definition of the grade	While grades of recommendations are not presented in the guideline, below is how the recommendations were developed: In addition to current systematic reviews and randomized controlled trials, other supporting evidence is considered including organization guidelines and policies, epidemiologic data, and other relevant sources. Physician investigators from the EPC attend in-person and teleconference MSC meetings to assist with interpretation of evidence, including addressing queries about individual studies included in the literature search. Investigators work closely with the MSC, and each of the subcommittees, to provide expert perspective on the quality and strength of the supporting evidence. In addition, like the 2011 IOM Panel, the MSC panel considered multiple levels of evidence when developing the recommendations and permitted recommendations to be based on varying levels of evidence, expert consensus, or standard best practices.
Provide all other grades and definitions from the recommendation grading system	Preventive services recommended by the committee followed the criteria of the 2011 IOM Panel: • The condition to be prevented affects a broad population • The condition to be prevented has a large potential impact on health and well being • The quality and strength of evidence is supportive.
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	• 2 systematic reviews • 1 randomized controlled trial • 2 observational studies • 1 clustered randomized trial • 1 book chapter

Estimates of benefit and consistency across studies	The effectiveness of the full range of FDA-approved contraceptive methods for preventing or delaying pregnancy is well established. Effective comprehensive contraceptive care includes counseling, initiation, and follow-up. Contraceptive counseling and access to contraceptive methods is associated with increased contraceptive use and decreased unintended pregnancy rates. Long-acting reversible contraceptive (LARC) methods are the most effective reversible contraceptive option for most women, including nulliparous women and adolescents who are sexually active. Counseling on LARC methods is associated with lower pregnancy rates and lower rates of abortion and repeat abortion. Providing an increased supply of oral contraceptives at initiation is associated with higher continuation rates and lower unintended pregnancy rates.
What harms were identified?	The harms related to contraceptive method use were not listed in these guidelines. However, CDC clinical recommendations on contraceptive safety explicitly address this question. CDC's "US Medical Eligibility Criteria for Contraceptive Use" (USMEC) describe what contraceptive methods are safe for women with a range of characteristics (e.g., age, postpartum) and medical conditions (e.g., infectious, or chronic diseases). The citation for the USMEC recommendations is: Curtis, K. M., Tepper, N. K., Jatlaoui, T. C., Berry-Bibee, E., Horton, L. G., Zapata, L. B., Simmons, K. B., Pagano, H. P., Jamieson, D. J., & Whiteman, M. K. (2016). U.S. Medical Eligibility Criteria for Contraceptive Use, 2016. *MMWR. Recommendations and reports : Morbidity and mortality weekly report. Recommendations and reports*, *65*(3), 1–103. https://doi.org/10.15585/mmwr.rr6503a1
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Not applicable.

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	• Contraceptive Technology. 21st Ed • Hatcher RA, Nelson AL, Trussell J, Cwiak C, Cason P, Policar MS, Edelman A, Aiken ARA, Marrazzo J, Kowal D, eds. • 2018 • Hatcher RA, Nelson AL, Trussell J, Cwiak C, Cason P, Policar MS, Edelman A, Aiken ARA, Marrazzo J, Kowal D, eds. Contraceptive technology. 21st ed. New York, NY: Ayer Company Publishers, INC., 2018. • http://www.contraceptivetechnology.org/the-book/
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	• Use of the top-tier reversible contraceptives – the intrauterine devices (IUDs) and the contraceptive implant – entails the lowest risk of pregnancy. • Correct and consistent use of most contraceptive methods results in a low risk of pregnancy • Most contraceptives pose little risk to most users' health, although personal risk factors should influence personal choice.
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Grade not assigned, but *Contraceptive Technology* serves as the primary source of information about contraceptive failure rates and is cited by the World Health Organization, CDC, and leading health professional associations in the US and other countries.
Provide all other grades and definitions from the evidence grading system	Not applicable.
Grade assigned to the **recommendation** with definition of the grade	Grade not assigned, but *Contraceptive Technology* serves as the primary source of information about contraceptive failure rates and is cited by the World Health Organization, CDC, health care service delivery organizations, and leading health professional associations in the US and other countries.
Provide all other grades and definitions from the recommendation grading system	Not applicable.

Systematic Review	Evidence
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	Quantity – 3,136 total studies in book, 103 in the chapter on Efficacy, Safety, and Personal Considerations (p. 95-129) Quality – *Contraceptive Technology* serves as the primary source of information about contraceptive failure rates and is cited by the World Health Organization, CDC, and leading professional associations in the US and other countries. Two sources of data are used to estimate contraceptive failure. The first is published research comprised of results from clinical trials and surveys. The second source is CDC's National Survey of Family Growth (NSFG) is used to estimate typical use rates using data from a nationally representative sample of users.
Estimates of benefit and consistency across studies	Key findings of this review are estimated failure rates for a wide range of contraceptive methods under "perfect" and "typical" use. The most recent findings, published in 2018 are that the most effective methods, (LARC and sterilization) have a failure rate less than 1% per year under typical use; the moderately effective methods (shot/Depo, pills/patch/ring (PPR)) have a typical failure fate of 4-7%. PPR typical use failure rates have slightly (6 to 7%) increased from 2011 to 2018 while shot typical use failure rate has dropped from 6% to 4%. Diaphragm typical use failure rates have increased since the 2011 study and are no longer considered moderately effective.
What harms were identified?	Authors state that, "In general, contraceptives pose few serious health risks to users. Moreover, the use of contraceptive methods is generally far safer than pregnancy." (p. 111). The authors state that the absolute level of risk for death is very low for most people and that other major health risks from contraceptive use are uncommon and are most likely to occur in individuals with underlying medical conditions (p. 111).
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Not applicable.

Systematic Review	Review
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	• Contraceptive Counseling in Clinical Settings: An Updated Systematic Review • Lauren B Zapata, Karen Pazol, Christine Dehlendorf, Kathryn M. Curtis, Nikita M. Malcolm, Rachel B. Rosmarin, Brittni N. Frederiksen • 2018 November 1 • Lauren B. Zapata, Karen Pazol, Christine Dehlendorf, Kathryn M. Curtis, Nikita M. Malcolm, Rachel B. Rosmarin, Brittni N. Frederiksen, Contraceptive Counseling in Clinical Settings: An Updated Systematic Review, American Journal of Preventive Medicine, Volume 55, Issue 5, 2018, Pages 677-690. • https://doi.org/10.1016/j.amepre.2018.07.006
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	Overall, evidence supports the utility of contraceptive counseling, in general, and specific interventions or aspects of counseling. Promising components of contraceptive counseling were identified.

Systematic Review	Review
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Evidence in this guideline ranges from I to II-3, low to high risk of bias, depending on the age group of study participants (e.g., adolescents, young adults, adults, and mixed populations) and outcome type (e.g., long-, medium-, and short-term outcomes and client experiences). This SR is reported according to the PRISMA checklist. The strength and quality of the evidence in this SR are graded using on the U.S. Preventive Services Task Force (USPSTF) system, which includes ratings for study design (I: randomized controlled trials; II-1: controlled trials without randomization; II-2: observational studies; and II-3: multiple time series or descriptive studies) and risk of bias (low, moderate, high). The studies included in the SR were graded as follows: I: 12 studies (2 high risk, 10 moderate risk) II-1: 3 studies (2 high risk, 1 moderate risk) II-2: 11 studies (9 high risk, 2 moderate risk) II-3: 6 studies (6 high risk) Six key questions (KQs) were developed, and an analytic framework was utilized to describe the relationships between the population of interest; the intervention of interest; and the outcomes of interest.
Provide all other grades and definitions from the evidence grading system	Not applicable. All grades and definitions are included in the box above.
Grade assigned to the **recommendation** with definition of the grade	Not applicable.
Provide all other grades and definitions from the recommendation grading system	Not applicable.
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	Quantity – 35 articles; 32 studies Quality – 14 RCTs, 2 non-randomized trials, 5 cohort studies, 5 cross-sectional studies, and 6 pre-post studies

Systematic Review	Review
Estimates of benefit and consistency across studies	Overall, findings support the provision of contraceptive counseling, compared with no counseling, on contraceptive use behaviors. Six of nine studies among adolescents and young adults and 16 of 23 studies among adults or mixed populations found a statistically significant positive impact of counseling on at least one outcome of interest. Promising components of contraceptive counseling include an emphasis on the quality of interaction between counselor and client (e.g., developing rapport); personalizing discussions to meet clients' individual needs; and addressing psychosocial determine of contraceptive use behaviors (e.g., perceived benefits and barriers, outcome expectations. New components that resulted in some statistically significant positive effects include an emphasis on shared decision making, asking about the patient's reproductive life plan/pregnancy intentions, and discussion of contraceptive methods by level of effectiveness.
What harms were identified?	While the article did not identify any harms of contraceptive counseling, authors stated that following would strengthen the evidence base: improved documentation of counseling content and processes, increased attention to the relationships between client experiences and behavioral outcomes and examining the comparative effectiveness of different counseling approaches to identify those that are most effective.
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Not applicable.

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	Clinical Practice Guideline recommendation • Committee Opinion No. 710: Counseling Adolescents About Contraception • ACOG • 2017, reaffirmed 2019 • Committee Opinion No. 710 Summary: Counseling Adolescents About Contraception. (2017). Obstetrics and gynecology, 130(2), 486–487. https://doi.org/10.1097/AOG.0000000000002228 • https://doi.org/10.1097/AOG.0000000000002228
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	*Regardless of a patient's age or previous sexual activity, the obstetrician-gynecologist routinely should address her contraceptive needs, expectations, and concerns. * Statutes on the rights of minors to consent to health care services vary by state, and obstetrician-gynecologists should be familiar with the regulations that apply to their practice. * Emergency contraception routinely should be included in discussions about contraception, including access issues. The American College of Obstetricians and Gynecologists recommends that obstetrician-gynecologists write advance prescriptions for oral emergency contraception for their patients. * Long-acting reversible contraceptive (LARC) methods have higher efficacy, higher continuation rates, and higher satisfaction rates compared with short-acting contraceptives. Because LARC methods are safe, they are excellent contraceptive choices for adolescents. * Discussions about contraception should begin with information on the most effective methods first. * Obstetrician-gynecologists should be aware of and be prepared to address the most common misperceptions about contraceptive methods in a way that is age appropriate and compatible with the patient's health literacy. * The initial encounter and follow-up visits should include continual reassessment of sexual concerns, behavior, relationships, prevention strategies, and testing and treatment for sexually transmitted infections (STIs) per the Centers for Disease Control and Prevention's (CDC) guidelines.

Systematic Review	Evidence
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Not applicable.
Provide all other grades and definitions from the evidence grading system	Not applicable.
Grade assigned to the **recommendation** with definition of the grade	Not applicable.
Provide all other grades and definitions from the recommendation grading system	Not applicable.
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	Not applicable.
Estimates of benefit and consistency across studies	Modern contraceptives are very effective when used correctly and, thus, effective counseling regarding contraceptive options and provision of resources to increase access are key components of adolescent health care. Regardless of a patient's age or previous sexual activity, the obstetrician-gynecologist routinely should address her contraceptive needs, expectations, and concerns. Obstetrician-gynecologists should be aware of and be prepared to address the most common misperceptions about contraceptive methods in a way that is age appropriate and compatible with the patient's health literacy. The American College of Obstetricians and Gynecologists recommends that discussions about contraception begin with information on the most effective methods first.
What harms were identified?	At no time should an adolescent patient be forced to use a method chosen by someone other than herself, including a parent, guardian, partner, or health care provider.
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Not applicable.

Systematic Review	Evidence
Source of Systematic Review: • Title • Author • Date • Citation, including page number • URL	Clinical Practice Guideline recommendation • "Committee Opinion No. 642: Increasing Access to Contraceptive Implants and Intrauterine Devices to Reduce Unintended Pregnancy." • ACOG • 2015, reaffirmed 2018 • Committee Opinion No. 642: Increasing Access to Contraceptive Implants and Intrauterine Devices to Reduce Unintended Pregnancy. (2015). Obstetrics and gynecology, 126(4), e44–e48. https://doi.org/10.1097/AOG.0000000000001106 • https://doi.org/10.1097/AOG.0000000000001106
Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR.	* For all women at risk of unintended pregnancy, obstetrician-gynecologists should provide counseling on all contraceptive options, including implants and IUDs. * Encourage consideration of implants and IUDs for all appropriate candidates, including nulliparous women and adolescents. * Adopt best practices for LARC insertion. * Advocate for coverage and appropriate payment and reimbursement for every contraceptive method by all payers in all clinically appropriate circumstances. * Become familiar with and support local, state (including Medicaid), federal, and private programs that improve affordability of all contraceptive methods.
Grade assigned to the **evidence** associated with the recommendation with the definition of the grade	Not applicable.
Provide all other grades and definitions from the evidence grading system	Not applicable.
Grade assigned to the **recommendation** with definition of the grade	Not applicable.
Provide all other grades and definitions from the recommendation grading system	Not applicable.

Systematic Review	Evidence
Body of evidence: • Quantity – how many studies? • Quality – what type of studies?	Not applicable.
Estimates of benefit and consistency across studies	Unintended pregnancy persists as a major public health problem in the United States. Although lowering unintended pregnancy rates requires multiple approaches, individual obstetrician-gynecologists may contribute by increasing access to contraceptive implants and intrauterine devices. Obstetrician-gynecologists should encourage consideration of implants and intrauterine devices for all appropriate candidates, including nulliparous women and adolescents. Obstetrician-gynecologists should adopt best practices for long-acting reversible contraception insertion. Obstetrician-gynecologists are encouraged to advocate for coverage and appropriate payment and reimbursement for every contraceptive method by all payers in all clinically appropriate circumstances.
What harms were identified?	Not applicable.
Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR?	Not applicable.

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1a.4 OTHER SOURCE OF EVIDENCE

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

2021 Submission

Not applicable.

1a.4.1 Briefly SYNTHESIZE the evidence that supports the measure. A list of references without a summary is not acceptable.

2021 Submission

Not applicable.

1a.4.2 What process was used to identify the evidence?

2021 Submission

Not applicable.

1a.4.3. Provide the citation(s) for the evidence.

2021 Submission

Not applicable.

References

2021 References

Gavin, L., Moskosky, S., Carter, M., Curtis, K., Glass, E., Godfrey, E., Marcell, A., Mautone-Smith, N., Pazol, K., Tepper, N., Zapata, L., & Centers for Disease Control and Prevention (CDC) (2014). Providing quality family planning services: Recommendations of CDC and the U.S. Office of Population Affairs. *MMWR. Recommendations and reports: Morbidity and mortality weekly report. Recommendations and reports, 63*(RR-04), 1–54.

Gavin, L. E., Ahrens, K. A., Dehlendorf, C., Frederiksen, B. N., Decker, E., & Moskosky, S. (2017). Future directions in performance measures for contraceptive care: a proposed framework. *Contraception*, *96*(3), 138–144. https://doi.org/10.1016/j.contraception.2017.06.001

2016 Submission below

NATIONAL QUALITY FORUM—Evidence (subcriterion 1a)

Measure Number (*if previously endorsed*)**:**

Measure Title: Contraceptive Care – Postpartum

IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here: Click here to enter composite measure #/ title

Date of Submission: **2/15/2016**

Instructions

- *For composite performance measures:*
  - *A separate evidence form is required for each component measure unless several components were studied together.*
  - *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*
- Respond to all questions as instructed with answers immediately following the question. All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.
- If you are unable to check a box, please highlight or shade the box for your response.
- Maximum of 10 pages (*incudes questions/instructions*; minimum font size 11 pt; do not change margins). *Contact NQF staff if more pages are needed.*
- Contact NQF staff regarding questions. Check for resources at Submitting Standards webpage.

Note: The information provided in this form is intended to aid the Steering Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF's evaluation criteria.

1a. Evidence to Support the Measure Focus

The measure focus is evidence-based, demonstrated as follows:

- Health outcome: [3] a rationale supports the relationship of the health outcome to processes or structures of care. Applies to patient-reported outcomes (PRO), including health-related quality of life/functional status, symptom/symptom burden, experience with care, health-related behavior.
- Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured intermediate clinical outcome leads to a desired health outcome.
- Process: [5] a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured process leads to a desired health outcome.
- Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [4] that the measured structure leads to a desired health outcome.
- Efficiency: [6] evidence not required for the resource use component.

Notes

3. Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.
4. The preferred systems for grading the evidence are the U.S. Preventive Services Task Force (USPSTF) grading definitions and methods, or Grading of Recommendations, Assessment, Development and Evaluation (GRADE) guidelines.
5. Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.
6. Measures of efficiency combine the concepts of resource use and quality (see NQF's Measurement Framework: Evaluating Efficiency Across Episodes of Care; AQA Principles of Efficiency Measures).

1a.1. This is a measure of: (*should be consistent with type of measure entered in De.1*)

Outcome

☐ Health outcome: Click here to name the health outcome

☐Patient-reported outcome (PRO): Click here to name the PRO

PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors

☒ Intermediate clinical outcome (*e.g., lab value*): **Contraceptive use**

☐ Process:

☐ Structure:

☐ Other:

HEALTH OUTCOME/PRO PERFORMANCE MEASURE *If not a health outcome or PRO, skip to 1a.3*

1a.2. Briefly state or diagram the path between the health outcome (or PRO) and the healthcare structures, processes, interventions, or services that influence it.

Not a health outcome or PRO.

1a.2.1. State the rationale supporting the relationship between the health outcome (or PRO) to at least one healthcare structure, process, intervention, or service (*i.e., influence on outcome/PRO*).

***Note**: For health outcome/PRO performance measures, no further information is required; however, you may provide evidence for any of the structures, processes, interventions, or service identified above.*

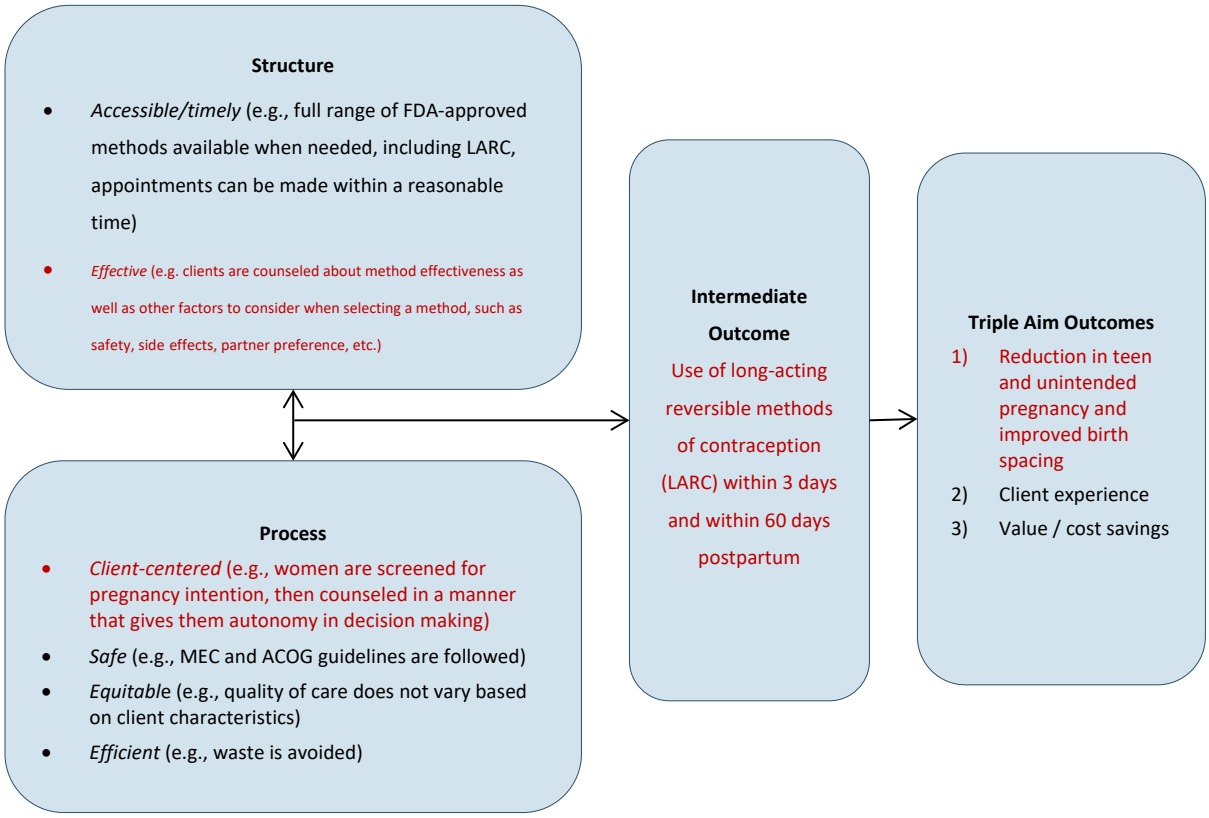
INTERMEDIATE OUTCOME, PROCESS, OR STRUCTURE PERFORMANCE MEASURE

1a.3. Briefly state or diagram the path between structure, process, intermediate outcome, and health outcomes. Include all the steps between the measure focus and the health outcome.

The diagram below illustrates the steps between the structure and process that influence the intermediate health outcome, and how the intermediate health outcome in turns influences the longer-term outcomes. The text highlighted in red shows the primary relationships that will be affected by use of the proposed measure: (a) increased use of the most and moderately effective methods of contraception will influence rates of unintended pregnancy; and (b) appropriate counseling of a client can lead to increased use of the most and moderately effective methods of contraception.

The type of contraceptive method used by a woman is strongly associated with her risk of unintended pregnancy. The **most** effective methods (sterilization and the long-acting reversible contraceptive [LARC] methods of intrauterine devices and implants) have a failure rate that is less than 1% per year under typical use; the **moderately** effective methods (shot, oral pills, patch, ring, and diaphragm) have a typical failure rate of 6-12% per year; the least effective methods have a typical failure rate of 18-28%; and if no method is used then 85 of every 100 women will become pregnant in a year (Trussell 2011).

The measure is secondarily supported by evidence that the way in which contraceptive counseling is offered (e.g., increased screening of clients for reproductive intention; the provision of client-centered counseling, which includes providing information about and ready access to the most and moderately effective methods of contraception; and ready access to all methods of contraception, ideally on a same-day basis) will lead to increased use of the most and moderately effective methods of contraception (i.e., the intermediate outcome).



1a.3.1. What is the source of the systematic review of the body of evidence that supports the performance measure?

☒ Clinical Practice Guideline recommendation – ***complete sections 1a.4, and 1a.7***

☐ US Preventive Services Task Force Recommendation – ***complete sections 1a.5 and 1a.7***

☒ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*) – ***complete sections 1a.6 and 1a.7***

☐ Other – ***complete section 1a.8***

Please complete the sections indicated above for the source of evidence. You may skip the sections that do not apply.

_____

1a.4. CLINICAL PRACTICE GUIDELINE RECOMMENDATION

1a.4.1. Guideline citation (*including date*) and **URL for guideline** (*if available online*):

Clinical recommendations (from both government sources and professional organizations) are the best source of evidence about the relationship between contraceptive counseling and increased use of the most and moderately effective methods of contraception (see diagram above).

CDC/OPA (2014). Providing Quality Family Planning Services (QFP): Recommendations of CDC and the US Office of Population Affairs, MMWR Recommendations and Reports, April 24, 2014. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6304a1.htm

American College of Obstetricians and Gynecologists (ACOG), Committee on Gynecologic Practice. Increasing access to contraceptive implants and intrauterine devices to reduce unintended pregnancy. Committee Opinion Number 642; October 2015.

ACOG *Long-acting reversible contraception: Implants and intrauterine devices*, in *Practice Bulletin*. 2015 (reaffirmed), American College of Obstetricians and Gynecologists: Washington, DC. p. 1-13.

The American Academy of Pediatrics (AAP) (2014). Contraception for Adolescents. Pediatrics, 134:e1244–e1256.

1a.4.2. Identify guideline recommendation number and/or page number and **quote verbatim, the specific guideline recommendation**.

"Providers are encouraged to present information on potential reversible methods of contraception by using a tiered approach (i.e., presenting information on the most effective methods first, before presenting information on less effective methods). This information should include an explanation that long-acting reversible contraceptive methods are safe and effective for most women, including those who have never given birth and adolescents. Information should be tailored and presented to ensure a client-centered approach. It is not appropriate to omit presenting information on a method solely because the method is not available at the service site. If not all methods are available at the service site, it is important

to have strong referral links in place to other providers to maximize opportunities for clients to obtain their preferred method that is medically appropriate."

Source: CDC/OPA (2014). *Providing Quality Family Planning Services*, page 8 and Appendix B

"For all women at risk of unintended pregnancy, obstetrician-gynecologists should provide counseling on all contraceptive options, including implants and IUDs. Long-acting reversible contraception methods require a single action of motivation for long-term use, eliminating adherence and user dependence from the effectiveness equation. These top-tier methods share the highest continuation rates of all contraceptives, which is one of the most important factors in contraceptive success."

Source: ACOG (2015), page 1.

"The immediate postpartum period is a particularly favorable time for IUD or implant insertion. Women who have recently given birth are often highly motivated to use contraception, they are known not to be pregnant and the hospital setting offers convenience for both the patient and the health care provider." ACOG (2015 Practice Bulletin), page 4.

"Contraceptive methods most commonly used by adolescents are listed below, ordered from most to least effective, starting with long-acting reversible contraception (LARC); implants and IUDs. *Pediatricians are encouraged to counsel adolescents in that order, discussing the most effective contraceptive methods first*." ACOG (2014), page e1246.

1a.4.3. Grade assigned to the quoted recommendation with definition of the grade:

Not applicable

1a.4.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: If separate grades for the strength of the evidence, report them in section 1a.7.*)

Not applicable

1a.4.5. Citation and URL for methodology for grading recommendations (*if different from 1a.4.1*)**:**

Not applicable

1a.4.6. If guideline is evidence-based (rather than expert opinion), are the details of the quantity, quality, and consistency of the body of evidence available (e.g., evidence tables)?

☒ Yes → ***complete section 1a.7***

☐ No → ***report on another systematic review of the evidence in sections 1a.6 and 1a.7; if another review does not exist, provide what is known from the guideline review of evidence in 1a.7***

1a.5. UNITED STATES PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

1a.5.1. Recommendation citation (*including date*) and **URL for recommendation** (*if available online*):

Not applicable

1a.5.2. Identify recommendation number and/or page number and **quote verbatim, the specific recommendation**.

Not applicable

1a.5.3. Grade assigned to the quoted recommendation with definition of the grade:

Not applicable

1a.5.4. Provide all other grades and associated definitions for recommendations in the grading system. (*Note: the grading system for the evidence should be reported in section 1a.7.*)

Not applicable

1a.5.5. Citation and URL for methodology for grading recommendations (*if different from 1a.5.1*)**:**

Not applicable

Complete section 1a.7

_____

1a.6. OTHER SYSTEMATIC REVIEW OF THE BODY OF EVIDENCE

1a.6.1. Citation (*including date*) and **URL** (*if available online*):

Two systematic literature reviews are the best source of evidence about the relationship between use of long-acting reversible methods of contraception (LARC) and unintended pregnancy (see diagram in 1a.3, above). A third systematic review focused on the provision of LARC methods in the immediate postpartum period.

1. The first review was led by Professor James Trussell from Princeton University, which is repeated on an ongoing basis and published in a handbook entitled "Contraceptive Technology". The Trussell analyses serve as the primary source of information about contraceptive failure rates, and are cited by the World Health Organization, CDC, and leading professional associations in the U.S. and in other countries. Trussell used two sources of data when estimating contraceptive failure. The first was published research, which comprised results from clinical trials and surveys. The second source was the CDC's National Survey of Family Growth (NSFG), which was used to estimate *typical* use rates using data from a nationally representative sample of users.

    - Trussell J (2011). Contraceptive efficacy. In: Hatcher RA, Trussell J, Nelson AL, Cates W, Kowal D,

editors. Contraceptive technology: twentieth revised edition. New York: Ardent Media; 2011, pp. 777–861. This was subsequently summarized in: Trussell J (2011). Contraceptive failure in the United States. Contraception; 83(5):397-404.

- WHO/Department of Reproductive Health and Research & Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (2011). Family Planning: A Global Handbook for Providers. Baltimore and Geneva: CCP and WHO.

2. The second review was conducted by Mansour et al in 2010. They search Medline and Embase from January 1990 to February 2008 for publications reporting contraceptive failure rates.

    - Mansour D, Inki P, Gemzell-Danielsson K (2010). Efficacy of contraceptive methods: A review of the literature. The European Journal of Contraception and Reproductive Health Care, 15:4-16.

3. A recent Cochrane systematic review examined the outcomes of IUD insertion immediately after placement delivery (within 10 minutes). Randomized clinical trials published through April 1, 2015 were identified in the following databases: PubMed, CENTRAL, POPLINE, Web of Science, EMBASE, LILACS, ClinicalTrials.gov, and ICTRP.

    - Lopez, L.M., et al., *Immediate postpartum insertion of intrauterine device for contraception.* Cochrane Database Syst Rev, 2015. **6**: p. CD003036.

1a.6.2. Citation and URL for methodology for evidence review and grading (*if different from 1a.6.1*)**:**

Evidence of contraceptive effectiveness & its impact on unintended pregnancy

- See 1a.6.1 above

Evidence of effectiveness of counseling or other interventions to affect patients' choice of method

- Zapata LB, Tregear SJ, Curtis KM, Tiller M, Pazol K, Mautone-Smith N, Gavin LE (2015). Impact of Contraceptive Counseling in Clinical Settings: A Systematic Review. Am J Prev Med. 2015 Aug;49(2 Suppl 1):S31-45.

Complete section 1a.7

1a.7. FINDINGS FROM SYSTEMATIC REVIEW OF BODY OF THE EVIDENCE SUPPORTING THE MEASURE

If more than one systematic review of the evidence is identified above, you may choose to summarize the one (or more) for which the best information is available to provide a summary of the quantity, quality, and consistency of the body of evidence. Be sure to identify which review is the basis of the responses in this section and if more than one, provide a separate response for each review.

1a.7.1. What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review?

Evidence of contraceptive effectiveness & its impact on unintended pregnancy

The studies examining contraceptive efficacy and effectiveness considered the impact of use of specific contraceptive methods on risk of pregnancy (i.e., contraceptive failure). Pregnancy risk can be assessed either through life table analyses (usually through 12 months) that show the percentage of women who become pregnant, or the score on the Pearl Index. The Pearl Index is a commonly used technique for reporting the effectiveness of a birth control method in clinical trials, and estimates the number of unintended pregnancies over a period of exposure (e.g. 100 women over one year of use, or 10 women over 10 years). Contraceptive failure rates are reported for *perfect use* and *typical use*. Perfect use reflects how effective methods can be in preventing pregnancy when used consistently and correctly according to instructions. Typical use reflects how effective methods are for the average person who does not always use methods correctly or consistently. Pregnancy rates during typical use of adherence-dependent methods (such as the oral pill) generally vary widely for different groups using the same method, primarily due to differences in the propensity to use the method perfectly. The review by Lopez et al (2015) focused on immediate postpartum insertion of IUDs (within 10 minutes) compared immediate insertion to insertion at other postpartum times. Key outcomes were expulsion and method use.

Evidence of effectiveness of counseling or other interventions to affect patients' choice of method

The systematic review underpinning the CDC-OPA recommendation on contraceptive counseling used an analytic framework that considered the impact of providing contraceptive counseling and/or education on short (e.g., client knowledge, attitudes), medium (e.g., selection of more effective methods, correct and consistent use) and long-term (unintended pregnancy) outcomes (Zapata 2015).

1a.7.2. Grade assigned for the quality of the quoted evidence with definition of the grade:

Evidence of contraceptive effectiveness & its impact on unintended pregnancy

While the quality of the studies was not graded in either the Trussell (2011) or Mansour (2010) review, they were primarily comprised of randomized controlled trials. The Lopez (2015) review applied principles from GRADE (Grades of Recommendation, Assessment, Development and Evaluation) to assess the quality of evidence as shown below, and found the body of evidence to be of moderate quality:

- **High quality:** Further research is very unlikely to change our confidence in the estimate of effect.
- **Moderate quality:** Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
- **Low quality:** Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
- **Very low quality:** We are very uncertain about the estimate.

Evidence of effectiveness of counseling or other interventions to affect patients' choice of method

The review did not grade the *overall* body of evidence. However, the quality of individual studies was graded in accordance with USPSTF methodologies for doing so, i.e., Level I, Level II-1, Level II-2, Level II-3, Level III.

1a.7.3. Provide all other grades and associated definitions for strength of the evidence in the grading system.

Not applicable

1a.7.4. What is the time period covered by the body of evidence? (*provide the date range, e.g., 1990-2010*). Date range

Trussell (2011): 1958-2010

Mansour (2010): January 1990 to February 2008

Lopez (2015): through April 1, 2015

Zapata (2015): 1985-February 2011 with supplemental searches through 2014

QUANTITY AND QUALITY OF BODY OF EVIDENCE

1a.7.5. How many and what type of study designs are included in the body of evidence? (*e.g., 3 randomized controlled trials and 1 observational study*)

Evidence of contraceptive effectiveness & its impact on unintended pregnancy

- **Trussell et al 2011**: The review comprised results from clinical trials and surveys; the most recent review listed more than 350 studies, of which the majority was randomized controlled trials (Trussell 2011a).

- **Mansour et al 2010**: The authors identified and extracted information from 139 publications. Of the included studies, 47 assessed combined oral contraceptives (COCs), one assessed progestogen-only pills (POPs), three assessed the patch, three assessed the vaginal ring, 15 assessed implants, 16 assessed injectables, 31 assessed copper intrauterine devices (Cu-IUDs), nine assessed the levonorgestrel-releasing intrauterine system (LNGIUS), three assessed the male condom, four assessed other barrier methods, 11 assessed natural methods, and four assessed female sterilization. Overall, there were 64 publications of randomized controlled studies included in this review. A detailed description of each publication can be accessed from www.informahealthcare.com/doi/pdf/10.3109/13625180903427675.

- **Lopez (2015).** Fifteen RCTs were identified, with seven studies reported from 2010-2014.

Evidence of effectiveness of counseling or other interventions to affect patients' choice of method

- **Zapata et al (2015)**: 22 studies (from 23 articles) met the inclusion criteria; 8 studies included use of more effective methods as an outcome. Seven of the 8 studies were randomized controlled trials, while the eighth utilized a pre-posttest study design.

1a.7.6. What is the overall quality of evidence across studies in the body of evidence? (*discuss the certainty or confidence in the estimates of effect particularly in relation to study factors such as design flaws, imprecision due to small numbers, indirectness of studies to the measure focus or target population*)

The quality of evidence is not described in either the Trussell (2011) or the Mansour (2010) publications. However, both reviews are substantially comprised of randomized controlled trials. The Lopez (2015) review determined that the overall body of evidence (comprised of 15 RCTs) was of moderate quality.

In Zapata et al (2011), 7 of the 8 studies were graded Level I (properly designed randomized controlled trial), and the 8th study was graded Level II-3 (evidence obtained from time series, uncontrolled trial).

ESTIMATES OF BENEFIT AND CONSISTENCY ACROSS STUDIES IN BODY OF EVIDENCE

1a.7.7. What are the estimates of benefit—magnitude and direction of effect on outcome(s) across studies in the body of evidence? (*e.g., ranges of percentages or odds ratios for improvement/ decline across studies, results of meta-analysis, and statistical significance*)

Evidence of contraceptive effectiveness & its impact on unintended pregnancy

- **Trussell et al 2011**: The key findings of this review are estimated failure rates for a wide range of contraceptive methods under "perfect" and "typical" use. The most recent findings – published in 2011 -- are that the **most** effective methods (LARC and sterilization) have a failure rate that is less than 1% per year under typical use; the **moderately** effective methods (shot, PPR, diaphragm) have a typical failure rate of 6-12% per year; the least effective methods have a typical failure rate of 18-28%; and not using any method at all has a failure rate of 85%.

- **Mansour et al 2010**: "Information was identified and extracted from 139 studies. One-year Pearl Indices reported for short-acting user-dependent hormonal methods were generally less than 2.5. Gross life-table rates for long-acting hormonal methods (implants and the levonorgestrel releasing-intrauterine system [LNG-IUS]) generally ranged between 0–0.6 per 100 at one year, but wider ranges (0.1–1.5 per 100) were observed for the copper intrauterine devices (0.1–1.4 per 100 for Cu-IUDs with surface area _300 mm2 and 0.6–1.5 per 100 for those with surface area5300 mm2). Barrier and natural methods were the least effective." The authors conclude that "the review broadly confirmed the hierarchy of contraceptive effectiveness in descending order as: (1) female sterilisation, long-acting hormonal contraceptives (LNG-IUS and implants); (2) Cu-IUDs with_300 mm2 surface area; (3) Cu-IUDs with5300 mm2 surface area and short-acting hormonal

contraceptives (injectables, oral contraceptives, the patch and vaginal ring), and (4) barrier methods and natural methods."

- **Lopez (2015):** A meta-analysis showed that IUC use at six months was more likely with immediate insertion than with standard insertion (OR 2.04; 95% CI 1.10 to 4.09; participants=243; studies=4). Expulsion was more likely for the immediate group, but the confidence interval was wide (OR 4.89; 95% CI 1.47 to 16.32; participants =210; studies=4). The review concludes that the "benefit of effective contraception immediately after delivery may outweigh the disadvantage of increased risk for expulsion. Frequent prenatal visits during the third trimester provide the opportunity to discuss effective contraceptive methods and desired timing for initiation. Clinical follow-up can help detect early expulsion, as can educating women about expulsion signs and symptoms."

Evidence of effectiveness of counseling or other interventions to affect patients' choice of method

- **Zapata (2015):** Five of the 8 studies that examined use of more effective methods found an increased rate of use in the intervention vs control/comparison conditions. Three studies found no significant impact. No studies found a decreased rate of use of more effective contraceptive methods.

1a.7.8. What harms were studied and how do they affect the net benefit (benefits over harms)?

The harms were not noted in the cited reviews. However, CDC clinical recommendations on contraceptive safety explicitly address this question. CDC's "US Medical Eligibility Criteria for Contraceptive Use" (USMEC) describe what contraceptive methods are safe for women with a range of characteristics (e.g., age, postpartum) and medical conditions (e.g., infectious or chronic diseases). The citation for the USMEC recommendations is:

> CDC (2010). US Medical Eligibility Criteria for Contraceptive Use, MMWR Recommendations and Reports, 59 (RR04):1–85. Available online at: http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/USMEC.htm."

The evidence on which the USMEC recommendations are based has been summarized in the following journal supplement:

> Contraception, Volume 82, Issue 1, Pages 1-118 (July 2010). Available online at: http://www.sciencedirect.com/science/journal/00107824/82/1

UPDATE TO THE SYSTEMATIC REVIEW(S) OF THE BODY OF EVIDENCE

1a.7.9. If new studies have been conducted since the systematic review of the body of evidence, provide for each new study: 1) citation, 2) description, 3) results, 4) impact on conclusions of systematic review.

Results from two large studies have been recently published, which provide additional evidence that: (a) long-acting reversible methods of contraception (LARC) are associated with reduced risk of unintended pregnancy, and (b) that the type of counseling provided is associated with selection of LARC methods by the client. The first study is a cluster-randomized trial led by researchers at the University of California – San Francisco (Harper 2015) and the second is a prospective cohort study that is known as "Project CHOICE" (Winner 2012).

UCSF trial (Harper et al 2015)

A cluster randomized trial was conducted in 2011-2013 to assess the effects of an intervention to increase patients' access to long-acting reversible contraceptives (LARCs) on pregnancy rates. A total of 40 clinics participated: 20 clinics were randomly assigned to receive evidence-based training on providing counselling and insertion of intrauterine devices (IUDs) or progestin implants, and 20 to provide standard care. Usual costs for contraception were maintained at all sites. Women aged 18-25 years attending family planning or abortion care visits and not desiring pregnancy in the next 12 months were recruited. The primary outcome was selection of an IUD or implant at the clinic visit and secondary outcome was pregnancy within 12 months. Generalised estimating equations for clustered data were used to measure the intervention effect on contraceptive selection, and survival analysis was used to assess pregnancy rates. Of 1500 women enrolled, more at intervention than control sites reported receiving counselling on IUDs or implants (565 [71%] of 797 vs 271 [39%] of 693, odds ratio 3·8, 95% CI 2·8-5·2) and more selected LARCs during the clinic visit (224 [28%] vs 117 [17%], 1·9, 1·3-2·8). The pregnancy rate was lower in intervention group than in the control group after family planning visits (7·9 vs 15·4 per 100 person-years), but not after abortion visits (26·5 vs 22·3 per 100 person-years). We found a significant intervention effect on pregnancy rates in women attending family planning visits (hazard ratio 0·54, 95% CI 0·34-0·85).

- Harper C, Rocca CH, Thompson KM, Morfesis J, Goodman S, Darney PD, Westhoff CL, Speidel JJ (2015). Reductions in pregnancy rates in the USA with long-acting reversible contraception: a cluster randomised trial. Lancet. Volume 386, No. 9993, p562–568, 8 August 2015

Project CHOICE (Secura et al 2014, Winner et al 2015)

The Contraceptive CHOICE Project was a prospective cohort study involving 9256 St. Louis area adolescent and adult women 14 to 45 years of age, in which women were counseled about the use of LARC methods to prevent unintended pregnancy. Participants were educated about reversible contraception, with an emphasis on the benefits of LARC methods, were provided with their choice of reversible contraception at no cost, and were followed for 2 to 3 years. Almost three-quarters of enrolled participants chose a LARC method when they were counseled about effectiveness and offered their choice of method at no charge, and continuation rates were high 2 years (77% for LARC users vs 41% for non-LARC users) and 3 years (67% for LARC users vs 31% for non-LARC users) after insertion. The contraceptive failure rate among participants using pills, patch, or ring was 4.55 per 100 participant-years, as compared with 0.27 among participants using long-acting reversible contraception (hazard ratio after adjustment for age, educational level, and history with respect to unintended pregnancy, 21.8; 95% confidence interval, 13.7 to 34.9).

- Winner B, Peipert J, Qiuhong Z, Buckel C, Madden T et al (2012). Effectiveness of Long-Acting

Reversible Contraception, The New England Journal of Medicine, 366 (21): 1998-2007

- Diedrich, J.T., et al., *Three-year continuation of reversible contraception.* Am J Obstet Gynecol, 2015. **213**(5): p. 662 e1-8.
- O'Neil-Callahan, M., et al., *Twenty-four-month continuation of reversible contraception.* Obstet Gynecol, 2013. **122**(5): p. 1083-91.

1a.8 OTHER SOURCE OF EVIDENCE – not applicable

If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.

1a.8.1 What process was used to identify the evidence?

1a.8.2. Provide the citation and summary for each piece of evidence.

1b. Performance Gap

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

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

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

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

Unintended pregnancies and interpregnancy intervals of less than 18 months have been associated with poor perinatal outcomes such as preterm birth, low birth weight, small size for gestational age, as well as adverse maternal outcomes [1, 2]. Studies among U.S. women report that women at younger maternal age are at higher risk for unintended pregnancy [14] and older maternal age is associated with closely spaced pregnancies [15]. Contraception is a highly effective clinical preventive service that can assist women in reaching their reproductive health goals, like reducing unintended pregnancies and the percentage of births occurring within 18 months of a previous birth [3, 4]. The type of contraceptive method used by a woman is strongly associated with her risk of unintended pregnancy [3-6]. The most effective methods (LARC and sterilization) have a failure rate that is less than 1% per year under typical use [4]. The moderately effective methods (injectable, pill, patch, ring) have a typical failure rate of 4-7% per year, while the less effective methods have a typical failure rate of 13-27% [4]. One recent analysis also indicates that the most used contraceptive methods in the United States have experienced reductions in their typical use failure rates [24]. Not using any method at all has a failure rate of 85% [4].

After NQF endorsed #2902 in 2016, OPA published multiple articles in peer-reviewed journals to inform providers delivering care in public and private settings (e.g., commercial health plans, Medicaid, community health centers, free-standing reproductive health clinics) about the new measure. These publications outline our conceptual framework for developing #2902 alongside its two complementary measures (NQF #2903 and #2904) and emphasize appropriate measure implementation and use. Furthermore, OPA highlighted systematic reviews which indicate that effective contraceptive method use increases the interbirth interval and reduces adolescent and unintended pregnancies. This association between use of effective contraception and positive reproductive health outcomes demonstrates the importance of contraceptive care measures to health care quality [25-27].

Because some contraceptive methods are more effective than others in preventing unintended pregnancy and in spacing births among postpartum women who wish to delay pregnancy, NQF #2902 focuses on utilization of these contraceptive methods among women within 3 and 60 days of delivery. The measure calculates contraceptive provision at two separate postpartum periods because current clinical guidelines offer recommendations related to both lengths of time after delivery. The 60-day period reflects ACOG recommendations that women should obtain contraceptive care at the 6-week postpartum visit [17]; AAP and CDC also recommend postpartum contraceptive provision and describe how it can be done so safely (see evidence report for details) [8-12]. The 3-day period reaffirms CDC and ACOG recommendations that the immediate postpartum period (i.e., at delivery, while the woman is at the hospital) is a safe and particularly effective time for women to obtain contraception if they desire it. Initiating use of contraception immediately postpartum can be convenient for the client since they are accessing health care services at the hospital post-delivery. Because some women may not attend a postpartum visit, inpatient contraceptive initiation can prevent missed opportunities to provide contraceptive care [17].

Many states have addressed barriers to postpartum LARC insertion in their Medicaid programs (i.e., by reimbursing separately for LARC in the immediate postpartum period, outside of the bundled delivery payment); in 2016 HHS CMS released an Information Bulletin describing the postpartum LARC payment and policy strategies employed by state Medicaid agencies at that time [18, 19]. The cost effectiveness of this practice for payers has been documented as well [20-22]. Given this context, we expect that use of NQF #2902 will continue to encourage more providers to follow ACOG [7, 17] and CDC [11, 12] recommendations to deliver patient-centered counseling about postpartum contraception to clients during prenatal care and at the postpartum visit. For women who want to use contraception after delivery, providers should discuss the possibility of obtaining LARC and the full range of contraceptive methods in the immediate postpartum period, the effectiveness of the different methods, and other factors that may help a woman select the method that is best for her [11]. Providers should advocate to make LARC available in the immediate postpartum inpatient setting or on a same-day basis in postpartum outpatient care [7, 23].

Thus, NQF #2902 is designed to encourage providers to offer those clients seeking contraception the full range of methods. For the NQF #2902 primary measure, OPA has not set a benchmark for it and does not expect scores to reach 100%. OPA also emphasizes that the NQF #2902 LARC sub-measure should not be used to encourage high utilization rates and that it would be an inappropriate measure to implement in a pay-for-performance context. This sub-measure aims to ensure access to LARC methods in the postpartum period by monitoring very low rates of provision (i.e., below 2%). The goal of providing contraception should never be to recommend any one method or class of methods over women's individual choices. Women who want to delay or prevent pregnancy after a recent live birth delivery should have access to a broad range of contraceptive methods, preferably on a same-day, on-

site basis. Furthermore, it is important that these contraceptive services are provided in a client-centered manner that treats each person as a unique individual with respect, empathy, and understanding, providing accurate, easy-to-understand information based on the client's self-identified needs, goals, preferences, and values [11]. Patients receiving client-centered care may feel motivated to continue seeking reproductive health care for contraception and if they become pregnant, prenatal care and birth [13]. Thus, efforts to provide client-centered contraceptive services aligned with American Academy of Pediatrics (AAP), ACOG, and CDC, and OPA recommendations [7-12] may be strengthened by quality improvement processes based on standardized metrics of contraceptive care provision.

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

Performance scores for this contraceptive care measure are presented for six programs which are: federal Medicaid efforts to support state use of the measures, and state Medicaid programs (i.e., the Iowa Medicaid Enterprise, Texas Medicaid, the Washington State Health Care Authority, MassHealth, Louisiana Medicaid). We analyzed NQF #2902 at the following levels: Clinician group/practice, Health Plan, State, and Public Health Region. We include descriptive statistics for each program and level of analysis below. For more details, see the Testing Attachment.

1. Centers for Medicaid & Medicare Services (CMS): Maternal and Infant Health Initiative, Core Measure Set

Federal Medicaid's use of NQF #2902 is demonstrated in two ways: first, as part of the Center for Medicaid and CHIP Services' (CMCS) Maternal and Infant Health Initiative from 2015 to 2018; and second, through the inclusion of the measure in the Adult and Child Core set.

Although CMCS' Maternal and Infant Health Initiative was implemented from 2015 to 2018, the overall measure scores were reported only for 60-days postpartum across 10 states Federal Fiscal Year (FFY) 2017.

Median Measure Scores, FFY 2017 (10 states)

Most and Moderately Effective Methods - 60 days Postpartum

Ages 15-20: 40.3

Ages 21-44: 36.5

Long-Acting Reversible Contraceptive (LARC) Methods - 60 days Postpartum

Ages 15-20: 13.4

Ages 21-44: 10.3

In FFY 2018, #2902 was reported for the first time in CMS's Adult and Child Core Set and then again in FFY 2019. The three-day postpartum measure scores for both most and moderately effective contraception (women ages 15-20: 3.4% in FFY 2018 vs. 4.1% in FFY 2019, women ages 21-44: 10.6% in FFY 2018 vs. 11.3% in FFY 2019) and long-acting reversible contraception (women ages 15-20: 1.4% in

FFY 2018 vs. 2.0% in FFY 2019, women ages 21-44: 0.8% in FFY 2018 vs. 12.6% in FFY 2019) increased for both age groups from FFY 2018 to FFY 2019. Sixty-day postpartum provision of most and moderately effective contraception increased slightly for both age groups (women ages 15-20: 40.8% in FFY 2018 vs. 41.8% in FFY 2019, women ages 21-44: 39.4% in FFY 2018 vs. 40.2% in FFY 2019) and 60-day long-acting reversible contraceptive provision slightly decreased for both age groups (women ages 15-20: 16.3% in FFY 2018 vs. 15.8% in FFY 2019, women ages 21-44: 12.9% in FFY 2018 vs. 12.6% in FFY 2019).

FFY 2018

Number of measured entities: 31 states

Most and Moderately Effective Methods – 3 days Postpartum

Ages 15-20

Median performance score: 3.4

Range (minimum - maximum): 0.01 – 17.8

Ages 21-44

Median performance score: 10.6

Range: 2.2 – 19.9

Most and Moderately Effective Methods – 60 days Postpartum

Ages 15-20

Median performance score: 40.8

Range (minimum - maximum): 7.4 – 56.1

Ages 21-44

Median performance score: 39.4

Range: 12.1 – 51.4

LARC Methods – 3 days Postpartum

Ages 15-20

Median performance score: 1.4

Range (minimum - maximum): 0.0 – 14.8

Ages 21-44

Median performance score: 0.8

Range: 0.0 – 7.6

LARC Methods – 60 days Postpartum

Ages 15-20

Median performance score: 16.3

Range (minimum - maximum): 2.3 –29.6

Ages 21-44

Median performance score: 12.9

Range: 2.5 – 18.3

FFY 2019

Number of measured entities: 32 states

Most and Moderately Effective Methods – 3 days Postpartum

Ages 15-20

Median performance score: 4.1

Range (minimum - maximum): 0.5 – 16.4

Ages 21-44

Median performance score: 11.3

Range: 3.4 – 20.3

Most and Moderately Effective Methods – 60 days Postpartum

Ages 15-20

Median performance score: 41.8

Range (minimum - maximum): 19.6 – 51.4

Ages 21-44

Median performance score: 40.2

Range: 12.7 – 51.7

LARC Methods – 3 days Postpartum

Ages 15-20

Median performance score: 2.0

Range (minimum - maximum): 0.1 – 12.6

Ages 21-44

Median performance score: 1.6

Range: 0.1 – 9.8

LARC Methods – 60 days Postpartum

Ages 15-20

Median performance score: 15.8

Range (minimum - maximum): 3.6 – 23.5

Ages 21-44

Median performance score: 12.6

Range: 3.4 – 22.2

For more information, see 2020 Adult Core Set Chart Pack FFY 2019 and 2019 Adult Core Set Chart Pack FFY 2018 (https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/adult-health-care-quality-measures/index.html); 2020 Child Core Set Chart Pack FFY 2019 and 2019 Child Core Set Chart Pack FFY 2018 (https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/childrens-health-care-quality-measures/index.html)

2. Iowa Medicaid Enterprise (IME)

The IME analysis included 14,223 postpartum women who received services from January 1 through December 31, 2018. The results for the primary measure showed that 9.71% of clients ages 15-44 with a live birth were provided a most of moderately effective method within 3 days of delivery; the measure score increases to 35.65% within 60 days of delivery. There was variation by public health region (n = 6) and clinician group/facility (n = 3,081).

For the sub-measure, approximately 1.7% of women with a live birth were provided at LARC method within 3 days of delivery; within 60 days of delivery this percentage increases to 11.2%. For more details, see the Testing Attachment.

Number of measured entities: 831 Clinician Groups/Practices

Number of included women ages 15-44 with a live birth delivery: 14,223

Dates included: January 1 through December 31, 2018

Most and Moderately Effective Methods – 3 days Postpartum

Mean performance score: 7.63

Standard deviation: 18.99

Range (minimum - maximum): 0.00, 100.00

Percentiles:

25th: 0.00

50th: 0.00

75th: 6.67

Scores by decile

0 – 10: 669

11 – 20: 78

21 – 30: 24

31 – 40: 13

41 – 50: 19

51 – 60: 1

61 – 70: 4

71 – 80: 1

81 – 90: 0

91 – 100: 22

Most and Moderately Effective Methods – 60 days Postpartum

Mean performance score: 33.32

Standard deviation: 35.76

Range (minimum - maximum): 0.00, 100.00

Percentiles:

25th: 0.00

50th: 26.09

75th: 50.00

Scores by decile

0 – 10: 339

11 – 20: 38

21 – 30: 64

31 – 40: 93

41 – 50: 105

51 – 60: 16

61 – 70: 30

71 – 80: 14

81 – 90: 1

91 – 100: 131

LARC Methods – 3 days Postpartum

Mean performance score: 0.54

Standard deviation: 5.285

Range (minimum - maximum): 0.00, 100.00

Percentiles:

25th: 0.00

50th: 0.00

75th: 0.00

Scores by decile

0 – 10: 820

11 – 20: 8

21 – 30: 0

31 – 40: 1

41 – 50: 0

51 – 60: 0

61 – 70: 0

71 – 80: 0

81 – 90: 0

91 – 100: 2

Number of entities with measure score <2%: 805

Percent of measured entities with measure score <2%: 96.9%

LARC Methods – 60 days Postpartum

Mean performance score: 8.14

Standard deviation: 19.77

Range (minimum - maximum): 0.00, 100.00

Percentiles:

25th: 0.00

50th: 0.00

75th: 7.69

Scores by decile

0 – 10: 647

11 – 20: 92

21 – 30: 31

31 – 40: 21

41 – 50: 12

51 – 60: 0

61 – 70: 0

71 – 80: 0

81 – 90: 0

91 – 100: 28

Number of entities with measure score <2%: 579

Percent of measured entities with measure score <2%: 69.7%

Number of measured entities: 6 Public Health Regions (Population Equivalents)

Most and Moderately Effective Methods – 3 days Postpartum

Mean performance score: 9.76

Standard deviation: 3.35

Range (minimum – maximum): 6.2 – 14.52

Most and Moderately Effective Methods – 60 days Postpartum

Mean performance score: 36.12

Standard deviation: 5.31

Range (minimum – maximum): 28.97 – 44.47

LARC Methods – 3 days Postpartum

Mean performance score: 1.32

Standard deviation: 1.65

Range (minimum – maximum): 0.15 – 4.00

Number of entities with measure score <2%: 4

Percent of measured entities with measure score <2%: 66.7%

LARC Methods – 60 days Postpartum

Mean performance score: 11.23

Standard deviation: 2.64

Range (minimum – maximum): 7.91 – 14.64

Number of entities with measure score <2%: 0

3. Texas Medicaid using CMS's T-MSIS Analysis Files

Using the Centers for Medicaid & Medicare Services T-MSIS Analysis Files (CMS TAF), NQF #2902 was calculated among female Medicaid clients aged 15-44 years who resided in Texas in 2016. A probability proportional to size sampling strategy was used to select a representative sample of 70 out of a total of 254 Texas counties located in 10 public health regions. Due to CMS TAF's small number suppression standard, small cells with n=10 in the dataset were suppressed and therefore, the analysis only contained records with both numerators and denominators =10. The final sample included 53,192 postpartum women who received services from January 1 through December 31, 2016. The results for the primary measure showed that 10.3% of clients ages 15-44 with a live birth were provided a most of moderately effective method within 3 days of delivery; the measure score increases to 32.4% within 60 days of delivery. There was variation by public health region (n = 10).

For the sub-measure, approximately 9.9% of women with a live birth were provided at LARC method within 60 days of delivery; the measure score for 3 days postpartum was unavailable in the CMS TAF sample. For more details, see the Testing Attachment.

Number of measured entities included: 251 Clinician Groups/Practices

Number of included women ages 15-44 with a live birth delivery: 53,192

Dates included: January 1 through December 31, 2016

Most and Moderately Effective Methods – 3 days Postpartum

Mean performance score: 12.0

Standard deviation: 5.9

Percentiles:

25th: 7.71

50th: 11.45

75th: 15.29

Range (minimum – maximum): 4.2 – 29.0

Scores by decile

0 – 10: 43

11 – 20: 39

21 – 30: 10

31 – 40: 0

41 – 50: 0

51 – 60: 0

61 – 70: 0

71 – 80: 0

81 – 90: 0

91 – 100: 0

Most and Moderately Effective Methods – 60 days Postpartum

Mean performance score: 39.00

Standard deviation: 14.8

Range: 7.73 – 78.57

Percentiles:

25th: 27.50

50th: 38.57

75th: 50.70

Scores by decile

0 – 10: 3

11 – 20: 31

21 – 30: 58

31 – 40: 84

41 – 50: 59

51 – 60: 57

61 – 70: 17

71 – 80: 6

81 – 90: 0

91 – 100: 0

LARC Methods – 3 days Postpartum

Mean performance score: 7.00

Standard deviation: 3.30

Range: 1.76 – 11.29

Percentiles:

25th: 3.90

50th: 6.63

75th: 8.86

Scores by decile

0 – 10: 8

11 – 20: 1

21 – 30: 0

31 – 40: 1

41 – 50: 0

51 – 60: 0

61 – 70: 0

71 – 80: 0

81 – 90: 0

91 – 100: 0

Number of entities with measure score <2%: 1

Percent of measured entities with measure score <2%: 0.39%

LARC Methods – 60 days Postpartum

Mean performance score: 16.00

Standard deviation: 7.70

Range: 3.13 – 50.00

Percentiles:

25th: 10.74

50th: 15.07

75th: 20.57

Scores by decile

0 – 10: 27

11 – 20: 54

21 – 30: 25

31 – 40: 2

41 – 50: 1

51 – 60: 0

61 – 70: 0

71 – 80: 0

81 – 90: 0

91 – 100: 0

Number of entities with measure score <2%: 0

Number of measured entities: 10 Public Health Regions

Most and Moderately Effective Methods – 3 days Postpartum

Mean performance score: 11.89

Standard deviation: 3.10

Range: 7.5 – 17.2

Most and Moderately Effective Methods – 60 days Postpartum

Mean performance score: 37.05

Standard deviation: 6.34

Range: 26.9 – 45.8

LARC Methods – 60 days Postpartum

Mean performance score: 10.0

Standard deviation: 1.75

Range: 6.4 – 12.2

Number of sampled entities with measure score <2%: 0

4. Washington State Health Care Authority (WA HCA)

The WA HCA analysis included 20,288 postpartum female Medicaid clients who resided in 39 counties and participated in 5 health plans. The results for the primary measure showed that 40.9% of clients ages 15-44 with a live birth in calendar year 2019 were provided a most of moderately effective method within 60 days of delivery; approximately 15.2% of women with a live birth were provided a LARC method within 60 days of delivery. There was variation by heath plan (n = 5). For more details, see the Testing Attachment.

Number of measured entities: 5 Health Plans

Number of included women ages 15-44 with a live birth delivery: 20,288

Dates included: January 1 through December 31, 2019

Most and Moderately Effective Methods – 60 days Postpartum

Mean performance score: 40.58

Standard deviation: 3.55

Range: 36.8 – 46.7

LARC Methods – 60 days Postpartum

Mean performance score: 14.88

Standard deviation: 2.50

Range: 9.9 – 16.3

Number of entities with measure score <2%: 0

5. Massachusetts Medicaid (MassHealth)

The MassHealth analysis included 18,856 female Medicaid clients who had a live birth delivery during calendar year 2019, resided in 14 counties, and participated in 21 health plans. Sixteen of these health plans were accountable care organizations. The results for the primary measure showed that 12.7% of clients ages 15-44 with a live birth were provided a most of moderately effective method within 3 days of delivery; the percentage increases to 49.5% within 60 days of delivery.

For the sub-measure, approximately 3.0% of women with a live birth were provided at LARC method within 3 days of delivery; within 60 days of delivery the measure score increases to 18.4%. Variation exists by health plan for both measures. For more details, see the Testing Attachment.

Number of measured entities: 21 Health Plans

Number of included women ages 15-44 with a live birth delivery: 18,856

Dates included: January 1 through December 31, 2019

Most and Moderately Effective Methods – 3 days Postpartum

Mean performance score: 12.09

Standard deviation: 6.46

Range: 0.00 – 29.8

Most and Moderately Effective Methods – 60 days Postpartum

Mean performance score: 47.73

Standard deviation: 5.74

Range: 36.7 – 60.3

LARC Methods – 3 days Postpartum

Mean performance score: 3.43

Standard deviation: 3.98

Range: 0.00 – 14.9

Number of entities with measure score <2%: 10

Percent of measured entities with measure score <2%: 47.6%

LARC Methods – 60 days Postpartum

Mean performance score: 18.51

Standard deviation: 6.57

Range: 11.8 – 40.0

Number of entities with measure score <2%: 10

Percent of measured entities with measure score <2%: 47.6%

6. Louisiana Medicaid (LA Medicaid)

The LA Medicaid analysis included 25,578 female Medicaid clients who had a live birth delivery during calendar year 2019, resided in 64 parishes, and participated in 5 health plans. The results for the primary measure showed that 11.6% of clients ages 15-44 with a live birth were provided a most of moderately effective method within 3 days of delivery; the percentage increases to 51.2% within 60 days of delivery.

For the sub-measure, approximately 2.4% of women with a live birth were provided at LARC method within 3 days of delivery; within 60 days of delivery the measure score increases to 13.8%. Variation exists by health plan for both measures. For more details, see attached Testing Attachment.

Number of measured entities: 5 Health Plans

Number of included women ages 15-44 with a live birth delivery: 25,578

Dates included: January 1 through December 31, 2019

Most and Moderately Effective Methods – 3 days Postpartum

Mean performance score: 11.55

Standard deviation: 0.85

Range: 10.8 – 12.9

Most and Moderately Effective Methods – 60 days Postpartum

Mean performance score: 51.03

Standard deviation: 1.49

Range: 49.0 – 52.9

LARC Methods – 3 days Postpartum

Mean performance score: 2.59

Standard deviation: 1.49

Range: 2.1 – 3.3

Number of entities with measure score <2%: 0

LARC Methods – 60 days Postpartum

Mean performance score: 14.13

Standard deviation: 1.23

Range: 12.8 – 15.9

Number of entities with measure score =2%: 0

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.

In a recent analysis of data from CDC's Pregnancy Risk Assessment Monitoring System (PRAMS) 2016-2018, approximately 53% of postpartum women reported using a most or moderately effective method of contraception, and 16.7% were using a LARC method (CDC, unpublished data – see the Testing Attachment).

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.*

We examined NQF #2902 measure scores by race/ethnicity from the Washington State Health Care Authority (WA HCA). For 2014-2018, WA HCA reported both the primary and sub-measure (https://www.hca.wa.gov/assets/program/ccp-contraceptive-care.pdf) for the 60-day postpartum period by age group and race/ethnicity. The percentages of women with a live birth delivery that were provided most and moderately effective methods by race/ethnicity remained stable over these five years.

In 2018, these NQF #2902 primary measure scores for ages 15-20 differed by race/ethnicity reported (note that race/ethnicity categories other than "Hispanic" report ethnicity as "Not Hispanic" or "Unknown"):

Hispanic: 24.4

White: 37.2

Asian: 19.4

Black: 24.5

American Indian/Alaska Native: 33.7

Hawaiian/Pacific Islander: 18.9

More than One Race: 34.9

Other/Unknown: 23.7

The 2018 primary measure scores for ages 21-44 also varied by race/ethnicity reported:

Hispanic: 33.1

White: 27.0

Asian: 26.0

Black: 26.1

American Indian/Alaska Native: 24.6

Hawaiian/Pacific Islander: 23.6

More than One Race: 29.9

Other/Unknown: 26.9

As stated on our website, OPA emphasizes that the NQF #2902 LARC provision rates "should be used as an access measure; very low rates (less than 1-2%) may signal barriers to LARC provision that should be addressed through training and quality improvement processes" (https://opa.hhs.gov/evaluation-research/title-x-services-research/contraceptive-care-measures/long-acting-reversible).

The available 2018 WA HCA sub-measure scores for ages 15-20 across race/ethnicity reported were all greater than 2% (scores for "Asian" and "Hawaiian/Pacific Islander" were suppressed due to small numbers):

Hispanic: 24.7

White: 17.5

Black: 17.7

American Indian/Alaska Native: 18.6

More than One Race: 15.8

Other/Unknown: 13.9

For ages 21-44, these sub-measure scores were greater than 2% for all race/ethnicity groups:

Hispanic: 20.1

White: 13.2

Asian: 13.2

Black: 14.8

American Indian/Alaska Native: 9.8

Hawaiian/Pacific Islander: 10.7

More than One Race: 13.9

Other/Unknown: 13.0

For the primary measure, opportunities for improvement may exist to ensure that all race/ethnicity groups have equal access to the full range of contraceptive methods within 60 days of delivery and receive patient-centered contraceptive care. These differences by socio-demographic characteristics might be explained in part by modifiable clinical and programmatic considerations rather than varying biological responses to contraception. Although providers may see some local variations by socio-demographic characteristics, we believe that these differences will be reduced if contraceptive services are offered in a client-centered manner, as defined by CDC and OPA's recommendations, Providing Quality Family Planning Services (https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6304a1.htm).

For the sub-measure, the postpartum LARC provision percentages available suggest that all race/ethnicity groups in the WA HCA system appear to have access to LARC methods in the 60 days after delivery because these measure scores were greater than or equal to 2%.

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

A special (unpublished) analysis of data from the Pregnancy Risk Assessment Monitoring System (PRAMS), 2016-2018, was conducted to further explore differences in the postpartum use of most and moderately effective and LARC methods of contraception. This analysis suggests that there are statistically significant differences by age group, marital status, as well as some race/ethnicity and income categories for use of most and moderately effective methods and LARC methods. There were no significant differences between most income categories. For more details, see the Testing Attachment.

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):*

Perinatal Health, Perinatal Health : Newborn Care

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

Access to Care, Primary Prevention

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

Children, Women

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

https://opa.hhs.gov/evaluation-research/title-x-services-research/contraceptive-care-measures/postpartum-most-or ; https://opa.hhs.gov/evaluation-research/title-x-services-research/contraceptive-care-measures/postpartum-long-acting

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 **:** NQF_2902_Codes_2021.xlsx

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

No, this is not an instrument-based measure **Attachment:**

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

Not an instrument-based measure

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

Yes

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

The measure specification has been changed for the primary measure to no longer include diaphragm as a moderately effective contraceptive method. A postpartum woman will no longer be included in the numerator if she only has codes indicating use of a diaphragm in the postpartum period, up to 60 days after her live birth delivery. This revision aligns the measure with the current edition of the clinical reference Contraceptive Technology (http://www.contraceptivetechnology.org/the-book/take-a-peek/contraceptive-efficacy/), which classifies the diaphragm as a less effective method of contraception due to higher typical use failure rates. Many public and reproductive health organizations cite and use the typical use failure estimates from Contraceptive Technology in their educational materials for clients and providers, including the Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO). Furthermore, removal of diaphragm from the primary measure numerator should not greatly impact measure scores because only a small proportion of postpartum women utilize a diaphragm as contraception.

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).*

Primary measure: Women ages 15 through 44 who had a live birth and were provided a most (sterilization, implant, intrauterine device) or moderately (injectable, pill, patch, or ring) effective method of contraception within 3 and 60 days of delivery.

Sub-measure: Women ages 15 through 44 who had a live birth and were provided a long-acting reversible method of contraception (LARC) within 3 and 60 days of delivery.

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 target population is women ages 15-44 who had a live birth and were provided a most or moderately effective method (primary measure) or a LARC method (sub-measure) of contraception. All

claims codes are found in the attached Excel file (NQF_2902_Codes_2021.xlsx). To identify the numerator, follow these steps:

Step 1 Use the codes in Table CCP-C to identify women who were provided a most (sterilization, IUD, implant) or moderately (injection, oral pills, patch, or ring) effective method of contraception in the measurement year. Use the codes in CCP-D to identify women who were provided a LARC method.

Step 2 Calculate the rates by dividing the number of women who were provided a most or moderately effective method of contraception or a LARC method by the number of women in the denominator. Calculate the rates separately for adolescents and adults.

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

Women ages 15 through 44 who had a live birth in a 12-month measurement year.

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

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

The target population is women ages 15 through 44 who had a live birth in a 12-month measurement year. In a Medicaid population, this includes women who were enrolled from the date of delivery to 60 days postpartum.

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

The following categories are excluded from the denominator: (1) deliveries that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth or induced abortion); and (2) deliveries that occurred during the last two months of the measurement year.

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.)*

Women are excluded from the denominator if they did not have an opportunity to receive contraception in the postpartum period (defined as within 60 days of delivery). All claims codes are found in the attached Excel file (NQF_2902_Codes_2021.xlsx). Follow the steps below to identify the eligible population:

Step 1 Identify live births and deliveries by using codes in Table CCP-A (This table includes codes from the HEDIS measure of Prenatal and Postpartum Care, and ICD-10-CM codes for live births were added). Some women may have more than one delivery in the measurement year; the measure is designed to identify unique live births (defined as those that occur >180 days apart) rather than women who had a live birth.

Step 2 Exclude deliveries that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth, or pregnancy termination) by using the codes in Table CCP-B . Codes for non-live births were also drawn from the HEDIS measure of Prenatal and Postpartum Care, and procedure codes (CPT, ICD-10-PCS codes) were added.

Step 3 Exclude deliveries that occurred during the last 2 months of the measurement year. These deliveries should be excluded from the denominator because there may not have been an opportunity

to provide the mother with contraception during the postpartum period. A two-month period was selected because the American College of Obstetricians and Gynecologists (ACOG) recommends having a postpartum visit by 6 weeks, and an additional 2 weeks was added to allow for reasonable delays in attending the postpartum visit.

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.)*

The primary stratification variable is age, so that adolescents can be examined separately from adult women for the purposes of quality improvement. Though their current clinical guidelines report that most and moderately effective contraceptive methods, including long-acting reversible contraceptive (LARC) methods, are safe and recommended for postpartum teen and adult populations who wish to use them, the American Academy of Pediatrics (AAP), ACOG, the Centers for Disease Control and Prevention (CDC), and Office of Population Affairs (OPA) note that it can still be difficult to access these highly effective contraceptive methods. Thus, it is important to monitor NQF #2902 measure scores for both age groups to assess access to the full range of most and moderately effective methods, and to identify reporting units with very low LARC provision (< 2%). We utilize age groups that are consistent with Center for Medicaid and CHIP Services (CMCS) reporting requirements; adolescents are defined as 15-20 years and adults are 21-44 years of age.

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 = Score within a defined interval

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.)*

Step 1 Identify live births that occurred in the measurement year. Some women may have more than one delivery in the measurement year; the measure is designed to identify unique live births (defined as those that occur >180 days apart) rather than women who had a live birth.

Step 2 Exclude the following deliveries:

- Those that did not end in a live birth (i.e., miscarriage, ectopic, stillbirth, or pregnancy termination).

- Those that occurred during the last 2 months of the measurement year. These deliveries should be excluded from the denominator because there may not have been an opportunity to provide the mother with contraception during the postpartum period.

Step 3 Define the numerator by identifying women in the denominator who were provided a most (sterilization, IUD, implant) or moderately (injection, oral pills, patch, or ring) effective method of contraception in the measurement year (primary measure). For the sub-measure, identify women who were provided a LARC method.

Step 4 Determine the date that the contraceptive method was provided, to identify women who were provided it: (a) within 3 days of delivery, and (b) within 60 days of delivery.

Step 5 Divide the number of women using a most or moderately effective method [or LARC, for the sub-measure] by the number of eligible women in the denominator to calculate the rates. Calculate the rates separately for the two age groups: adolescents and adults.

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.

Not applicable.

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.

Not applicable.

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

If other, please describe in S.18.

Claims

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.

Administrative claims data are used to calculate the measure. The data request should include an eligibility file, paid, suspended, pending, and denied claims with diagnosis codes and procedures codes (HCPCS, CPT, and ICD-10-PCS), as well as National Drug Code (NDC) codes.

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)*

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

Clinician : Group/Practice, Health Plan, Population : Regional and State

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

Other

If other: Primary care and reproductive health settings.

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

Not applicable.

3. Validity – See attached Measure Testing Submission Form

Postpartum_2902_nqf_testing_attachment_2021-4-27.docx

2.1 For maintenance of endorsement

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

Yes

2.2 For maintenance of endorsement

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

Yes

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1,2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

No - This measure is not risk-adjusted

Measure Testing (subcriteria 2a2, 2b1-2b6)

Measure Number (*if previously endorsed*)**:** 2902

Measure Title: Contraceptive Care – Postpartum

Date of Submission: **1/5/2021**

Type of Measure:

Measure	Measure (continued)
☐ Outcome (*including PRO-PM*)	☐ Composite – ***STOP – use composite testing form***
☒ Intermediate Clinical Outcome	☐ Cost/resource
☐ Process *(including Appropriate Use)*	☐ Efficiency
☐ Structure	*

*cell intentionally left blank

1. DATA/SAMPLE USED FOR ALL TESTING OF THIS MEASURE

Often the same data are used for all aspects of measure testing. In an effort to eliminate duplication, the first five questions apply to all measure testing. ***If there are differences by aspect of testing****,(e.g., reliability vs. validity) be sure to indicate the specific differences in question 1.7.*

1.1. What type of data was used for testing? (*Check all the sources of data identified in the measure specifications and data used for testing the measure. Testing must be provided for* ***all*** *the sources of data specified and intended for measure implementation.* ***If different data sources are used for the numerator and denominator, indicate N [numerator] or D [denominator] after the checkbox.***)

Measure Specified to Use Data From: (***must be consistent with data sources entered in S.17***)	**Measure Tested with Data From:**
☐ abstracted from paper record	☐ abstracted from paper record
☒ claims	☒ claims
☐ registry	☐ registry
☐ abstracted from electronic health record	☐ abstracted from electronic health record
☐ eMeasure (HQMF) implemented in EHRs	☐ eMeasure (HQMF) implemented in EHRs
☐ other:	☐ other:

1.2. If an existing dataset was used, identify the specific dataset (*the dataset used for testing must be consistent with the measure specifications for target population and healthcare entities being measured; e.g., Medicare Part A claims, Medicaid claims, other commercial insurance, nursing home MDS, home health OASIS, clinical registry*).

2021 Submission

Claims data from five organizations were used for testing:

(1) Iowa Medicaid Program (IME). The IME dataset comprised all female Medicaid clients aged 15-44 years who resided in 6 public health regions and participated in either fee-for-service care or in two health plans. During fiscal year 2019, Medicaid services in Iowa were provided primarily through one of two managed care organizations (MCO), although a small percentage of clients (approximately 7%) were provided care on a fee-for-service basis. Due to the small number of MCOs, reliability and validity were not assessed for this level using the IME data. We utilized the IME data for reliability and validity testing.

(2) The Centers for Medicaid and Medicare Services T-MSIS Analysis Files (CMS TAF). The CMS TAF are a research-optimized version of T-MSIS data created to meet the broad research needs of the Medicaid and CHIP data user community. These files include data on Medicaid and Children's Health Insurance Program (CHIP) enrollment, demographics, service utilization and payments. The CMS TAF consist of the

Annual Demographic and Eligibility (DE) File, providing information on the demographic, eligibility, and enrollment characteristics of Medicaid and CHIP beneficiaries, and four claim types: Inpatient, Long Term Care, Pharmacy, and Other Services.

For the purposes of this application, the CMS TAF dataset is comprised of female Medicaid clients aged 15-44 years who resided in Texas in 2016. A probability proportional to size sampling strategy was used to select a representative sample of 70 Texas counties located in 10 public health regions (out of a total of 254 counties in 11 public health regions). Due to CMS TAF's small number suppression standard, small cells with n≤10 in the dataset were suppressed and therefore, our data only contained records with both numerators and denominators ≥10. We utilized the CMS TAF Texas dataset for reliability testing.

In 2016, Texas Medicaid delivered contraceptive services to women through its general Medicaid program and two state-funded programs, Healthy Texas Women (HTW) and the Family Planning Program. HTW serves non-pregnant female clients who are ages 15 to 44, U.S. citizens and eligible immigrants residing in the state, do not currently receive full Medicaid benefits, CHIP, or Medicare Part A or B, do not have private health insurance that covers family planning services, unless filing a claim on the health insurance would cause physical, emotional, or other harm from a spouse, parent or other person; and have a countable household income at or below 200% of FPL. Clients younger than 18 years old must apply for HTW coverage with a parent or guardian. If ineligible for HTW, a female may qualify for general Medicaid or Family Planning Program services. Family Planning Program serves Texas male and female residents ages 64 years and younger who are at or below 250% FPL.

During fiscal year 2016, Medicaid services in Texas were provided primarily through 19 MCOs, although a small percentage of clients (approximately 8%) were provided care on a fee-for-service basis.

(3) Washington State Health Care Authority (WA HCA). In 2019, the WA HCA dataset contained all female Medicaid clients aged 15-44 years who resided in 39 counties and participated in 5 health plans. WA HCA provided contraceptive services to these women via the general Medicaid program or the state's family planning waiver programs, Family Planning Only and Family Planning Only – Pregnancy Related. Formerly known as Take Charge, Family Planning Only is a 1115 demonstration waiver program that serves low-income (up to 260% of FPL) uninsured clients seeking to prevent unintended pregnancy, and teens and domestic violence victims who need confidential family planning services. The Family Planning Only – Pregnancy Related program (previously known as the Family Planning Only extension) provides services to recently pregnant women who lose Medicaid coverage 60 days post-pregnancy. During fiscal year 2019, Medicaid services in Washington were provided primarily through 5 MCOs; about 85% of Washington's Medicaid clients were enrolled in managed care. We utilized the WA HCA data for reliability testing.

(4) **Massachusetts MassHealth (MA).** In 2019, the MA dataset contained all female Medicaid clients aged 15-44 years who resided in 14 counties and participated in 21 health plans. Sixteen of these health plans were accountable care organizations (ACO). An ACO is a group of doctors, hospitals, and other health care providers that work together with the goals of delivering better care to members, improving the population's health, and controlling costs. ACOs are accountable both for the health of their members and for the cost of the care their members receive. MA provided contraceptive services to these women via the general Medicaid program. Approximately 70% of Massachusetts Medicaid clients were enrolled in managed care. We utilized the MA data for reliability testing.

(5) **Louisiana Medicaid (LA Medicaid).** In 2019, the LA Medicaid dataset contained all female Medicaid clients aged 15-44 years who resided in 64 parishes and participated in 5 health plans. LA Medicaid provided contraceptive services to these women via the general Medicaid program or its family planning state plan amendment, Take Charge Plus (which is a different program than WA HCA's family planning waiver program). Take Charge Plus provides family planning and/or family planning-related services to low-income women or men (138% of FPL). In 2019, Medicaid services in Louisiana (excluding Medicaid-Medicare dual-eligibles) were provided primarily by 5 managed care plans which are administered by the state's Healthy Louisiana program. Approximately 15% of the Medicaid population not dually-eligible was continuously enrolled in traditional fee-for-service Medicaid. We utilized the LA data for reliability testing.

2016 Submission

Two claims datasets were used for testing:

(1) **Data from the Iowa Medicaid Program (IME).** The IME dataset comprised all female Medicaid clients aged 15-44 years who resided in 6 public health regions, and participated in either fee-for-service care or in two health plans. In 2013, Medicaid services in Iowa were provided primarily on a fee-for-service basis, although a small percentage of clients (approximately 10%) were provided care through one of two managed care organizations (MCO); for this reason, reliability was not assessed for this level using the IME data.

(2) **Data from the Louisiana Medicaid program (LM).** The LM dataset for 2014 included all female Medicaid enrollees aged 15-44 years who resided in any of the 9 Louisiana Public Health Regions, participated in either fee-for-service care or in one of the five health plans, and participated in either the general Medicaid program or the state's family planning waiver program. Louisiana Medicaid provides contraceptive services to women through its general Medicaid program and its family planning waiver program (Take Charge and Take Charge Plus). Take Charge Plus superseded Take Charge on September 1, 2014. Services are available to Louisiana uninsured Louisiana residents not eligible for Medicaid, Louisiana's CHIP program, or Medicare and who do not have private insurance. To be eligible for Take Charge services, the individual must be a woman between the ages of 19 and 44 with income at or below 200% percent of the federal poverty level. The guidelines for Take Charge Plus include women or men of any age with income at or below 138% of the federal poverty level. Take Charge benefits were extended until December 31, 2014, for those who, because of income, would not be eligible for Take Charge Plus. In 2014, Medicaid services in Louisiana (excluding Medicaid-Medicare dual-eligibles) were provided primarily by 5 Bayou Health managed care plans (3 traditional prepaid plans and 2 shared savings plans). Approximately 15% of the non-dual-eligible Medicaid population was continuously enrolled in traditional fee-for-service Medicaid.

1.3. What are the dates of the data used in testing?

2021 Submission

Data from WA HCA, MA, and LA Medicaid covered the period January 1, 2019 – December 31, 2019.

Data from IME covered the period January 1, 2018 – December 31, 2018.

Data from CMS TAF Texas covered the period January 1, 2016 – December 31, 2016.

2016 Submission

January 1 2013 – December 31 2014

Data from IME covered the period January 1, 2013 – December 31, 2013.

Data from LM covered the period January 1 2014 – December 31 2014.

1.4. What levels of analysis were tested? (*testing must be provided for **all** the levels specified and intended for measure implementation, e.g., individual clinician, hospital, health plan*)

Measure Specified to Measure Performance of: (*must be consistent with levels entered in item S.20*)	**Measure Tested at Level of:**
☐ individual clinician	☐ individual clinician
☐ group/practice	☒ group/practice
☐ hospital/facility/agency	☐ hospital/facility/agency
☒ health plan	☒ health plan
☒ other: public health region	☒ other: public health region

1.5. How many and which measured entities were included in the testing and analysis (by level of analysis and data source)? (*identify the number and descriptive characteristics of measured entities included in the analysis (e.g., size, location, type); if a sample was used, describe how entities were selected for inclusion in the sample*)

2021 Submission

Reliability

The measure was tested at 3 levels, as shown in the table below.

Level	Number of measure entities	Data Source
Group billing provider	251	CMS TAF Texas
Group billing provider	831	IME
Public health region	10	CMS TAF Texas
Public health region	6	IME
Health plan	5	WA HCA
Health plan	21	MA
Health plan	5	LA Medicaid

A probability proportional to size sampling strategy was used to select a representative sample of 70 out of a total of 254 Texas counties located in 10 public health regions. Due to CMS TAF's small number suppression standard, small cells with n≤10 in the dataset were suppressed and therefore, our data only contained records with both numerators and denominators >10.

Validity

Score Level Validity

The measure was tested at the group billing provider level (IME) as the reliability table shown above.

2016 Submission

Reliability

The measure was tested at two levels, as shown in the table below.

Level	Number of measured entities	Data Source
Health plan (Medicaid managed care)	*	Iowa Medicaid Enterprise
*	5	Louisiana Medicaid
Public health region	5	Iowa Medicaid Enterprise
*	9	Louisiana Medicaid

*cell intentionally left blank

Validity

A panel of experts assessed the measure's face validity.

1.6. How many and which patients were included in the testing and analysis (by level of analysis and data source)? (*identify the number and descriptive characteristics of patients included in the analysis (e.g., age, sex, race, diagnosis); if a sample was used, describe how patients were selected for inclusion in the sample*)

2021 Submission

Level of analysis	Number of patients: 15 – 20 years	Number of patients: 21-44 years	Number of patients: 15-44 years
Group Billing Provider, n = 831 (IME)	*	*	*
TOTAL	1,453	12,304	13,757
Range	0 – 72	0 – 888	1 – 981
Public Health Region, n = 6 (IME)	*	*	*
PHR 1	425	3,826	4,251

Level of analysis	Number of patients: 15 – 20 years	Number of patients: 21-44 years	Number of patients: 15-44 years
PHR 2	98	965	1,063
PHR 3	206	1,613	1,819
PHR 4	153	1,138	1,291
PHR 5	209	1,437	1,646
PHR 6	409	3,744	4,153
TOTAL	**1,500**	**12,723**	**14,223**
Group Billing Provider, n = 251 (CMS TAF Texas)	*	*	*
TOTAL	2,506	33,771	39,522
Range	24 – 234	20 – 1,702	22 – 1,911
Public Health Region, n = 10 (CMS TAF Texas)	*	*	*
PHR 1	79	300	379
PHR 2	108	392	500
PHR 3	1,388	10,202	11,590
PHR 4	356	1,818	2,174
PHR 5	273	1,288	1,561
PHR 6	3,283	24,052	27,335
PHR 7	798	5,464	6,262
PHR 8	232	1,191	1,423
PHR 9	80	359	439
PHR 11	269	1,260	1,529
TOTAL	**6,866**	**46,326**	**53,192**
Health Plan, n = 5 (WA HCA)	*	*	*
MCO 1	165	2,055	2,220
MCO 2	283	2,710	2,993
MCO 3	239	1,854	2,093
MCO 4	915	10,137	11,052
MCO 5	104	1,826	1,930

Level of analysis	Number of patients: 15 – 20 years	Number of patients: 21-44 years	Number of patients: 15-44 years
TOTAL	**1,706**	**18,582**	**20,288**
Health Plan, n = 21 (MA)	*	*	*
TOTAL	1,177	17,679	18,856
Range	0 - 211	10 – 3,135	10 – 3,346
Health Plan, n = 5 (LA Medicaid)	*	*	*
MCO 1	162	1,759	1,921
MCO 2	438	2,902	3,340
MCO 3	584	4,214	4,798
MCO 4	1,307	6,991	8,298
MCO 5	904	6,317	7,221
TOTAL	**3,395**	**22,183**	**25,578**

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2016 Submission

Level of analysis	Number of patients: Iowa Medicaid (15 – 20)	Number of patients: Iowa Medicaid (21 - 44)	Number of patients: Iowa Medicaid (15 – 44)	Number of patients: Louisiana Medicaid (15 – 20)	Number of patients: Louisiana Medicaid (21 – 44)	Number of patients: Louisiana Medicaid (15 – 44)
Health plan	*	*	*	*	*	*
MCO1	*	*	*	945	4,151	5,096
MCO2	*	*	*	941	4,024	4,965
MCO3	*	*	*	975	3,840	4,815
MCO4	*	*	*	1,291	5,749	7,040
MCO5	*	*	*	1,716	8,269	9,985
Total: Health Plan	*	*	*	**5,868**	**26,033**	**31,901**
Public health region	*	*	*	*	*	*
Region 1	606	2,787	3,393	926	5,734	6,660

Level of analysis	Number of patients: Iowa Medicaid (15 – 20)	Number of patients: Iowa Medicaid (21 - 44)	Number of patients: Iowa Medicaid (15 – 44)	Number of patients: Louisiana Medicaid (15 – 20)	Number of patients: Louisiana Medicaid (21 – 44)	Number of patients: Louisiana Medicaid (15 – 44)
Region 2	145	791	936	760	3,880	4,640
Region 3	314	1,412	1,726	540	2,495	3,035
Region 4	244	979	1,223	941	3,659	4,600
Region 5	331	1,183	1,514	485	1,765	2,250
Region 6	503	2,230	2,733	501	1,777	2,278
Region 7	*	*	*	760	3,162	3,922
Region 8	*	*	*	568	2,361	2,929
Region 9	*	*	*	666	3,000	3,666
Total: Public Health Region	**2,143**	**9,382**	**11,525**	**6,147**	**27,833**	**33,980**

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1.7. If there are differences in the data or sample used for different aspects of testing (e.g., reliability, validity, exclusions, risk adjustment), identify how the data or sample are different for each aspect of testing reported below.

2021 Submission

Not applicable.

2016 Submission

Not applicable.

1.8 What were the social risk factors that were available and analyzed? For example, patient-reported data (e.g., income, education, language), proxy variables when social risk data are not collected from each patient (e.g. census tract), or patient community characteristics (e.g. percent vacant housing, crime rate) which do not have to be a proxy for patient-level data.

2021 Submission

Reliability and validity of the measures were analyzed after stratifying by age group (e.g. adolescent compared to adult women of reproductive age). Given different care delivery models by age group, calculating the measure in this way is important to develop successful quality improvement initiatives and public health interventions. We utilized the age group categories developed by the Center for Medicaid and CHIP Services (CMCS), i.e., individuals aged 15 through 20 years (15-20) were defined as

adolescents, and individuals aged 21 through 44 years (21-44) were defined as adults of reproductive age.

2016 Submission

We assessed reliability of the measures after stratifying by age, i.e., adolescent versus adult. Teen pregnancy is worthy of a separate focus because of the large potential negative impact on the life of the teen and her child(ren), and the existence of unique programs and contraceptive counseling approaches tailored to this population. To define age groups, we used the categories developed by the Center for Medicaid and CHIP Services (CMCS), i.e., individuals aged 15 through 20 years (15-20) were defined as adolescents, and individuals aged 21 through 44 years (21-44) were defined as adults.

2a2. RELIABILITY TESTING

***Note**: If accuracy/correctness (validity) of data elements was empirically tested, separate reliability testing of data elements is not required – in 2a2.1 check critical data elements; in 2a2.2 enter "see section 2b2 for validity testing of data elements"; and skip 2a2.3 and 2a2.4.*

2a2.1. What level of reliability testing was conducted? (*may be one or both levels*)
☐ **Critical data elements used in the measure** (*e.g., inter-abstractor reliability; data element reliability must address ALL critical data elements*)
☒ **Performance measure score** (e.g., *signal-to-noise analysis*)

2a2.2. For each level checked above, describe the method of reliability testing and what it tests (*describe the steps—do not just name a method; what type of error does it test; what statistical analysis was used*)

2021 Submission

Several methods have been suggested to assess the reliability of provider-level performance measures (Adams, 2010; Scholle et al, 2008; Fung et al, 2010). These methods may focus on different facets of reliability such as consistency across time, consistency across raters or units, or variability at different levels of aggregation. The NQF has suggested a signal-to-noise approach as one way to evaluate measure reliability (Adams, 2009). For this application, reliability was estimated from a Beta-binomial model using parametric empirical Bayes methods. Two distributional shape parameters (alpha and beta) were estimated from the observed quality scores, and reliability was then calculated as a function of alpha, beta, and total patient count for each unit of analysis. Overall reliability in this context represents the ability of the proposed measure to confidently distinguish the performance of one entity (e.g., facility) from another. A detailed description of this method is demonstrated in the Appendix, where we lay out the formulation of the method and describe how it improves upon the Beta-binomial approach applied in previous studies (Adams, 2009; Adams and Paddock, 2017; Blair et. al., 2015; Kazis et. al., 2017; Staggs and Cramer, 2016).

Measure developers frequently recommended setting a minimum patient size for performance measurement when estimating at the facility or provider level because patient size has a large impact on reliability (HEDIS, 2007; Safran, 2007). In this analysis, we additional tested reliability using 75 as a cutoff of total patients served at each unit of analysis to show how such threshold impacts reliability.

Structure of the Data

Iowa Medicaid Enterprise dataset (IME). For Iowa Medicaid, we performed reliability testing at 2 different levels: public health region (n=6) and group billing provider (n=831). Iowa Medicaid data does not contain facility information. We used billing providers who registered as "organizations" to represent group practices. The additional use of a cutoff to exclude group billing providers who served less than 75 patients during the measurement year further ensures that we are only examining reliability among large group practices, rather than small rural practices that may only have one doctor, even if it is registered as a group practice.

The Centers for Medicaid and Medicare Services T-MSIS Analysis File (CMS TAF) dataset for Texas.

We performed reliability testing at 2 different levels: public health region (n=10) and group billing provider (n=251). CMS TAF data does not contain facility information. We used billing providers who registered as "organizations" to represent group practices. The additional use of a cutoff to exclude group billing providers who served less than 75 patients during the measurement year further ensures that we are only examining reliability among large group practices, rather than small rural practices that may only have one doctor, even if it is registered as a group practice.

Washington State Health Care Authority dataset (WA HCA). The Washington Medicaid program included 5 health plans. Reliability testing was performed at the health plan level. We only had 60-day postpartum data available and thus, reliability was not tested for 3-day postpartum contraceptive measures.

Massachusetts **MassHealth dataset (MA).** The Massachusetts Medicaid program included 21 health plans. Reliability testing was performed at the health plan level.

Louisiana Medicaid dataset (LA Medicaid). The Louisiana Medicaid program included 5 health plans. Reliability testing was performed at the health plan level.

2016 Submission

Several methods have been suggested to assess the reliability of provider-level performance measures (Adams, 2010; Scholle et al, 2008; Fung et al, 2010). These methods may focus on different facets of reliability such as consistency across time, consistency across raters or units, or variability at different levels of aggregation. The NQF has suggested a ***signal-to-noise*** approach as one way to evaluate measure reliability. According to Adams (2009), reliability can be assessed by the proportion of variance in a performance measure due to systemic differences across measured units (signal) in relation to random error (noise) within units.

When analytic units fall into a natural hierarchy (e.g. clients nested within health centers nested within health plan organizations), one can estimate multilevel variance components using hierarchical generalized linear modeling (HGLM) (Raudenbush and Bryk, 2002; Woltman et al, 2012). In this approach the within-provider regression coefficients are allowed to vary across providers as random effects. The covariance parameter for the random effect estimates the true between-provider variance

after accounting for within-provider variance. HGLM methods are robust and well-developed for continuous outcomes, and have more recently been applied to binary outcomes (Ridout, 1999; Molenberghs et al, 2007).

In the present analyses, multi-level mixed models were fit to each dataset using a hierarchical SAS 9.3 GLIMMIX procedure with a log link function. Parameters were estimated by pseudo-maximum-likelihood using the Laplace method (Ene et al, 2012). Modeling proceeded in a top-down manner starting from the largest unit of aggregation; the variance component (random coefficient) was always estimated for the top level.

Reliability was then calculated as a function of the intraclass correlation (ICC) and the median number cases per unit, using the Spearman-Brown prophecy (Eijkenaar et al, 2013). ICCs are derived using the estimated variance component for the level of interest divided by the total variance (Wu et al 2012; He et al, 2014). ICCs conceptually represent the proportion of total variation accounted for by the between-provider level, and thus follows the signal-to-noise framework suggested by NQF.

The HGLM method of estimation assumes a normally distributed error component; some authors have noted that ICCs on the logit scale can be inflated under certain circumstances when population rates are near the extremes (Wu et al, 2012). To provide more conservative estimation, medians were used in the Spearman-Brown reliability formula; the use of means would tend to bias estimates upward due to one or two atypically large provider units.

Structure of the Data

Iowa Medicaid Enterprise dataset. For IME data, modeling proceeded from the level of public health region (n=6).

Louisiana Medicaid Enterprise dataset. For this dataset, modeling proceeded from the levels of public health region (n=9) and the health plan (n=5).

2a2.3. For each level of testing checked above, what were the statistical results from reliability testing? (e.*g., percent agreement and kappa for the critical data elements; distribution of reliability statistics from a signal-to-noise analysis*)

2021 Submission

The table below shows summary results of the reliability analyses at three levels (public health region, group billing provider, and health plan), stratified by three age categories (15-20, 21-44, 15-44 years). Postpartum contraceptive provision was assessed for most and moderately effective contraceptive and LARC methods within 3-day and 60-day postpartum at the region and group billing provider levels. At the health plan level, only 60-day postpartum measures were available due to WA HCA's small number suppression standard. More detailed information including reliability estimates for each unit at public health region and health plan levels can be found in Tables 1-9 (appended at the end of the form).

Iowa Medicaid Enterprise, 2018

Measure	Level	Age Group	Results: Median N (all units)	Results: Reliability (all units)	Results: Median N (unit size ≥ 75)	Results: Reliability (unit size ≥ 75)
3-day	Region	15-44	1,819	**.948**	1819	**.948**
- -	- -	21-44	1,613	.943	1613	.943
- -	- -	15-20	209	.856	209	.856
60-day	Region	15-44	1,819	**.946**	1819	**.946**
- -	- -	21-44	1,613	.937	1613	.937
- -	- -	15-20	209	.734	209	.734
3-day LARC	Region	15-44	1,819	**.969**	1819	**.969**
- -	- -	21-44	1,613	.965	1613	.965
- -	- -	15-20	209	.874	209	.874
60-day LARC	Region	15-44	1,819	**.910**	1819	**.910**
- -	- -	21-44	1,613	.907	1613	.907
- -	- -	15-20	209	.013	209	.013
3-day MOST/MOD	Group billing provider	15-44	2	**.178**	137	**.848**
- -	- -	21-44	2	.178	155	.861
- -	- -	15-20	0	.201	1	NA*
60-day MOST/MOD	Group billing provider	15-44	2	**.243**	137	**.883**
- -	- -	21-44	2	**.227**	155	**.851**
- -	- -	15-20	0	**.126**	1	NA*
3-day LARC	Group billing provider	15-44	2	**.226**	137	**.927**
- -	- -	21-44	2	.231	155	.932
- -	- -	15-20	0	.215	1	NA*
60-day LARC	Group billing provider	15-44	2	**.162**	137	**.853**
- -	- -	21-44	2	.160	155	.815
- -	- -	15-20	0	.063	1	NA*

*Reliability could not be calculated because only one unit was in the analysis

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CMS TAF Texas, 2016

Measure	Level	Age Group	Results: Median N (all units)	Results: Reliability (all units)	Results: Median N (unit size ≥ 75)	Results: Reliability (unit size ≥ 75)
3-day MOST/MOD†	Region	15-44	1,561	**.901**	1561	**.901**
*	*	21-44	1,288	.921	1288	.921
60-day MOST/MOD	Region	15-44	1,561	**.946**	1561	**.946**
*	*	21-44	1,288	.931	1288	.931
*	*	15-20	273	.829	273	.829
60-day LARC‡	Region	15-44	1,561	**.723**	1561	**.723**
*	*	21-44	1,288	.517	1288	.517
*	*	15-20	314.5	.400	314.5	.400
3-day MOST/MOD†	Group billing provider	15-44	209	**.819**	222	**.827**
*	*	21-44	184	.818	192	.829
60-day MOST/MOD	Group billing provider	15-44	84.5	**.846**	151.5	**.923**
*	*	21-44	80	.840	153	.915
*	*	15-20	53	.761	158	.777
3-day LARC†	Group billing provider	15-44	413.5	**.870**	453.5	**.870**
*	*	21-44	398	.844	458	.844
60-day LARC	Group billing provider	15-44	156	**.805**	198.5	**.840**
*	*	21-44	177	.803	188.5	.822
*	*	15-20	61	.803	158	.767

†Reliability was not tested among the 15-20 age group for the 3-day postpartum measures due to limited number of units available in this age group

‡ Reliability was not tested for 3-day LARC due to limited number of units available in this age group

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Washington State Health Care Authority, 2019, by health plan

Measure	Age group	Results: Median N (all units)	Results: Reliability (all units*)
60-day MOST/MOD	15-44	2,606.5	**.926**
- -	21-44	2,382.5	.920
- -	15-20	261	.422
60-day LARC	15-44	2,606.5	**.888**
- -	21-44	2,382.5	.882
- -	15-20	261	.000

*Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

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Massachusetts MassHealth, 2019, by health plan

Measure	Age Group	Results: Median N (all units)	Results: Reliability (all units)	Results: Median N (unit size ≥ 75)	Results: Reliability (unit size ≥ 75)
3-day MOST/MOD	15-44	730	**.883**	753	**.928**
*	21-44	714	.869	753	.930
*	15-20	39	.717	98	.847
60-day MOST/MOD	15-44	730	**.822**	753	**.882**
*	21-44	714	.817	753	.894
*	15-20	39	.117	98	.182
3-day LARC	15-44	730	**.912**	753	**.953**
*	21-44	714	.893	753	.950
*	15-20	39	.740	98	.855
60-day LARC	15-44	730	**.839**	753	**.896**
*	21-44	714	.823	753	.900
*	15-20	39	.452	98	.535

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Louisiana Medicaid, 2019, by health plan

Measure	Age Group	Results: Median N (all units)	Results: Reliability (all units*)
3-day MOST/MOD	15-44	6,009.5	**.673**
- -	21-44	5,265.5	.644
- -	15-20	744	.587
60-day MOST/MOD	15-44	6,009.5	**.704**
- -	21-44	5,265.5	.652
- -	15-20	744	NA†
3-day LARC	15-44	6,009.5	**.585**
- -	21-44	5,265.5	.472
- -	15-20	744	.086
60-day LARC	15-44	6,009.5	**.683**
- -	21-44	5,265.5	.704
- -	15-20	744	.000

*Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

†Reliability could not be estimated due to failed model convergence.

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2016 Submission

The table below shows summary results of the reliability analyses for the two state Medicaid programs at the public health region and health plan levels, stratified by three age categories (i.e., 15-20, 21-44, and 15-44) and by 3- and 60-day postpartum. The cell sizes were very small for the 3-day estimates, so we only analyzed reliability for the combined 15-44 year age group. More detailed information about the analyses at each level can be found in Tables 1-4 (appended at the end of the form).

For each level, the overall reliability was estimated using the medians as previously mentioned. ICCs, an indicator of the proportion of variance explained by the groupings, are also shown. Similar studies of hierarchical binary outcomes estimate ICCs in a typical range of .02 - .18 (Fung et al, 2010).

Iowa Medicaid Enterprise

Measure	Level	Age Group	Results: Median N	Results: ICC	Results: Reliability
3-day MOST/MOD	Region	15-44	1,620	.0053	.8969
60-day MOST/MOD	Region	15-20	323	.0026	.4537
*	*	21-44	1,298	.0054	.8760
*	*	15-44	1,620	.0055	.8989
3-day LARC	Region	15-44	1,620	.4301	.9992
60-day LARC	Region	15-20	323	.0025	.4445
*	*	21-44	1,298	.0039	.8357
*	*	15-44	1,620	.0044	.8772

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Louisiana Medicaid

Measure	Level	Age Group	Results: Median N	Results: ICC	Results: Reliability
3-day most and moderately effective	**Health plan**	15-44	5,096	.0022	.9190
*	**Region**	15-44	3,666	.0085	.9693
60-day most and moderately effective	**Health plan**	15-20	975	.0112	9172
*	*	21-44	4,151	.0066	.9650
*	*	15-44	5,096	.0072	.9736
*	**Region**	15-20	666	.0026	.6364
*	*	21-44	3,000	.0033	.9082
*	*	15-44	3,666	.0028	.9125
3-day LARC	**Health plan**	15-44	5,096	.0120	.9841
*	**Region**	15-44	3,666	.1677	.9986
60-day LARC	**Health plan**	15-20	975	.0249	.9614
*	*	21-44	4,151	.0340	.9932
*	*	15-44	5,096	.0327	.9942
*	**Region**	15-20	666	.0381	.9634
*	*	21-44	3,000	.0271	.9882
*	*	15-44	3,666	.0299	.9912

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3-day postpartum (most/mod and LARC)

The estimated reliabilities for 3-day provision of both most/moderately effective and LARC methods were high across both Medicaid programs at region and health plan levels for the 15-44 age group (the range was from .8969 to .9992). The ICCs were highly variable, ranging from 0.002 to .430. These findings were sustained when we estimated reliabilities using the minimum patient volume rather than the median (see details in tables 1-4 appended at the end of this document). It is likely that the instances of unusually high ICCs were driven by the extremely low numbers of cases and low rates of provision for LARC (less than 1% in both Medicaid programs) which may have caused instability during estimation. More typical lower ICC estimates were found for most and moderately effective methods, as

might be expected given the limited variation in rates (see tables 1-4, appended at the end of this document).

60-day postpartum (most/mod and LARC)

The estimated reliabilities for 60-day provision of both most/moderately effective and LARC methods were high across both Medicaid programs at region and health plan levels for the 20-44 and 15-44 age groups (the range was from .8357 to .9942). For adolescents, the results were mixed. In Louisiana at the regional level reliabilities were high among adolescents for most/moderately effective and LARC methods (.9172, .9634, respectively), and at the health plan level for LARC (.9614). However, the reliability for the adolescent age group dropped below .70 for most and moderately effective (.4537) and LARC (.4445) methods at the regional level in Iowa; and for most and moderately effective methods (.6364) at the regional level in Louisiana. Overall, the ICCs were low in Iowa and were all below .01; In Louisiana, the ICCs were slightly higher and ranged from .003 to .038. These findings were sustained when we estimated reliabilities using the minimum patient volume rather than the median (see details in tables 1-4 appended at the end of this document).

2a2.4 What is your interpretation of the results in terms of demonstrating reliability? (i.*e., what do the results mean and what are the norms for the test conducted?*)

2021 Submission

It is commonly advised that reliability should be $\geq$ .90 for making high-stakes decisions, and $\geq$ .70 for general reporting/monitoring (Eijkenaar, 2013; Adams, 2010). Our tested reliability was mostly greater than .70 at the public health region and health plan levels, showing adequate reliability. This was mostly driven by the large number of patients per unit at these levels. Reliability at the health plan level for LA Medicaid was generally low compared to MA and WA. This is likely due to the low 3-day postpartum contraception provision rates as well as the limited variation of provision rates across health plans for both the 3-day and 60-day periods in LA. The low rate of 3-day postpartum contraceptive provision is in line with the national findings and is largely due to contraceptive (especially LARC) access barrier in the inpatient setting (Moniz, 2018). In addition, with only 5 health plans having very similar rates in LA, the ability to distinguish among health plans by measure performance is limited.

Iowa Medicaid and CMS TAF Texas data do not contain data on clinical service sites; large group billing providers (with eligible female patient volume of >75 per year) were used to represent group practices for these data. This minimum threshold was selected since the entire distribution of group billing providers is positively skewed, with a high number of small office practices (many seeing fewer than 10 eligible patients annually in Iowa Medicaid). As one would expect (and as shown in many prior studies), including very small practices makes estimates unstable and less reliable (falling below .70). However, with the minimum threshold of 75 eligible patients annually, reliability improves greatly, exceeding .70 in all cases for Iowa Medicaid. We also found adequate reliability ($\geq$ .70) for all age groups using the CMS TAF Texas data. Measure developers frequently recommend the minimum patient size approach for performance measurement when estimating at the facility or provider level (HEDIS, 2007; Safran, 2007) and our analysis suggests that a minimum of 75 patients yields sufficient reliability.

2016 Submission

In performing this analysis, we attempted to provide a conservative estimate of reliability wherever possible. Using medians rather than means, and presenting the 'floor' of reliability that may be observed for the smallest units, we bracket the results with worst-case scenarios.

For the 60-day measures of postpartum contraceptive use (both most/moderately effective and LARC methods), we found that most reliabilities were close to or exceeded the .90 threshold for reporting. Our conclusion is that there is sufficient reliability for reporting contraceptive rates for the 60-day postpartum period.

We also found high levels of reliability for the 3-day measures of postpartum contraceptive use (both most/moderately effective and LARC methods). However, it is likely that these high reliabilities were influenced by the extremely low numbers of cases and low rates of provision for LARC (less than 1% in both Medicaid programs), and by the limited variation in rates of provision for most and moderately effective methods. For this reason, we conclude that there is not yet sufficient reliability to reporting on the 3-day measure. However, these measures reflect a very new clinical practice and it is not surprising that the rates of provision are so low; we are optimistic that the reliabilities will be high once the rates are higher, as has been demonstrated with the 60-day measures. Given this, we recommend that NQF endorse the 3-day measures on a 'provisional' basis.

It is commonly advised that reliability should be $\geq$ .90 for making decisions, and $\geq$ .70 for general reporting/monitoring (Eijkenaar, 2013; Adams, 2010). The Spearman-Brown prophecy allows one to test different values for ICC and patient volume per unit in order to predict expected reliability. Using an ICC value near the 20th percentile as a conservative expected value among units, we computed the minimum recommended case load for each threshold of reliability:

- For the 60 day most/moderately effective measure, we looked at the full set of ICC values for regions and plans among all age groups. Using a 20th percentile value of .0027 ICC (i.e., 80% of ICC values would be expected above this level), we would recommend that regions or plans have at least 862 patient cases for reporting rates to maintain >.70 reliability, and 3,324 cases to maintain >.90 reliability.

- For the 60-day LARC measure, we similarly grouped the set of ICC values for regions and plans among all age groups. Using a 20th percentile ICC value of .0042, we would recommend that regions or plans have at least 553 patient cases for reporting rates to maintain >.70 reliability, and 2,134 cases to maintain >.90 reliability.

- For the 3-day most/moderately effective and LARC measures, we looked at the set of ICC values for regions and plans among the 15-44 age group only (we do not recommend stratifying by teen/adult at this time). Due to the provisional nature of both measures, we used the lowest estimated ICC of .0022 for both measures as our conservative floor. We would recommend that regions or plans have at least 1,058 patient cases for reporting rates to maintain >.70 reliability, and 4,082 cases to maintain >.90 reliability.

2b1. VALIDITY TESTING

2b1.1. What level of validity testing was conducted? (*may be one or both levels*)

☐ **Critical data elements** (*data element validity must address ALL critical data elements*)

☒ **Performance measure score**

☒ **Empirical validity testing**

☒ **Systematic assessment of face validity of performance measure score as an indicator** of quality or resource use (*i.e., is an accurate reflection of performance on quality or resource use and can distinguish good from poor performance*) **NOTE**: Empirical validity testing is expected at time of maintenance review; if not possible, justification is required.

2b1.2. For each level of testing checked above, describe the method of validity testing and what it tests (*describe the steps—do not just name a method; what was tested, e.g., accuracy of data elements compared to authoritative source, relationship to another measure as expected; what statistical analysis was used)*

2021 Submission

Empirical validity testing

We tested for convergent validity of the postpartum contraceptive measures by exploring whether they were correlated with other similar quality measures listed below:

- **Timeliness of prenatal care**: Percentage of deliveries of live births on or between November 6 of the year prior to the measurement year and November 5 of the measurement year that received a prenatal care visit in the first trimester, on the enrollment start date, or within 42 days of enrollment in Medicaid/CHIP.

  The original specification includes a look back period. Since only a single year of data is available, we adapted the specification to include only those women who could have had a first trimester visit during the measurement year. Assuming the mean gestational age to be 40 weeks, October 7 could be used as the start date for including women with deliveries during the measurement year. However, since the gestational age for a normal pregnancy mostly ranges from 38 to 42 weeks, women delivering between September 23 and November 5 were considered for inclusion. Further, a prenatal care visit is usually scheduled only around 6-8 weeks from the date of last menstrual period. To account for this time gap, 6 weeks were subtracted from September 23. Therefore, women who had a live birth delivery between August 12 and November 5 of the measurement year were included in the analysis.

- **Postpartum care**: Percentage of deliveries of live births on or between November 6 of the year prior to the measurement year and November 5 of the measurement year that had a postpartum visit on or between 21 and 56 days after delivery.

  The original postpartum care specification includes a look back period of about two months. Since only a single year of data is available, we adapted the specification to include deliveries that occur on or between January 1 and November 5 of the measurement year.

We hypothesize that facilities/providers that perform well on postpartum contraceptive care should perform well on prenatal and postpartum care and therefore, these related measures will be positively

correlated to the postpartum contraceptive care measures. These hypotheses are based on the assumption that these measure denominators represent the same group of women who received pregnancy-related clinical care over the same period of time. For example, postpartum contraceptive care is usually a part of the postpartum care service. We also hypothesize that the magnitude of the correlation may be attenuated given the limited overlap of population between the contraceptive care measures and the related measures, due to the modification of original specifications of the related measures. To test these correlations, we used two different approaches.

In the first approach, we used a Pearson's correlation test. This test estimates the strength of the linear association between two continuous variables. The correlation coefficient ranges from -1 to +1. A value of 1 indicates a perfect positive linear correlation between two variables. A value of 0 indicates no linear association. A value of -1 indicates a perfect negative linear relationship between two variables. We used a threshold of $p < .05$ to evaluate the statistical significance of test results.

Even though Pearson's correlation test is widely used to evaluate the correlation between two measures, it is only optimal in cases where linearity can be assumed. Crucially, the bounded nature of the variation in the proportion of contraceptive care measure (i.e., 0 and 1) means that estimates of association that assume linearity on the contraceptive care measure rates will be biased. This is a particular concern when the count of service events is either very high or very low relative to the total number of patients in a cluster. In addition, the correlations captured by the Pearson correlation matrix are averaged over the "true" and error variances. As a result, Pearson's correlation could downwardly bias the correlation substantially in cases when the clusters are small with few patients, and where the measurement error is high.

Given these limitations with Pearson's correlation test we present a novel alternative approach. We employ a multilevel correlation estimation method to test the relationship between the contraceptive care measure and the related measures. The model is based on a multivariate generalized linear mixed model framework (Coull and Agresti, 2000). By employing a logit transformation of the binomial proportions, the model relaxes the linearity assumption on the original measurement scale. In addition, it analytically separates "true" score variance from measurement error by presenting measurement error as a random, binomial deviate, conditional on each cluster's "true" quality measure. Thus, the multilevel correlation estimation approach captures the correlation more accurately when the cluster size is small.

In the present analyses, the parameters of the multilevel model were estimated using a hierarchical SAS 9.4 GLIMMIX procedure with a log link function and fully unstructured residual error. Parameters were estimated by pseudo-maximum-likelihood using the Laplace method. The error structure was reported as correlation coefficients and variances. We are also able to provide 95% confidence limits for the estimates using likelihood bounds, which is far more informative than the single p-value for statistical significance. Rather than estimating all possible pairwise associations simultaneously, we estimated each pairwise association in a separate model in order to speed up and increase the reliability of model convergence. In the appendix of the application, we provide a detailed description of the model with example statistical programing code.

Since Iowa Medicaid data does not contain facility information, we used billing providers who registered as "organizations" to represent group practices. In addition, we used a cutoff to exclude group billing providers who served less than 25 patients during the measurement year. This is to avoid including small

rural practices that only have one doctor, even if it is registered as a group practice. We were not able to use a higher cutoff due to limited number of units available for the analysis. Using both the "organization" type of billing provider and the patient count cutoff, we ensure that we are only testing score level validity among large group practices.

2016 Submission

We used a systematic process to assess the face validity of the performance measure, i.e., whether the corresponding measure scores correctly reflect the quality of care provided and adequately identify differences in quality. Nine experts with the following characteristics were identified: (1) expertise in the delivery of contraceptive services, as evidenced by employment in a clinical or managerial capacity for at least 3 years during which they delivered contraceptive services in a clinical setting (i.e., public and private family planning and primary care providers, or health administrators); and (2) expertise in the use of performance measures, as evidenced by participation in at least one effort to collect and use performance measurement data for the purpose of improving clinical services in the setting(s) in which they work. Below is the final list of experts who participated in the assessment:

1. Carol Brady, MA, Project Director, Florida Association of Healthy Start Coalitions, Inc.
2. Anne Burke, MD, Associate Professor, School of Medicine, Johns Hopkins Bayview Medical Center
3. Vanessa Dalton, MD, MPH, Associate Professor, Director, Program on Women's Health Care Effectiveness Research, University of Michigan
4. Anne Dunlop, MD, MPH, Program Director, Preventive Medicine Division, Emory University School of Medicine
5. Daryn Eikner, MS, Vice President of Health Care Delivery, National Family Planning & Reproductive Health Association
6. Jan Engstrom, PhD, RN, CNM, WHNP-BC, Professor & Acting Chairperson, Department of Women, Children and Family Nursing, College of Nursing, Armour Academic Center
7. Mark Hathaway, MD, MPH, Senior Technical Advisor, Jhpiego – Johns Hopkins University
8. Michael Policar, MD, MPH, Clinical Professor of Obstetrics, Gynecology, and Reproductive Sciences, UCSF School of Medicine
9. Linda Wheal, Maternal Health Program Manager, Bureau of Quality Management, Illinois Department of Healthcare and Family Services

We contacted the selected experts to confirm consent to participate via email. Each expert panelist was sent a disclosure form to report any relevant financial or other competing interests; disclosures were compiled with brief biographies and shared with all panelists. Upon receipt of the disclosure form we sent the participant information about the measure specifications and other background information about the measure. Participants then participated in a webinar designed to provide important background information about the measure, how it is computed, the NQF endorsement process, and how the face validity assessment will be used in the application package that will be submitted to NQF. After reviewing the measure specifications and participating in the webinar the participants completed a survey (anonymous) that asked the following question about the measure:

The scores obtained from the measure as specified will provide an accurate reflection of quality and can be used to distinguish good and poor quality in contraceptive services:

1=Strongly Disagree

3=Neither Agree nor Disagree

5=Strongly Agree

ICD-10 conversion

We tested the measure specifications based on 2014 codes, but have also included the codes needed to calculate the measure using ICD-10 and 2015 NDC codes. Both sets of codes are attached. Our goal was to convert the measure to a new code set, fully consistent with the intent of the original measure. A description of how we converted from ICD-9 to ICD-10 is provided below, for each table in the measure specifications.

- **Delivery resulting in a live birth (Table PCU-A)**

These codes were identified by copying the Deliveries Value Set from NCQA's Prenatal & Postpartum Care (PPC) measure (NQF#1517), excluding extraction of products of conception retained and ectopic. In the PPC measure, these codes are used to identify live births.

- **Known miscarriage, ectopic pregnancy, stillbirth, or induced abortion (Table PCU-B)**

These codes were identified by copying the Non-live Births Value Set from NCQA's Prenatal & Postpartum Care (PPC) measure (NQF#1517), as well as non-live birth codes in "Chapter 15: Pregnancy, Childbirth and Purperium (O00-O9A)". In the PPC measure, these codes are used to identify live births.

- **Contraceptive codes (Tables PCU-C, D and E)**

We used ICD-10 online conversion tools and confirming codes in the ICD-10-CM Expert for Physicians complete official code set. They were cross-checked against a ICD-10 conversion chart for family planning services that was prepared by Dr Michael Policar, from the University of California-San Francisco, and confirmed with a clinical expert, Denise Wheeler, MS, Family Planning Director at the Iowa Department of Public Health. NDC codes for 2015 were updated by using the codes for contraception contained in the HEDIS specifications for Chlamydia screening.

2b1.3. What were the statistical results from validity testing? (*e.g., correlation; t-test*)

2021 Submission

Empirical validity testing

Tables below show summary results of the score level validity analyses. Two statistical methods were utilized in this validity analysis to assess correlations between the measure and other clinical quality performance measures at the group billing provider level and stratified by three age categories (i.e., 15-20, 21-44, and 15-44). Results from two methods are shown side by side. We ran the analyses using a threshold to exclude billing providers with fewer than 25 eligible patients.

Most & Moderately Effective Methods 3-days Postpartum

Correlation with selected clinical quality measures, *Group Billing Provider,* IME 2018

Related measures	Age Group	Median unit size of related measures	Pearson r	Multilevel correlation estimation: Correlation coefficients	Multilevel correlation estimation: 95% Confidence Limits (lower, upper)
Postpartum Care	15-44	49.5	**.24***	**.37***	**(.12, .57)**
- -	21-44	48	.21*	.37*	(.11, .57)
- -	15-20	46	NA§	NA§	NA§
First Trimester Prenatal Care	15-44	61	**.29**	**.38***	**(.03, .63)**
- -	21-44	52	.31*	.39*	(.02, .65)
- -	15-20	46	NA§	NA§	NA§

*Statistically significant at p < .05

§ Estimates were not shown due to limited number of units (<10) that generate unstable estimates

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Most and Moderately Effective Methods 60-days Postpartum

Correlation with selected clinical quality measures, *Group Billing Provider*, IME 2018

Related measures	Age Group	Median unit size of related measures	Pearson r	Multilevel correlation estimation: Correlation coefficients	Multilevel correlation estimation: 95% Confidence Limits (lower, upper)
Postpartum Care	15-44	49.5	**.41***	**.54***	**(.35, .69)**
- -	21-44	48	.38*	.52*	(.30, .68)
- -	15-20	46	NA§	NA§	NA§
First Trimester Prenatal Care	15-44	61	**.49***	**.60***	**(.29, .77)**
- -	21-44	52	.52*	.60*	(.29, .78)
- -	15-20	43	NA§	NA§	NA§

*Statistically significant at p < .05

§ Estimates were not shown due to limited number of units (<10) that generate unstable estimates

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LARC Methods 3-days Postpartum

Correlation with selected clinical quality measures, *Group Billing Provider,* IME 2018

Related measures	Age Group	Median unit size of related measures	Pearson r	Multilevel correlation estimation: Correlation coefficients	Multilevel correlation estimation: 95% Confidence Limits (lower, upper)
Postpartum Care	15-44	49.5	**.09**	**.14**	**(-.16, .42)**
- -	21-44	48	.06	.10	(-.19, .39)
- -	15-20	36.5	NA§	NA§	NA§
First Trimester Prenatal Care	15-44	61	**.18**	**.29**	**(-.11, .61)**
- -	21-44	52	.28	.32	(-.13, .67)
- -	15-20	46	NA§	NA§	NA§

*Statistically significant at p < .05

§ Estimates were not shown due to limited number of units (<10) that generate unstable estimates

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LARC Methods 60-days Postpartum

Correlation with selected clinical quality measures, *Group Billing Provider*, IME 2018

Related measures	Age Group	Median unit size of related measures	Pearson r	Multilevel correlation estimation: Correlation coefficients	Multilevel correlation estimation: 95% Confidence Limits (lower, upper)
Postpartum Care	15-44	49.5	**.30***	**.43***	**(.18, .61)**
- -	21-44	48	.31*	.45*	(.20, .64)
- -	15-20	36.5	NA§	NA§	NA§
First Trimester Prenatal Care	15-44	61	**.37***	**.42***	**(.08, .67)**
- -	21-44	52	.45*	.51*	(.17, .74)
- -	15-20	46	NA§	NA§	NA§

*Statistically significant at p < .05

§ Estimates were not shown due to limited number of units (<10) that generate unstable estimates

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2016 Submission

The mean rating for the most/moderately effective postpartum measure was 4.22 with a median of 4.5 (between Agree and Strongly Agree), range 3-5. There were 44.4% (n = 4) of respondents who strongly agreed, 33.3% (n = 3) of respondents who agreed, and 22.2% (n = 2) of respondents who neither agreed nor disagreed that the score obtained from the most/moderately effective postpartum measure, as specified, will provide an accurate reflection of quality and can be used to distinguish good and poor quality in contraceptive services.

The mean rating for the LARC postpartum measure was 3.78 with a median of 4 (Agree), range 1-5. There were 33.3% (n = 3) of respondents who strongly agreed, 33.3% (n = 3) of respondents who agreed, 22.2% (n = 2) of respondents who neither agreed nor disagreed, and 11.1% (n = 1) of respondents who strongly disagreed that the scores obtained from the LARC postpartum measure, as specified, will provide an accurate reflection of quality and can be used to distinguish good and poor quality in contraceptive services.

One respondent replied that he or she "feels STRONGLY that the adoption of these measures will promote providers' and practices' attention to reproductive planning and contraceptive care as part and parcel of women's primary health care." One respondent replied that he or she thinks that "the proposed measures are valid measures of quality contraceptive care for healthy women" and "the proposed measures are valid indicators of contraceptive care in postpartum women who are NOT breastfeeding." However, he or she thought, "the measures are of questionable validity in postpartum women who are breastfeeding. Breastfeeding women are being advised not to accept hormonal contraceptives during the first months after birth while exclusively breastfeeding. Postpartum women are specifically advised against the early administration of normal contraceptives." He or she thought "that although providers may offer highly effective contraceptives to postpartum women and be proficient within the administration and management of the contraceptive, more women will refuse the contraceptives. Also of concern is that some clinicians do not want to be perceived as undermining breastfeeding, so they may not broach the subject out of fear of being labeled 'anti-breastfeeding.' Additionally, the Academy of Breastfeeding Medicine's statement on contraceptive choice during breastfeeding makes providers reluctant to offer or administer the most effective hormonal methods, especially in the early postpartum period. He or she noted, "This is truly a situation in which two major public health initiatives collide." One respondent thought the most/moderately effective postpartum measure should extend to 90 days postpartum, not 60 days.

2b1.4. What is your interpretation of the results in terms of demonstrating validity? (i.*e., what do the results mean and what are the norms for the test conducted?*)

2021 Submission

Empirical validity testing

Coefficients with absolute values of less than 0.3 are generally considered indicative of weak associations whereas absolute values of 0.3 or higher denote moderate to strong associations. For most or moderately effective 3-day and 60-day postpartum contraceptive measures, the multilevel correlation estimation method showed statistically significant moderate to strong positive correlation with both related measures for the 21-44 and the 15-44 age groups at the group billing provider level. In comparison, Pearson's correlation results indicated weak to moderate positive correlations for the same age groups. We did not present associations between the postpartum contraceptive care measures with

related measures for the 15-20 age group due to the limited number of units and total patient count for this age group that generated unstable estimates.

For LARC provision, no correlation was observed between 3-day postpartum contraceptive care and either of the related measures at the group billing provider level. This was expected given the very low rate of the 3-day LARC measure (< 2%) and thus a low variation of the measure across units of analysis. The low rate of the 3-day postpartum LARC provision is in line with the national findings and is largely due to LARC access barrier in the inpatient setting (Moniz, 2018). We found moderate positive associations between 60-day LARC use and the two related measures for the 15-44 and 21-44 age groups at the group billing provider level using both methods. The association could not be calculated for the 15-20 age group due to limited number of units in the analysis for this age group.

Generally, the magnitude of correlation was weaker using Pearson's correlation, as expected since the distributional assumptions of this method are a poor fit to binary outcomes, resulting in underestimation. Although the Pearson correlation can be a rough approximation of correlation in binary outcomes for large units, cluster sizes become much smaller at the billing provider level, resulting in further attenuation. We demonstrate that our generalized linear multilevel estimation more closely captures the "true" correlation between two measures, and is better suited for binary outcomes and smaller units of analysis.

Overall, we observed weak to moderate positive correlations between the postpartum contraceptive care measures with postpartum care and first trimester prenatal care that (in theory) should be related; these were consistent with our hypotheses. The weak to moderate magnitude of the correlation was expected given the limited overlap of population between the contraceptive care measures and the related measures due to the modification of original specifications of the related measures. Our results provide reasonable evidence for validity of the postpartum contraceptive care measures at the score level.

2016 Submission

We think that the responses to the face validity assessment indicate that the measure assessing provision of most/moderately effective methods will provide an accurate reflection of quality and can be used to distinguish good and poor quality in contraceptive services.

There was less support for the measure assessing provision of LARC in the postpartum period. There were also concerns expressed about the validity of the measure for breastfeeding women, especially within 90 days of delivery. Despite these reservations, OPA suggests that the LARC measure be approved on a provisional basis so that more experience can be gained using the measures. We will convene an expert panel within 2 years of endorsement to review results and make suggestions for revising the measure, as needed.

2b2. EXCLUSIONS ANALYSIS

NA ☐ no exclusions — *skip to section 2b4*

2b2.1. Describe the method of testing exclusions and what it tests (*describe the steps—do not just name a method; what was tested, e.g., whether exclusions affect overall performance scores; what statistical analysis was used*)

2021 Submission

The rationale for exclusion is due to the fact that some women's deliveries did not end in a live birth and they might have wanted to get pregnant soon after their non-live birth. Also, women with live births that occurred in the last 2 months of the measurement year might not have had a chance to receive postpartum care in the 60-day time frame and were therefore, excluded.

After limiting our datasets to women 15-44 years of age who had a live birth during the measurement year, the following exclusions were analyzed for frequency and variability across various units included in our analysis. Codes utilized for the exclusions are in the tables referenced (see the Excel file named NQF 2902 Codes 2021.xlsx).

1. Deliveries that did not end in a live birth (i.e., miscarriage, stillbirth, ectopic pregnancy, pregnancy termination) were excluded by utilizing the codes in Table CCP-B. These non-live birth codes were drawn from the HEDIS measure of Prenatal and Postpartum Care, and procedure codes (CPT, ICD-10-PCS codes) were added.
2. Live birth deliveries that occurred in the last 2 months of the measurement year were excluded by utilizing the codes in Table CCP-A. A two-month period was selected because the American College of Obstetricians and Gynecologists (ACOG) recommends having a postpartum visit by 6 weeks, and an additional 2 weeks was added to allow for reasonable delays in attending the postpartum visit.

To exclude these cases, live birth deliveries were first identified by using the codes listed in Table CCP-A, Codes Indicating a Live Birth Delivery. Codes for live birth include CPT and ICD-10-PCS codes also from the HEDIS measure of Prenatal and Postpartum Care, and ICD-10-CM codes for live births were added.

Exclusions were performed in a hierarchical manner in the order listed above.

2016 Submission

Exclusions were not formally tested. The rationale for exclusion was due to the fact that some women are not at risk of unintended pregnancy due to infecundity or pregnancy.

2b2.2. What were the statistical results from testing exclusions? (*include overall number and percentage of individuals excluded, frequency distribution of exclusions across measured entities, and impact on performance measure scores*)

2021 Submission

We examined the overall frequencies and proportions of women excluded for each exclusion criterion in 2 datasets. Categories are not mutually exclusive.

Frequency of denominator exclusions for the postpartum contraceptive care measures, 24,289 women 15-44 years of age who had a live birth in 5 WA HCA health plans, 2019

Category	N (%)	Distribution across health plans (in percentiles): 25th	Distribution across health plans (in percentiles): 50th	Distribution across health plans (in percentiles): 75th
Exclusion: Deliveries that did not end in a live birth (miscarriage, ectopic, stillbirth or induced abortion)	441 (1.8)	1.8	1.8	2.0
Exclusion: Live births that occurred in the last 2 months of the measurement year	3,560 (14.7)	14.8	14.9	15.1
Number of women 15-44 years of age, after exclusions	20,288	*	*	*

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Frequency of denominator exclusions for the postpartum contraceptive care measure, 17,313 women 15-44 years of age who had a live birth in 6 IME public health regions, 2018

Category	N (%)	Distribution across health plans (in percentiles): 25th	Distribution across health plans (in percentiles): 50th	Distribution across health plans (in percentiles): 75th
Exclusion: Deliveries that did not end in a live birth (miscarriage, ectopic, stillbirth or induced abortion)	259 (1.5)	1.3	1.4	2.2
Exclusion: Live births that occurred in the last 2 months of the measurement year	2,831 (16.4)	15.4	16.2	16.5
Number of women 15-44 years of age, after exclusions	14,223	*	*	*

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2016 Submission

The table below shows the number of women excluded in each of the two datasets, presented by the reason for exclusion.

Category	Number of women: IME, 2013	Number of women: Louisiana Medicaid, 2014
All live births to women 15-44 years of age in the measurement year	14,776	42,603
Exclusion: Deliveries that did not end in a live birth (miscarriage, ectopic, stillbirth or induced abortion)	240	1,481
Exclusion: Live births that occurred in the last 2 months of the measurement year	2,167	7,142
Number of live births to women 15-44 years of age, after exclusions	12,369*	33,980

* 844 women were not included in the final analysis for Iowa because of missing data about the health plan to which they belonged. This resulted in a sample of 11,525 women.

2b2.3. What is your interpretation of the results in terms of demonstrating that exclusions are needed to prevent unfair distortion of performance results? (*i.e., the value outweighs the burden of increased data collection and analysis.* ***Note****:* ***If patient preference is an exclusion****, the measure must be specified so that the effect on the performance score is transparent, e.g., scores with and without exclusion*)

2021 Submission

The frequency of exclusions for the datasets analyzed is low. Approximately 17.8% (IME) and 16.5% (WA HCA) of women 15-44 years of age were excluded from the measure denominator, and the distributions across WA HCA health plans and IME public health regions were as expected.

The exclusions are utilized so that women who may not need nor have an opportunity to obtain contraception to prevent unintended pregnancy are removed from the denominator. Without these exclusions, it may appear that access to a wide range of most and moderately effective methods in the postpartum period is limited, while a larger than expected number of measured entities may have very low (i.e., less than 2%) postpartum LARC provision. Thus, we believe that the benefits of applying the exclusion criteria outweigh their burden.

2016 Submission

When combined, the total number of exclusions in each of the two data sets comprised 16% (IME) and 20% (Louisiana Medicaid) of all postpartum women 15-44 years of age. The number of women excluded will have a noticeable impact on the rates, and excluding these categories of women will be important to reassure providers that the measure is as 'fair' in terms of only including women that providers will

have had an opportunity to care for. For these reasons, we believe that the burden of applying the exclusion criteria is outweighed by the benefits of doing so.

2b3. RISK ADJUSTMENT/STRATIFICATION FOR OUTCOME OR RESOURCE USE MEASURES

If not an intermediate or health outcome, or PRO-PM, or resource use measure, skip to section 2b5.

2b3.1. What method of controlling for differences in case mix is used?

☒ **No risk adjustment or stratification**

☐ **Statistical risk model with risk factors**

☐ **Stratification by risk categories**

☐ **Other,**

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.1.1 If using a statistical risk model, provide detailed risk model specifications, including the risk model method, risk factors, coefficients, equations, codes with descriptors, and definitions.

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.2. If an outcome or resource use component measure is not risk adjusted or stratified, provide rationale and analyses to demonstrate that controlling for differences in patient characteristics (case mix) is not needed to achieve fair comparisons across measured entities.

2021 Submission

We do not believe that risk adjustment is justified. Potential variations in contraceptive use by socio-demographic characteristics exist due in part to modifiable clinical and programmatic considerations, and not different biological responses to contraception. Providers may also see variation by socio-demographic characteristics locally, but we believe that these differences will be reduced if contraceptive services are offered in a client-centered manner, as defined by CDC-OPA recommendations for providing quality family planning services (CDC-OPA, 2014, 2016, 2017).

A special (unpublished) analysis of data from the Pregnancy Risk Assessment Monitoring System (PRAMS), 2016-2018, was conducted to explore differences in the use of most and moderately effective and LARC methods of contraception (see table below). This analysis suggests that there are statistically

significant differences by age group, marital status, as well as some race/ethnicity and income categories for use of most and moderately effective methods and LARC methods. There were no significant differences between most income categories.

Percentage of women 15-44 years of age with a recent live birth that used a most/moderately effective or a LARC method of contraception, Pregnancy Risk Assessment Monitoring System (PRAMS)* 2016-2018

Measures	Sample size (unweighted)	Most or moderately effective methods Percent [95% Confidence Limits]	LARC methods Percent [95% Confidence Limits]
Overall	104,467	53.0 [52.5, 53.5]	16.7 [16.3, 17.0]
Age	*	*	*
<19	24,659	59.3 [58.2, 60.3]	22.6 [21.7, 23.4]
20-29	61,087	52.0 [51.4, 52.6]	16.1 [15.7, 16.6]
>30	18,809	48.4 [47.3, 49.5]	11.2 [10.5,11.8]
Race/ethnicity	*	*	*
NH White	49,822	53.1 [52.4, 53.7]	15.8 [15.4, 16.3]
NH Black	18,215	56.1 [54.8, 57.4]	16.3 [15.3, 17.3]
Hispanic	19,967	58.2 [57.1, 59.4]	21.4 [20.4, 22.3]
NH Other	15,866	38.2 [36.9, 39.6]	13.4 [12.4, 14.3]
Marital status	*	*	*
Married	62,297	48.6 [48.0, 49.2]	14.5 [14.1, 14.9]
Not married	42,068	60.3 [59.5, 61.1]	20.4 [19.7, 20.0]
Percent Federal poverty level	*	*	*
<100%	34,678	58.5 [57.6, 59.4]	19.4 [18.7, 20.1]
100-199%	21,161	56.6 [55.5, 57.6]	18.3 [17.5, 19.2]
200-399%	17,775	50.2 [49.0, 51.2]	15.0 [14.2, 15.8]
400-499%	1,835	54.9 [51.5, 58.4]	14.3 [11.9, 16.7]
500+%	20,679	45.3 [44.3, 46.2]	13.6 [13.0, 14.3]

* The following PRAMS reporting sites were included in the analysis: AK, AL, AR, CO, CT, DE, GA, HI, IA, IL, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OK, PA, PR, RI, SD, TX, UT, VA, VT, WA, WI, WV, WY, NYC.

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2016 Submission

We do not believe that risk adjustment is justified. Although there are [possible] variations in contraceptive use by socio-demographic characteristics, the reason for those patterns is based on modifiable clinical and programmatic considerations rather than differing biological responses to contraception. Although providers may see some local variations by socio-demographic characteristics, we do not believe that these differences will be maintained if contraceptive services are offered in a client-centered manner, as defined by CDC-OPA recommendations for providing quality family planning services (CDC-OPA, 2014).

A special (unpublished) analysis of data from the Pregnancy Risk Assessment Monitoring System (PRAMS), 2011-2012, was conducted to explore disparities in the use of most and moderately effective and LARC methods of contraception (see table below). This analysis suggests that there are statistically significant differences by age, marital status and some income categories for use of most and moderately effective methods and LARC methods. However, there were no significant differences by race/ethnicity, and most income categories.

Percentage of women 15-44 years of age with a recent live birth that used a most/moderately effective or a LARC method of contraception, Pregnancy Risk Assessment Monitoring System (PRAMS)* 2011-2012

Measures	Sample size (unweighted)	Most or moderately effective methods Percent [95% Confidence Limits]	LARC methods Percent [95% Confidence Limits]
Overall	146,648	49.9 [49.1,50.6]	13.6
Age	*	*	*
<19	13,141	60.1[57.4,62.7]	23.1 [21.0,25.4]
20-29	74,925	52.9 [51.9,53.9]	15.8 [15.1,16.5]
>30	58,575	44.6 [43.5,45.6]	9.5 [8.9,10.1]
Race/ethnicity	*	*	*
NH White	73,045	51.2 [50.3,52.1]	14.0 [13.3,14.6]
NH Black	22,389	53.9 [51.8,56.1]	13.1 [11.7,14.7]
Hispanic	23,558	51.4 [49.7,53.0]	15.0 [13.9,16.1]
Marital status	*	*	*
Married	87,515	56.6 [55.4,57.8]	16.4 [15.6,17.3]

Measures	Sample size (unweighted)	Most or moderately effective methods Percent [95% Confidence Limits]	LARC methods Percent [95% Confidence Limits]
Not married	59,026	45.9 [45.0,46.7]	11.9 [11.4,12.5]
Percent Federal poverty level	*	*	*
<100%	39,043	42.8 [40.8,44.8]	12.2 [11.0,13.4]
100-199%	20,160	41.2 [38.5,43.8]	13.5 [11.9,15.3]
200-399%	18,681	36.8 [34.2,39.4]	9.3 [8.0,10.7]
400-499%	8,322	38.6 [34.4,42.9]	9.4 [7.4,12.0]
500+%	60,442	52.1 [51.3,53.0]	14.1 [13.5,14.7]

* The following PRAMS reporting sites were included in the analysis: AK, AR, CO, DE, GA, HI, IL, MA, MD, ME, MI, MN, MO, NE, NJ, NM, NY, OH, OK, OR, PA, RI, TN, UT, VT, WA, WI, WV, WY, NYC.

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2b3.3a. Describe the conceptual/clinical and statistical methods and criteria used to select patient factors (clinical factors or social risk factors) used in the statistical risk model or for stratification by risk (*e.g., potential factors identified in the literature and/or expert panel; regression analysis; statistical significance of p<0.10; correlation of x or higher; patient factors should be present at the start of care*) **Also discuss any "ordering" of risk factor inclusion**; for example, are social risk factors added after all clinical factors?

2021 Submission

We recommend stratifying by age group so that measure scores for adolescent and adult women can be calculated separately for quality improvement (QI) purposes. Given different care delivery models among adolescents, HHS's Centers for Disease Control and Prevention (CDC), American Academy of Pediatrics (AAP), and American College of Obstetricians and Gynecologists (ACOG) have published contraceptive counseling recommendations specifically for this population (Gavin 2014, ACOG 2017 Committee Opinion 710, Menon 2020). Historically, LARCs have been more difficult to access for all age groups because they require clinicians to have specialized training in implant and IUD placement and removal, but they have been particularly difficult for teens to access due to outdated clinical guidance around which populations are eligible for LARCs (Kumar 2016, Pritt 2017, Smith 2017). Though current guidance notes that most and moderately effective methods, including LARC methods, are safe and recommended for teens, it can still be difficult for adolescents to access these highly effective contraceptive methods (Ott 2014, ACOG 2017 Committee Opinion 699, Menon 2020). Studies report that adolescents experience more unintended pregnancies (Coles 2011, Ahrens 2018) and short inter-pregnancy intervals, which may result in adverse outcomes for mothers and infants. For these reasons, it is particularly important to measure access to most and moderately effective methods, including LARCs, among the adolescent population.

2016 Submission

We recommended stratifying the client population by age so that rates for adolescents can be tracked separately from those for adult women. We propose this stratification for purposes of QI but not as a method of risk-adjustment. Teen pregnancy is worthy of a separate focus because of the large potential negative impact on the life of the teen and her child(ren), and the existence of unique programs and contraceptive counseling approaches tailored to this population.

2b3.3b. How was the conceptual model of how social risk impacts this outcome developed? Please check all that apply:

- ☒ **Published literature**
- ☐ **Internal data analysis**
- ☐ **Other (please describe)**

2021 Submission

To affirm stratifying by age group to calculate measure scores for adolescent and adult women separately, we reviewed current clinical guidelines for contraception for women of reproductive age (i.e., women ages 15-44) as well as women ages 15-20 during preconception, interpregnancy, and the postpartum periods. We also examined published studies and systematic reviews that focused on facilitators and barriers to contraception among postpartum women who wish to prevent pregnancy. The literature is summarized in section 2b3.3a above.

2b3.4a. What were the statistical results of the analyses used to select risk factors?
2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.4b. Describe the analyses and interpretation resulting in the decision to select social risk factors *(e.g. prevalence of the factor across measured entities, empirical association with the outcome, contribution of unique variation in the outcome, assessment of between-unit effects and within-unit effects.)* **Also describe the impact of adjusting for social risk (or not) on providers at high or low extremes of risk.**

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.5. Describe the method of testing/analysis used to develop and validate the adequacy of the statistical model or stratification approach (*describe the steps—do not just name a method; what statistical analysis was used*)

Provide the statistical results from testing the approach to controlling for differences in patient characteristics (case mix) below.
If stratified, skip to 2b3.9

2b3.6. Statistical Risk Model Discrimination Statistics (*e.g., c-statistic, R-squared*)**:**

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.7. Statistical Risk Model Calibration Statistics (*e.g., Hosmer-Lemeshow statistic*):

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.8. Statistical Risk Model Calibration – Risk decile plots or calibration curves:

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.9. Results of Risk Stratification Analysis:

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.10. What is your interpretation of the results in terms of demonstrating adequacy of controlling for differences in patient characteristics (case mix)? (i.*e., what do the results mean and what are the norms for the test conducted*)

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b3.11. Optional Additional Testing for Risk Adjustment (***not required****, but would provide additional support of adequacy of risk model, e.g., testing of risk model in another data set; sensitivity analysis for missing data; other methods that were assessed*)

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b4. IDENTIFICATION OF STATISTICALLY SIGNIFICANT & MEANINGFUL DIFFERENCES IN PERFORMANCE

2b4.1. Describe the method for determining if statistically significant and clinically/practically meaningful differences in performance measure scores among the measured entities can be identified (*describe the steps—do not just name a method; what statistical analysis was used? Do not just repeat the information provided related to performance gap in 1b)*

2021 Submission

Because our datasets are designed to represent the census of all claims available, rates are assumed to reflect "true" rates by unit for the data year. Non-sampling error (such as coding or measurement error) is not estimable given our limited access to the claims data and processes. Any differences in rates must therefore be evaluated based on practical or clinically meaningful impact. We present calculated measure rates at each level for all age groups for all data sources for such consideration.

One can set up a model in which the units of performance measurement (despite our census of all extant units) represent a sample from the 'infinite universe' of possible units. These units are modeled as if they were a random sampling of units from an infinitely large entity of units. We considered differences in performance using the MA data to illustrate this hypothetical example, with the caveat that the discussion is strictly speculative to support this section. To examine differences, we simply calculated 95% confidence intervals for the unadjusted metric results for 60-day postpartum contraceptive provision among women 15-44 years of age in all health plans. If a health plan's confidence interval did not include the grand mean rate across all health plans, then the health plan was identified as better or worse than average. Note that a statistically significant difference is largely dependent on size of the measured units. A small health plan with few patient cases might exhibit low rates, but not be "statistically different" from the average; or alternatively, a large entity with many patients being identified as "below average" when the difference might be negligible from a quality-of-care perspective. Other rubrics for identifying differences might be considered including nonparametric rank-order methods such as lowest percentiles.

Because the measure is most appropriately utilized to identify entities with very low rates of contraceptive provision relative to other units (perhaps suggesting structural barriers to access), we also developed a convenient empirical Bayes tool for setting a user-specified 'floor' value and identifying all units that fall below the floor value (with 95% confidence accounting for unit size). This tool is included as an appendix for consideration and might be generally applicable within the clinical quality improvement field.

Given the sensitive and context-dependent nature of quality improvement activities for contraceptive care, we strongly recommend that any methods for addressing performance gaps are developed carefully in conjunction with established guidelines for patient-centered contraceptive care. Because the interpretation of these measures is context dependent, clinically meaningful differences are best evaluated by subject matter experts who are familiar with the healthcare delivery organizations and their populations.

2016 Submission

Due to the fact that our dataset represents a census, all rates are assumed to reflect 'true' rates by unit for the data year. Non-sampling error (such as coding or measurement error) is not estimable given our limited access to the claims data and processes. Thus we do not present any confidence intervals for inferential testing results. These assumed-true differences in rates must therefore be evaluated based on practical or clinically meaningful impact.

2b4.2. What were the statistical results from testing the ability to identify statistically significant and/or clinically/practically meaningful differences in performance measure scores across measured entities? (e.g., *number and percentage of entities with scores that were statistically significantly different from mean or some benchmark, different from expected; how was meaningful difference defined*)

2021 Submission

We excluded 2 health plans with denominators less than 75, resulting in 19 health plans in the analysis. The distribution for health plan rate is shown in the table below.

Distribution for health plan level postpartum contraceptive provision rate (%) in 19 MA health plans, 2019

60-day postpartum contraceptive care	Mean	SD	Minimum	10th percentile	25th percentile	Median	75th percentile	90th percentile	Maximum
Most or moderately effective methods	48.0	5.9	36.7	40.1	43.4	48.8	51.4	58.0	60.3
LARC	17.3	4.8	9.0	11.8	13.5	17.7	20.5	24.1	27.5

For 60-day postpartum most or moderately effective contraceptive care, 2 (10.5%) of 19 health plans were rated as higher than the mean (i.e. the lower limit of health plan's 95% confidence interval was > 48.0) and 5 health plans (26.3%) were identified as lower than the mean (i.e. the upper limit of health plan's 95% confidence interval was < 48.0). Another 12 health plans were either higher or lower than the mean (48.0) but their results were not statistically significant. For 60-day postpartum LARC provision, 6 health plans (31.6%) of 19 health plans were rated as higher than the mean (i.e. the lower limit of health plan's 95% confidence interval was > 17.3) and 6 health plans (31.6%) were identified as lower than the mean (i.e. the upper limit of health plan's 95% confidence interval was < 17.3). Another 7 health plans were either higher or lower than the mean (17.3) but their results were not statistically significant.

The tables below summarize rates at each level. More detailed information about the variation of rates by unit within each level can be found in Tables 1-9, which are appended at the end of this document.

Percentages of most and moderately effective contraception provision by age group and level of analysis (mean and range), 3-days and 60-days postpartum.

Measures	Level	Age	IME, 2018	WA HCA, 2019	CMS TAF Texas, 2016	MA, 2019	LA Medicaid, 2019
Within 3 days of delivery	**Public Health Region**	15-44	.097 (.062, .145)	*	.103 (.075, .172)	*	*
*	*	21-44	.104 (.067, .158)	*	.115 (.085, .209)	*	*
*	*	15-20	.040 (.000, .086)	*	N.A.	*	*
*	**Group Billing Provider**	15-44	.098 (.000, 1.00)	*	.129 (.042, .290)	*	*
*	*	21-44	.105 (.000, 1.00)	*	.143 (.048, .371)	*	*
*	*	15-20	.040 (.000, 1.00)	*	.146 (.100, .210)	*	*
*	**Health Plan**	15-44	*	*	*	.127 (.000, .298)	.116 (.108, .129)
*	*	21-44	*	*	*	.128 (.000, .297)	.126 (.116, .139)
*	*	15-20	*	*	*	.113 (.000, .307)	.050 (.037, .093)
Within 60 days of delivery	**Public Health Region**	15-44	.356 (.290, .445)	*	.324 (.269, .458)	*	*
*	*	21-44	.356 (.296, .445)	*	.325 (.469, .292)	*	*
*	*	15-20	.363 (.238, .445)	*	.324 (.162, .451)	*	*
*	**Group Billing Provider**	15-44	.356 (.000, 1.00)	*	.337 (.077, .786)	*	*
*	*	21-44	.356 (.000, 1.00)	*	.337 (.080, .774)	*	*
*	*	15-20	.359 (.000, 1.00)	*	.359 (.138, .688)	*	*
*	**Health Plan**	15-44	*	.409 (.368, .467)	*	.495 (.367, .603)	.512 (.490, .529)
*	*	21-44	*	.404 (.365, .466)	*	.495 (.368, .607)	.509 (.488, .526)
*	*	15-20	*	.465 (.385, .493)	*	.499 (.273, .600)	.530 (.505, .551)

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Percentages of LARC provision by age group and level of analysis (mean and range), 3-days and 60-days postpartum.

Measures	Level	Age	IME, 2018	WA HCA, 2019	CMS TAF Texas, 2016	MA, 2019	LA Medicaid, 2019
Within 3 days of delivery	**Public Health Region**	15-44	.017 (.002, .040)	*	*	*	*
*	*	21-44	.016 (.001, .038)	*	*	*	*
*	*	15-20	.022 (.000, .061)	*	*	*	*
*	**Group Billing Provider**	15-44	.017 (.000, 1.00)	*	.063 (.018, .113)	*	*
*	*	21-44	.016 (.000, 1.00)	*	.066 (.018, .109)	*	*
*	*	15-20	.023 (.000, .500)	*	.161 (.161, .161)	*	*
*	**Health Plan**	15-44	*	*	*	.030 (.000, .149)	.024 (.021, .033)
*	*	21-44	*	*	*	.027 (.000, .143)	.023 (.019, .031)
*	*	15-20	*	*	*	.073 (.000, .253)	.036 (.029, .056)
Within 60 days of delivery	**Public Health Region**	15-44	.112 (.079, .146)	*	.099 (.064, .122)	*	*
*	*	21-44	.108 (.074, .142)	*	.092 (.061, .111)	*	*
*	*	15-20	.150 (.117, .177)	*	.147 (.095, .185)	*	*
*	**Group Billing Provider**	15-44	.112 (.000, 1.00)	*	.123 (.031, .500)	*	*
*	*	21-44	.108 (.000, 1.00)	*	.114 (.026, .500)	*	*
*	*	15-20	.146 (.000, 1.00)	*	.183 (.069, .429)	*	*
*	**Health Plan**	15-44	*	.165 (.135, .194)	*	.184 (.000, .275)	.138 (.129, .159)
*	*	21-44	*	.159 (.132, .192)	*	.179 (.000, .262)	.132 (.122, .154)
*	*	15-20	*	.222 (.183, .240)	*	.249 (.059, .369)	.175 (.164, .216)

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2016 Submission

The table below summarizes rates at each level. As noted above, since our data contain the entirety of the defined population, estimation of sampling error and related inferential statistics such as confidence intervals are not applicable. More detailed information about the variation of rates by unit within each level can be found in Tables 1-4, which are appended at the end of this document.

Most and moderately effective methods, mean (range)

Measures	Level	Age	Iowa Medicaid, 2013	Louisiana Medicaid, 2014
Within 3 days of delivery	**Health plan**	15-44	*	.096 (.082-.127)
*	**Public health region**	15-44	.106 (.085-.123)	.097 (.083-.105)
Within 60 days of delivery	**Health plan**	15-20	*	.416 (.362-.451)
*	*	21-44	*	.438 (.385-.470)
*	*	15-44	*	.434 (.382-.462)
*	**Public health region**	15-20	.416 (.354-.468)	.427 (.348-.487)
*	*	21-44	.426 (.388-.480)	.453 (.388-.490)
*	*	15-44	.424 (.382-.474)	.448 (.381-482)

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LARC methods, mean (range)

Measures	Level	Age	Iowa Medicaid, 2013	Louisiana Medicaid, 2014
Within 3 days of delivery	**Health plan**	15-44	*	.003 (.001-.007)
*	**Public health region**	15-44	.004 (0 - .010)	.003 (001-.004)
Within 60 days of delivery	**Health plan**	15-20	*	.114 (.050-.155)
*	*	21-44	*	.088 (.041-.119)
*	*	15-44	*	.093 (.043-.125)
*	**Public health region**	15-20	144 (.102-.169)	.117 (.062-.133)
*	*	21-44	.099 (.084-.121)	.092 (.045-.112)
*	*	15-44	.107 (.087-.124)	.097 (.048-.115)

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2b4.3. What is your interpretation of the results in terms of demonstrating the ability to identify statistically significant and/or clinically/practically meaningful differences in performance across measured entities? (i*.e., what do the results mean in terms of statistical and meaningful differences?*)

2021 Submission

This measure can reliably distinguish health plans with better- and worse-than-average performance. Health plans that were identified as statistically significantly better or worse than the average had scores that were on average 7% (range: 4% - 11%) lower or 11% (range: 10% - 12%) higher than the mean for 60-day postpartum most or moderately effective contraceptive provision, and 5% (range: 3% - 8%) lower or 5% (range: 2% - 10%) higher than the mean for 60-day postpartum LARC provision. However, as noted, this is only one of many potential methods for examining performance differences. As noted, only subject matter experts with an understanding of the healthcare delivery context should determine meaningful differences in performance. We also provided a tool for identifying those units falling below a user-specified 'floor' value with 95% confidence (while accounting for unit size and empirical distribution), to aid in assessments by quality improvement professionals.

Measure scores differ considerably across all levels for the 60-day measures of postpartum most and moderately effective contraceptive methods. Within IME and CMS TAF, measure scores ranged the widest at the group billing provider level, but public health regions also varied in percentage of use of most and moderately effective methods. For WA HCA, rates differed by health plan as well. For the 3-day postpartum period, percentages of most and moderately effective methods varied slightly less at the public health region in both IME and CMS TAF. The IME measure scores for provision of most and moderately effective methods by region ranged from 6% to 15%; the range of measure scores was 8% to

17% for Texas in CMS TAF. These differences suggest that detecting meaningful differences in performance across measured entities is possible for these measures.

For the provision of LARC methods, IME and CMS TAF rates at the group billing provider level varied more than at the region level in the immediate postpartum period. Because the primary intent of the postpartum LARC measures is to gauge access, we focus on identifying very low percentages of LARC use (less than 1-2%).

Within IME, two public health regions report immediate postpartum LARC provision greater than 2%. In the other four regions, less than 1% of postpartum women are provided LARC within 3 days of delivery. These results might indicate barriers to access immediate postpartum LARC in some regions of Iowa, despite reimbursement policies for this service. By 60 days postpartum, no public health region has a rate less than 2 percent. These data suggest that there is some access to LARC in the state overall and in each region of the state.

Iowa groups and regions reporting less than 2% LARC should be evaluated to detect and address preventable barriers to these methods. Although some measured entities in Iowa still have percentages lower than the median, provision of contraception within 3 days of delivery has increased overall. This increase may be due to implementation of payment strategies and more scientific evidence demonstrating its association with desired health outcomes.

For Texas in CMS TAF and WA HCA, measure scores were only available for 60-day postpartum LARC provision. All Texas public health regions and WA HCA health plans included in the analysis provided LARC to more than 2% of postpartum women by 60 days after delivery, suggesting that women have some access to LARC in these states.

2016 Submission

There are large differences in rates across both levels for the 60-day measures of postpartum contraception. For example, the rates for most and moderately effective methods ranged by region in Iowa (from 35% to 48%) and Louisiana (from 35% to 49%), and across health plans in Louisiana (from 36% to 47%). There were also substantial differences in provision of LARC methods across regions in Iowa (from 8% to 17%) and Louisiana (from 4% to 13%), and across health plans in Louisiana (from 4% to 16%). These differences suggest that it will be possible to identify meaningful differences in performance across measured entities for the 60-day measures.

There was less variation for the 3-day postpartum measures. For example, the rates for provision of most and moderately effective methods ranged by region in Iowa (9% to 12%) and Louisiana (from 8 to 11%), and across health plans in Louisiana (from 8 to 13%). There was than one percentage point difference in provision of LARC methods across all reporting units. The provision of contraception in the immediate postpartum period is a relatively new clinical practice and payment strategies are only now being implemented, so these low rates are not surprising. However, we expect to see notable increases in the rates over the coming years.

2b5. COMPARABILITY OF PERFORMANCE SCORES WHEN MORE THAN ONE SET OF SPECIFICATIONS

If only one set of specifications, this section can be skipped.

Note*: This item is directed to measures that are risk-adjusted (with or without social risk factors)* ***OR*** *to measures with more than one set of specifications/instructions (e.g., one set of specifications for how to identify and compute the measure from medical record abstraction and a different set of specifications for claims or eMeasures). It does not apply to measures that use more than one source of data in one set of specifications/instructions (e.g., claims data to identify the denominator and medical record abstraction for the numerator).* ***Comparability is not required when comparing performance scores with and without social risk factors in the risk adjustment model. However, if comparability is not demonstrated for measures with more than one set of specifications/instructions, the different specifications (e.g., for medical records vs. claims) should be submitted as separate measures.***

2b5.1. Describe the method of testing conducted to compare performance scores for the same entities across the different data sources/specifications (*describe the steps—do not just name a method; what statistical analysis was used*)

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b5.2. What were the statistical results from testing comparability of performance scores for the same entities when using different data sources/specifications? (*e.g., correlation, rank order*)

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b5.3. What is your interpretation of the results in terms of the differences in performance measure scores for the same entities across the different data sources/specifications? (i.*e., what do the results mean and what are the norms for the test conducted*)

2021 Submission

Not applicable.

2016 Submission

Not applicable.

2b6. MISSING DATA ANALYSIS AND MINIMIZING BIAS

2b6.1. Describe the method of testing conducted to identify the extent and distribution of missing data (or nonresponse) and demonstrate that performance results are not biased due to systematic missing data (or differences between responders and non-responders) and how the specified handling of missing data minimizes bias (*describe the steps—do not just name a method; what statistical analysis was used*)

2021 Submission

The data source for this measure is claims data. Claims data usually has very little missing data because it is used for billing, which also makes determining when claims data is missing challenging.

2016 Submission

The data source for this measure is claims data. Due to the nature of claims data (i.e., for billing purposes), there is typically very little missing data; further, it is difficult to ascertain when claims data is or is not missing.

2b6.2. What is the overall frequency of missing data, the distribution of missing data across providers, and the results from testing related to missing data? (*e.g., results of sensitivity analysis of the effect of various rules for missing data/nonresponse; **if no empirical sensitivity analysis**, identify the approaches for handling missing data that were considered and pros and cons of each*)

2021 Submission

Not addressed due to the nature of claims data.

2016 Submission

Not addressed due to the nature of claims data.

2b6.3. What is your interpretation of the results in terms of demonstrating that performance results are not biased due to systematic missing data (or differences between responders and non-responders) and how the specified handling of missing data minimizes bias**?** (i*.e., what do the results mean in terms of supporting the selected approach for missing data and what are the norms for the test conducted; **if no empirical analysis**, provide rationale for the selected approach for missing data*)

2021 Submission

Not applicable.

2016 Submission

Not applicable.

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LIST OF (LANDSCAPE) TABLES for Reliability

2021 Submission

2016 Submission

2021 Submission

Table 1. Rates and reliabilities for provision of most and moderately effective contraceptive methods in the postpartum period, Iowa Medicaid Enterprise, 2018, by public health region

3 DAY POSTPARTUM – MOST/MOD

Public Health Region	MEM_MethodMost: 15 to <21 Years (Most/Mod Provision)	MEM_Method Most: 15 to <21 Years (Total N)	MEM_MethodMost: 15 to <21 Years (Rate)	MEM_MethodMost: 15 to <21 Years (Reliability)	MEM_Method Most: 21 to 44 years (Most/Mod Provision)	MEM_Method Most: 21 to 44 years (Total N)	MEM_MethodMost: 21 to 44 years (Rate)	MEM_MethodMost: 21 to 44 years (Reliability)	MEM_MethodMost: all age groups (Most/Mod Provision)	MEM_MethodMost: all age groups (Total N)	MEM_MethodMost: all age groups (Rate)	MEM_MethodMost: all age groups (Reliability)
1	7	425	0.016	0.927	283	3826	0.074	0.975	290	4251	0.068	0.977
2	2	98	0.020	0.745	113	965	0.117	0.908	115	1063	0.108	0.914
3	0	206	0.000	0.860	141	1613	0.087	0.943	141	1819	0.078	0.948
4	4	153	0.026	0.820	76	1138	0.067	0.921	80	1291	0.062	0.928
5	12	209	0.057	0.862	227	1437	0.158	0.937	239	1646	0.145	0.943
6	35	409	0.086	0.924	481	3744	0.128	0.975	516	4153	0.124	0.977
Total or Mean	**60**	**1500**	**0.040**	*	**1321**	**12723**	**0.104**	*	**1381**	**14223**	**0.097**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	209	*	**0.856**	Median n	1613	*	**0.943**	Median n	1819	*	**0.948**
*	Min n	98	*	*	Min n	965	*	*	Min n	1063	*	*

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60 DAY POSTPARTUM - MOST/MOD

Public Health Region	MEM_MethodMost: 15 to <21 Years (Most/Mod Provision)	MEM_MethodMost: 15 to <21 Years (Total N)	MEM_MethodMost: 15 to <21 Years (Rate)	MEM_MethodMost: 15 to <21 Years (Reliability)	MEM_MethodMost: 21 to 44 years (Most/Mod Provision)	MEM_MethodMost: 21 to 44 years (Total N)	MEM_MethodMost: 21 to 44 years (Rate)	MEM_MethodMost: 21 to 44 years (Reliability)	MEM_MethodMost: all age groups (Most/Mod Provision)	MEM_MethodMost: all age groups (Total N)	MEM_MethodMost: all age groups (Rate)	MEM_MethodMost: all age groups (Reliability)
1	152	425	0.358	0.850	1218	3826	0.318	0.972	1370	4251	0.322	0.976
2	38	98	0.388	0.567	356	965	0.369	0.899	394	1063	0.371	0.911
3	49	206	0.238	0.734	478	1613	0.296	0.937	527	1819	0.290	0.946
4	61	153	0.399	0.672	402	1138	0.353	0.913	463	1291	0.359	0.926
5	93	209	0.445	0.736	639	1437	0.445	0.930	732	1646	0.445	0.941
6	152	409	0.372	0.845	1432	3744	0.382	0.972	1584	4153	0.381	0.976
Total or Mean	**545**	**1500**	**0.363**	*	**4525**	**12723**	**0.356**	*	**5070**	**14223**	**0.356**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	209	*	**0.734**	Median n	1613	*	**0.937**	Median n	1819	*	**0.946**
*	Min n	98	*	*	Min n	965	*	*	Min n	1063	*	*

Note: Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

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Table 2. Rates and reliabilities for provision of LARC methods in the postpartum period, Iowa Medicaid Enterprise, 2018, by public health region

3 DAY POSTPARTUM – LARC

Public Health Region	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability)	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability)	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability)
1	1	425	0.002	0.937	12	3826	0.003	0.985	13	4251	0.003	0.986
2	0	98	0.000	0.774	5	965	0.005	0.943	5	1063	0.005	0.948
3	0	206	0.000	0.878	4	1613	0.002	0.965	4	1819	0.002	0.969
4	1	153	0.007	0.843	1	1138	0.001	0.951	2	1291	0.002	0.957
5	6	209	0.029	0.880	40	1437	0.028	0.961	46	1646	0.028	0.966
6	25	409	0.061	0.935	141	3744	0.038	0.985	166	4153	0.040	0.986
Total or Mean	**33**	**1500**	**0.022**	*	**203**	**12723**	**0.016**	*	**236**	**14223**	**0.017**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	209	*	**0.874**	Median n	1613	*	**0.965**	Median n	1819	*	**0.969**
*	Min n	98	*	*	Min n	965	*	*	Min n	1063	*	*

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60 DAY POSTPARTUM – LARC

Public Health Region	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability)	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability)	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability)
1	59	425	0.139	0.022	317	3826	0.083	0.958	376	4251	0.088	0.959
2	16	98	0.163	0.005	103	965	0.107	0.852	119	1063	0.112	0.855
3	24	206	0.117	0.011	120	1613	0.074	0.906	144	1819	0.079	0.910
4	19	153	0.124	0.008	123	1138	0.108	0.872	142	1291	0.110	0.878
5	37	209	0.177	0.011	204	1437	0.142	0.895	241	1646	0.146	0.901
6	70	409	0.171	0.021	502	3744	0.134	0.957	572	4153	0.138	0.958
Total or Mean	**225**	**1500**	**0.150**	*	**1369**	**12723**	**0.108**	*	**1594**	**14223**	**0.112**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	209	*	**0.013**	Median n	1613	*	**0.907**	Median n	1819	*	**0.910**
*	Min n	98	*	*	Min n	965	*	*	Min n	1063	*	*

Note: Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

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Table 3. Rates and reliabilities for provision of most and moderately effective contraceptive methods in the postpartum period, CMS TAF Texas, 2016, by public health region

3 DAY POSTPARTUM – MOST/MOD

Public Health Region	MEM_MethodMost: 21 to 44 years (Most/Mod Provision)	MEM_MethodMost: 21 to 44 years (Total N)	MEM_MethodMost: 21 to 44 years (Rate)	MEM_MethodMost: 21 to 44 years (Reliability)	MEM_MethodMost: all age groups (Most/Mod Provision)	MEM_MethodMost: all age groups (Total N)	MEM_MethodMost: all age groups (Rate)	MEM_MethodMost: all age groups (Reliability)
1	61	300	0.203	0.795	61	379	0.161	0.752
2	82	392	0.209	0.835	86	500	0.172	0.800
3	1109	10202	0.109	0.992	1149	11590	0.099	0.989
4	160	1818	0.088	0.959	163	2174	0.075	0.946
5	230	1288	0.179	0.943	230	1561	0.147	0.926
6	2825	24052	0.117	0.997	2885	27335	0.106	0.995
7	462	5464	0.085	0.986	489	6262	0.078	0.980
8	172	1191	0.144	0.939	175	1423	0.123	0.919
9	50	359	0.139	0.823	50	439	0.114	0.778
11	171	1260	0.136	0.942	175	1529	0.114	0.924
Total or Mean	**5322**	**46326**	**0.115**	*	**5463**	**53192**	**0.103**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	1288	*	**0.921**	Median n	1561	*	**0.901**
*	Min n	300	*	*	Min n	379	*	*

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60 DAY POSTPARTUM - MOST/MOD

Public Health Region	MEM_MethodMost: 15 to <21 Years (Most/Mod Provision)	MEM_Method Most: 15 to <21 Years (Total N)	MEM_MethodMost: 15 to <21 Years (Rate)	MEM_Method Most: 15 to <21 Years (Reliability)	MEM_MethodMost: 21 to 44 years (Most/Mod Provision)	MEM_Method Most: 21 to 44 years (Total N)	MEM_MethodMost: 21 to 44 years (Rate)	MEM_MethodMost: 21 to 44 years (Reliability)	MEM_Method Most: all age groups (Most/Mod Provision)	MEM_Method Most: all age groups (Total N)	MEM_Method Most: all age groups (Rate)	MEM_Method Most: all age groups (Reliability)
1	34	79	0.430	0.631	122	300	0.407	0.820	156	379	0.412	0.860
2	45	108	0.417	0.700	184	392	0.469	0.856	229	500	0.458	0.890
3	450	1388	0.324	0.968	3323	10202	0.326	0.994	3773	11590	0.326	0.995
4	152	356	0.427	0.885	698	1818	0.384	0.965	850	2174	0.391	0.972
5	123	273	0.451	0.855	572	1288	0.444	0.951	695	1561	0.445	0.962
6	998	3283	0.304	0.986	7423	24052	0.309	0.997	8421	27335	0.308	0.998
7	237	798	0.297	0.945	1596	5464	0.292	0.988	1833	6262	0.293	0.990
8	92	232	0.397	0.834	506	1191	0.425	0.947	598	1423	0.420	0.958
9	13	80	0.162	0.634	105	359	0.292	0.845	118	439	0.269	0.876
11	82	269	0.305	0.853	504	1260	0.400	0.950	586	1529	0.383	0.961
Total or Mean	**2226**	**6866**	**0.324**	*	**15033**	**46326**	**0.325**	*	**17259**	**53192**	**0.324**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	273	*	**0.829**	Median n	1288	*	**0.931**	Median n	1561	*	**0.946**
*	Min n	79	*	*	Min n	300	*	*	Min n	379	*	*

Note: Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

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Table 4. Rates and reliabilities for provision of LARC methods in the postpartum period, CMS TAF Texas, 2016, by public health region

60 DAY POSTPARTUM - LARC

Public Health Region	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability)	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability)	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability)
1	10	79	0.127	0.113	30	300	0.100	0.175	40	379	0.106	0.417
2	17	108	0.157	0.148	41	392	0.105	0.217	58	500	0.116	0.485
3	220	1388	0.159	0.691	971	10202	0.095	0.878	1191	11590	0.103	0.956
4	63	356	0.177	0.364	202	1818	0.111	0.562	265	2174	0.122	0.804
5	26	273	0.095	0.305	95	1288	0.074	0.476	121	1561	0.078	0.746
6	470	3283	0.143	0.841	2131	24052	0.089	0.944	2601	27335	0.095	0.981
7	122	798	0.153	0.562	526	5464	0.096	0.794	648	6262	0.103	0.922
8	43	232	0.185	0.272	128	1191	0.107	0.456	171	1423	0.120	0.728
9	NA	NA	NA	NA	22	359	0.061	0.202	28	439	0.064	0.453
11	29	269	0.108	0.302	113	1260	0.090	0.470	142	1529	0.093	0.742
Total or Mean	**1000**	**6786**	**0.147**	*	**4259**	**46326**	**0.092**	*	**5265**	**53192**	**0.099**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	314.5	*	**0.400**	Median n	1288	*	**0.517**	Median n	1561	*	**0.723**
*	Min n	79	*	*	Min n	300	*	*	Min n	379	*	*

Note: Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

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Table 5. Rates and reliabilities for provision of contraceptive methods in the 60-days postpartum period, Washington State Health Care Authority, 2019, by health plan

60 DAY POSTPARTUM – MOST/MOD

Health Plan	MEM_MethodMost: 15 to <21 Years (Most/Mod Provision)	MEM_Method Most: 15 to <21 Years (Total N)	MEM_MethodMost: 15 to <21 Years (Rate)	MEM_Method Most: 15 to <21 Years (Reliability)	MEM_MethodMost: 21 to 44 years (Most/Mod Provision)	MEM_MethodMost: 21 to 44 years (Total N)	MEM_MethodMost: 21 to 44 years (Rate)	MEM_MethodMost: 21 to 44 years (Reliability)	MEM_MethodMost: all age groups (Most/Mod Provision)	MEM_MethodMost: all age groups (Total N)	MEM_MethodMost: all age groups (Rate)	MEM_MethodMost: all age groups (Reliability)
MCO 1	68	165	0.412	0.317	750	2055	0.365	0.904	818	2220	0.368	0.911
MCO 2	121	283	0.428	0.443	1101	2710	0.406	0.926	1222	2993	0.408	0.932
MCO 3	114	239	0.477	0.402	864	1854	0.466	0.895	978	2093	0.467	0.906
MCO 4	451	915	0.493	0.720	4115	10137	0.406	0.979	4566	11052	0.413	0.981
MCO 5	40	104	0.385	0.226	680	1826	0.372	0.894	720	1930	0.373	0.899
Total or Mean	**794**	**1706**	**0.465**	*	**7510**	**18582**	**0.404**	*	**8304**	**20288**	**0.409**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	261	*	**0.422**	Median n	2382.5	*	**0.920**	Median n	2606.5	*	**0. 926**
*	Min n	104	*	*	Min n	1826	*	*	Min n	1930	*	*

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60 DAY POSTPARTUM – LARC

Health Plan	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability)	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability)	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability)
MCO 1	38	165	0.230	0.000	292	2055	0.142	0.860	330	2220	0.149	0.865
MCO 2	68	283	0.240	0.000	481	2710	0.177	0.890	549	2993	0.183	0.897
MCO 3	50	239	0.209	0.000	356	1854	0.192	0.848	406	2093	0.194	0.858
MCO 4	203	915	0.222	0.000	1591	10137	0.157	0.968	1794	11052	0.162	0.970
MCO 5	19	104	0.183	0.000	241	1826	0.132	0.846	260	1930	0.135	0.848
Total or Mean	**378**	**1706**	**0.222**		**2961**	**18582**	**0.159**	*	**3339**	**20288**	**0.165**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	261	*	**0.000**	Median n	2382.5	*	**0.882**	Median n	2606.5	*	**0.888**
*	Min n	104	*	*	Min n	1826	*	*	Min n	1930	*	*

Note: Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

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Table 6. Rates and reliabilities for provision of most and moderately effective contraceptive methods in the postpartum period, Massachusetts MassHealth, 2019, by health plan

3 DAY POSTPARTUM – MOST/MOD

Health Plan	MEM_MethodMost: 15 to <21 Years (Most/Mod Provision)	MEM_Method Most: 15 to <21 Years (Total N)	MEM_Method Most: 15 to <21 Years (Rate)	MEM_Method Most: 15 to <21 Years (Reliability (all units))	MEM_Method Most: 15 to <21 Years (Reliability (unit size≥75))	MEM_Method Most: 21 to 44 years (Most/Mod Provision)	MEM_Method Most: 21 to 44 years (Total N)	MEM_Method Most: 21 to 44 years (Rate)	MEM_Method Most: 21 to 44 years (Reliability (all units))	MEM_Method Most: 21 to 44 years (Reliability (unit size≥75))	MEM_Method Most: all age groups (Most/Mod Provision)	MEM_Method Most: all age groups (Total N)	MEM_Method Most: all age groups (Rate)	MEM_Method Most: all age groups (Reliability (all units))	MEM_Method Most: all age groups (Reliability (unit size≥75))
ACOA 1	0	11	0.000	0.437	*	59	742	0.080	0.944	0.940	59	753	0.078	0.946	0.942
ACOA 2	0	13	0.000	0.479	*	21	236	0.089	0.843	0.832	21	249	0.084	0.853	0.843
ACOA 3	0	17	0.000	0.546	*	24	350	0.069	0.888	0.880	24	367	0.065	0.896	0.888
ACOA 4	13	115	0.113	0.890	0.860	5	74	0.068	0.627	NA	18	189	0.095	0.816	0.803
ACOA 5	0	32	0.000	0.693	*	26	427	0.061	0.906	0.900	26	459	0.057	0.915	0.908
ACOA 6	21	84	0.250	0.856	0.818	136	595	0.229	0.931	0.926	157	679	0.231	0.941	0.936
ACOA 7	3	38	0.079	0.728	*	74	808	0.092	0.948	0.944	77	846	0.091	0.952	0.948
ACOA 8	2	14	0.143	0.497	*	33	309	0.107	0.875	0.867	35	323	0.108	0.883	0.875
ACOA 9	1	10	0.100	0.414	*	32	392	0.082	0.899	0.892	33	402	0.082	0.904	0.897
ACOA 10	7	137	0.051	0.906	0.880	233	2010	0.116	0.979	0.977	240	2147	0.112	0.980	0.979
ACOA 11	23	75	0.307	0.841	0.800	227	764	0.297	0.945	0.941	250	839	0.298	0.952	0.948
ACOA 12	10	43	0.233	0.752	*	68	482	0.141	0.916	0.910	78	525	0.149	0.925	0.919
ACOA 13	1	21	0.048	0.597	*	83	686	0.121	0.940	0.935	84	707	0.119	0.943	0.939
ACOB 1	3	86	0.035	0.859	0.821	217	1755	0.124	0.975	0.974	220	1841	0.120	0.977	0.975
ACOB 2	7	92	0.076	0.867	0.831	154	1517	0.102	0.972	0.970	161	1609	0.100	0.974	0.972
ACOB 3	25	211	0.118	0.937	0.918	439	3135	0.140	0.986	0.985	464	3346	0.139	0.987	0.986
Non-ACO 1	0	0	*	*	*	17	71	0.239	0.617	*	17	71	0.239	0.624	*
Non-ACO 2	2	40	0.050	0.739	*	141	1199	0.118	0.965	0.962	143	1239	0.115	0.967	0.964
Non-ACO 3	15	104	0.144	0.880	0.847	174	1242	0.140	0.966	0.963	189	1346	0.140	0.969	0.967
Non-ACO 4	0	34	0.000	0.706	*	105	875	0.120	0.952	0.948	105	909	0.116	0.955	0.952
Non-ACO 5	0	0	*	*	*	0	10	0.000	0.185	*	0	10	0.000	0.190	*
Total or Mean	**133**	**1177**	**0.113**	*	*	**2268**	**17679**	**0.128**	*	*	**2401**	**18856**	**0.127**	*	*
*	*	*	*	**Overall Reliability**	**Overall Reliability**	*	*	*	**Overall Reliability**	**Overall Reliability**	*	*	*	**Overall Reliability**	**Overall Reliability**
*	Median n	39	*	**0.717**	**0.847**	Median n	714	*	**0.869**	**0.930**	Median n	730	*	**0.883**	**0.928**
*	Min n	0	*	*	*	Min n	10	*	*	*	Min n	10	*	*	*

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60 DAY POSTPARTUM – MOST/MOD

Health Plan	MEM_Method Most: 15 to <21 Years (Most/Mod Provision)	MEM_MethodMost: 15 to <21 Years (Total N)	MEM_Method Most: 15 to <21 Years (Rate)	MEM_MethodMost: 15 to <21 Years (Reliability (all units))	MEM_Method Most: 15 to <21 Years (Reliability (unit size≥75))	MEM_Method Most: 21 to 44 years (Most/Mod Provision)	MEM_Method Most: 21 to 44 years (Total N)	MEM_Method Most: 21 to 44 years (Rate)	MEM_Method Most: 21 to 44 years (Reliability (all units))	MEM_Method Most: 21 to 44 years (Reliability (unit size≥75))	MEM_Method Most: all age groups (Most/Mod Provision)	MEM_Method Most: all age groups (Total N)	MEM_Method Most: all age groups (Rate)	MEM_Method Most: all age groups (Reliability (all units))	MEM_Method Most: all age groups (Reliability (unit size≥75))
ACOA 1	3	11	0.273	0.025	*	273	742	0.368	0.906	0.907	276	753	0.367	0.899	0.902
ACOA 2	6	13	0.462	0.029	*	122	236	0.517	0.753	0.756	128	249	0.514	0.746	0.752
ACOA 3	6	17	0.353	0.038	*	173	350	0.494	0.819	0.821	179	367	0.488	0.812	0.817
ACOA 4	54	115	0.470	0.211	0.188	28	74	0.378	0.489	*	82	189	0.434	0.690	0.697
ACOA 5	17	32	0.531	0.069	*	181	427	0.424	0.847	0.849	198	459	0.431	0.844	0.848
ACOA 6	42	84	0.500	0.163	0.144	304	595	0.511	0.885	0.886	346	679	0.510	0.889	0.892
ACOA 7	19	38	0.500	0.081	*	320	808	0.396	0.913	0.914	339	846	0.401	0.909	0.911
ACOA 8	8	14	0.571	0.032	*	161	309	0.521	0.800	0.802	169	323	0.523	0.792	0.797
ACOA 9	6	10	0.600	0.023	*	158	392	0.403	0.835	0.837	164	402	0.408	0.826	0.830
ACOA 10	66	137	0.482	0.242	0.216	994	2010	0.495	0.963	0.963	1060	2147	0.494	0.962	0.963
ACOA 11	42	75	0.560	0.149	0.131	464	764	0.607	0.908	0.909	506	839	0.603	0.908	0.911
ACOA 12	23	43	0.535	0.091	*	231	482	0.479	0.862	0.863	254	525	0.484	0.861	0.865
ACOA 13	9	21	0.429	0.047	*	355	686	0.517	0.899	0.900	364	707	0.515	0.893	0.896
ACOB 1	49	86	0.570	0.167	0.147	849	1755	0.484	0.958	0.958	898	1841	0.488	0.956	0.957
ACOB 2	42	92	0.457	0.176	0.156	710	1517	0.468	0.952	0.952	752	1609	0.467	0.950	0.951
ACOB 3	122	211	0.578	0.329	0.298	1819	3135	0.580	0.976	0.976	1941	3346	0.580	0.975	0.976

Health Plan	MEM_Method Most: 15 to <21 Years (Most/Mod Provision)	MEM_MethodMost: 15 to <21 Years (Total N)	MEM_Method Most: 15 to <21 Years (Rate)	MEM_MethodMost: 15 to <21 Years (Reliability (all units))	MEM_Method Most: 15 to <21 Years (Reliability (unit size≥75))	MEM_Method Most: 21 to 44 years (Most/Mod Provision)	MEM_Method Most: 21 to 44 years (Total N)	MEM_Method Most: 21 to 44 years (Rate)	MEM_Method Most: 21 to 44 years (Reliability (all units))	MEM_Method Most: 21 to 44 years (Reliability (unit size≥75))	MEM_Method Most: all age groups (Most/Mod Provision)	MEM_Method Most: all age groups (Total N)	MEM_Method Most: all age groups (Rate)	MEM_Method Most: all age groups (Reliability (all units))	MEM_Method Most: all age groups (Reliability (unit size≥75))
Non-ACO 1	0	0	*	*	*	36	71	0.507	0.479	*	36	71	0.507	0.456	*
Non-ACO 2	17	40	0.425	0.085	*	523	1199	0.436	0.939	0.940	540	1239	0.436	0.936	0.938
Non-ACO 3	49	104	0.471	0.195	0.173	630	1242	0.507	0.941	0.942	679	1346	0.504	0.941	0.942
Non-ACO 4	12	34	0.353	0.073	*	415	875	0.474	0.919	0.920	427	909	0.470	0.915	0.917
Non-ACO 5	0	0	*	*	*	4	10	0.400	0.115	*	4	10	0.400	0.106	*
Total or Mean	**592**	**1177**	**0.499**	*	*	**8750**	**17679**	**0.495**	*	*	**9342**	**18856**	**0.495**	*	*
*	*	*	*	**Overall Reliability**	**Overall Reliability**	*	*	*	**Overall Reliability**	**Overall Reliability**	*	*	*	**Overall Reliability**	**Overall Reliability**
*	Median n	39	*	**0.117**	**0.182**	Median n	714	*	**0.817**	**0.894**	Median n	730	*	**0.822**	**0.882**
*	Min n	0	*	*	*	Min n	10	*	*	*	Min n	10	*	*	*

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Table 7. Rates and reliabilities for provision of LARC methods in the postpartum period, Massachusetts MassHealth, 2019, by health plan

3 DAY POSTPARTUM – LARC

Health Plan	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability (all units))	LARCmeasure: 15 to <21 Years (Reliability (unit size≥75))	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability (all units))	LARCmeasure: 21 to 44 years (Reliability (unit size≥75))	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability (all units))	LARCmeasure: all age groups (Reliability (unit size≥75))
ACOA 1	0	11	0.000	0.471	*	18	742	0.024	0.959	0.957	18	753	0.024	0.965	0.963
ACOA 2	0	13	0.000	0.513	*	1	236	0.004	0.881	0.877	1	249	0.004	0.901	0.895
ACOA 3	0	17	0.000	0.579	*	2	350	0.006	0.917	0.913	2	367	0.005	0.930	0.926
ACOA 4	10	115	0.087	0.903	0.868	2	74	0.027	0.699	*	12	189	0.063	0.873	0.866
ACOA 5	0	32	0.000	0.721	*	1	427	0.002	0.931	0.928	1	459	0.002	0.943	0.940
ACOA 6	16	84	0.190	0.872	0.827	85	595	0.143	0.949	0.947	101	679	0.149	0.961	0.959
ACOA 7	0	38	0.000	0.755	*	1	808	0.001	0.962	0.961	1	846	0.001	0.969	0.967
ACOA 8	1	14	0.071	0.531	*	3	309	0.010	0.907	0.903	4	323	0.012	0.922	0.917
ACOA 9	1	10	0.100	0.447	*	5	392	0.013	0.925	0.922	6	402	0.015	0.936	0.932
ACOA 10	4	137	0.029	0.917	0.886	37	2010	0.018	0.984	0.984	41	2147	0.019	0.987	0.987
ACOA 11	19	75	0.253	0.859	0.810	78	764	0.102	0.960	0.958	97	839	0.116	0.968	0.966
ACOA 12	5	43	0.116	0.777	*	25	482	0.052	0.938	0.936	30	525	0.057	0.950	0.947
ACOA 13	0	21	0.000	0.630	*	15	686	0.022	0.956	0.954	15	707	0.021	0.963	0.960
ACOB 1	2	86	0.023	0.874	0.831	48	1755	0.027	0.982	0.981	50	1841	0.027	0.985	0.984
ACOB 2	2	92	0.022	0.882	0.840	13	1517	0.009	0.979	0.979	15	1609	0.009	0.983	0.982
ACOB 3	15	211	0.071	0.945	0.923	52	3135	0.017	0.990	0.990	67	3346	0.020	0.992	0.991
Non-ACO 1	0	0	*	*	*	7	71	0.099	0.691	*	7	71	0.099	0.721	*

Health Plan	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability (all units))	LARCmeasure: 15 to <21 Years (Reliability (unit size≥75))	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability (all units))	LARCmeasure: 21 to 44 years (Reliability (unit size≥75))	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability (all units))	LARCmeasure: all age groups (Reliability (unit size≥75))
Non-ACO 2	0	40	0.000	0.764	*	17	1199	0.014	0.974	0.973	17	1239	0.014	0.978	0.977
Non-ACO 3	11	104	0.106	0.894	0.856	41	1242	0.033	0.975	0.974	52	1346	0.039	0.980	0.979
Non-ACO 4	0	34	0.000	0.733	*	22	875	0.025	0.965	0.963	22	909	0.024	0.971	0.969
Non-ACO 5	0	0	*	*	*	0	10	0.000	0.239	*	0	10	0.000	0.267	*
Total or Mean	**86**	**1177**	**0.073**	*	*	**473**	**17679**	**0.027**	*	*	**559**	**18856**	**0.030**	*	*
*	*	*	*	**Overall Reliability**	**Overall Reliability**	*	*	*	**Overall Reliability**	**Overall Reliability**	*	*	*	**Overall Reliability**	**Overall Reliability**
*	Median n	39	*	**0.740**	**0.855**	Median n	714	*	**0.893**	**0.950**	Median n	730	*	**0.912**	**0.953**
*	Min n	0	*	*	*	Min n	10	*	*	*	Min n	10	*	*	*

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60 DAY POSTPARTUM – LARC

Health Plan	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability (all units))	LARCmeasure: 15 to <21 Years (Reliability (unit size≥75))	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability (all units))	LARCmeasure: 21 to 44 years (Reliability (unit size≥75))	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability (all units))	LARCmeasure: all age groups (Reliability (unit size≥75))
ACOA 1	2	11	0.182	0.170	*	106	742	0.143	0.911	0.912	108	753	0.143	0.913	0.914
ACOA 2	2	13	0.154	0.195	*	42	236	0.178	0.764	0.767	44	249	0.177	0.776	0.779
ACOA 3	1	17	0.059	0.240	*	52	350	0.149	0.828	0.830	53	367	0.144	0.836	0.838
ACOA 4	26	115	0.226	0.681	0.555	8	74	0.108	0.504	*	34	189	0.180	0.724	0.728
ACOA 5	7	32	0.219	0.373	*	49	427	0.115	0.854	0.856	56	459	0.122	0.864	0.866
ACOA 6	31	84	0.369	0.610	0.476	156	595	0.262	0.891	0.892	187	679	0.275	0.904	0.906
ACOA 7	7	38	0.184	0.414	*	93	808	0.115	0.917	0.918	100	846	0.118	0.922	0.923
ACOA 8	3	14	0.214	0.207	*	65	309	0.210	0.809	0.812	68	323	0.211	0.818	0.820
ACOA 9	3	10	0.300	0.157	*	33	392	0.084	0.843	0.845	36	402	0.090	0.848	0.850
ACOA 10	31	137	0.226	0.718	0.597	391	2010	0.195	0.965	0.966	422	2147	0.197	0.968	0.968
ACOA 11	27	75	0.360	0.582	0.448	169	764	0.221	0.913	0.914	196	839	0.234	0.921	0.922
ACOA 12	12	43	0.279	0.444	*	77	482	0.160	0.869	0.870	89	525	0.170	0.879	0.881
ACOA 13	6	21	0.286	0.281	*	139	686	0.203	0.904	0.905	145	707	0.205	0.908	0.909
ACOB 1	25	86	0.291	0.615	0.482	310	1755	0.177	0.960	0.961	335	1841	0.182	0.962	0.963
ACOB 2	16	92	0.174	0.631	0.499	202	1517	0.133	0.954	0.955	218	1609	0.135	0.957	0.958
ACOB 3	66	211	0.313	0.797	0.696	742	3135	0.237	0.977	0.978	808	3346	0.241	0.979	0.979
Non-ACO 1	0	0	*	*	*	14	71	0.197	0.494	*	14	71	0.197	0.496	*
Non-ACO 2	3	40	0.075	0.427	*	143	1199	0.119	0.943	0.944	146	1239	0.118	0.945	0.946
Non-ACO 3	23	104	0.221	0.659	0.530	240	1242	0.193	0.945	0.945	263	1346	0.195	0.949	0.950
Non-ACO 4	4	34	0.118	0.387	*	136	875	0.155	0.923	0.924	140	909	0.154	0.927	0.928
Non-ACO 5	0	0	*	*	*	4	10	0.400	0.121	*	4	10	0.400	0.913	*

Health Plan	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability (all units))	LARCmeasure: 15 to <21 Years (Reliability (unit size≥75))	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability (all units))	LARCmeasure: 21 to 44 years (Reliability (unit size≥75))	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability (all units))	LARCmeasure: all age groups (Reliability (unit size≥75))
Total or Mean	**295**	**1177**	**0.249**	*	*	**3167**	**17679**	**0.179**	*	*	**3462**	**18856**	**0.184**	*	*
*	*	*	*	**Overall Reliability**	**Overall Reliability**	*	*	*	**Overall Reliability**	**Overall Reliability**	*	*	*	**Overall Reliability**	**Overall Reliability**
*	Median n	39	*	**0.452**	**0.535**	Median n	714	*	**0.823**	**0.900**	Median n	730	*	**0.839**	**0.896**
*	Min n	0	*	*	*	Min n	10	*	*	*	Min n	10	*	*	*

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Table 8. Rates and reliabilities for provision of most and moderately effective contraceptive methods in the postpartum period, Louisiana Medicaid, 2019, by health plan

3 DAY POSTPARTUM – MOST/MOD

Health Plan	MEM_MethodMost: 15 to <21 Years (Most/Mod Provision)	MEM_MethodMost: 15 to <21 Years (Total N)	MEM_MethodMost: 15 to <21 Years (Rate)	MEM_MethodMost: 15 to <21 Years (Reliability)	MEM_MethodMost: 21 to 44 years (Most/Mod Provision)	MEM_MethodMost: 21 to 44 years (Total N)	MEM_MethodMost: 21 to 44 years (Rate)	MEM_MethodMost: 21 to 44 years (Reliability)	MEM_MethodMost: all age groups (Most/Mod Provision)	MEM_MethodMost: all age groups (Total N)	MEM_MethodMost: all age groups (Rate)	MEM_MethodMost: all age groups (Reliability)
MCO 1	15	162	0.093	0.302	207	1759	0.118	0.455	222	1921	0.116	0.479
MCO 2	30	438	0.068	0.539	360	2902	0.124	0.579	390	3340	0.117	0.615
MCO 3	29	584	0.050	0.610	490	4214	0.116	0.667	519	4798	0.108	0.697
MCO 4	48	1307	0.037	0.778	849	6991	0.121	0.768	897	8298	0.108	0.799
MCO 5	49	904	0.054	0.707	881	6317	0.139	0.750	930	7221	0.129	0.776
Total or Mean	**171**	**3395**	**0.050**	*	**2787**	**22183**	**0.126**	*	**2958**	**25578**	**0.116**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	744	*	**0.587**	Median n	5265.5	*	**0.644**	Median n	6009.5	*	**0.673**
*	Min n	162	*	*	Min n	1759	*	*	Min n	1921	*	*

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60 DAY POSTPARTUM – MOST/MOD

Health Plan	MEM_MethodMost: 15 to <21 Years (Most/Mod Provision)	MEM_MethodMost: 15 to <21 Years (Total N)	MEM_MethodMost: 15 to <21 Years (Rate)	MEM_MethodMost: 15 to <21 Years (Reliability)	MEM_MethodMost: 21 to 44 years (Most/Mod Provision)	MEM_MethodMost: 21 to 44 years (Total N)	MEM_MethodMost: 21 to 44 years (Rate)	MEM_MethodMost: 21 to 44 years (Reliability)	MEM_MethodMost: all age groups (Most/Mod Provision)	MEM_MethodMost: all age groups (Total N)	MEM_MethodMost: all age groups (Rate)	MEM_MethodMost: all age groups (Reliability)
MCO 1	87	162	0.537	*	881	1759	0.501	0.464	968	1921	0.504	0.517
MCO 2	238	438	0.543	*	1499	2902	0.517	0.588	1737	3340	0.520	0.651
MCO 3	295	584	0.505	*	2057	4214	0.488	0.675	2352	4798	0.490	0.728
MCO 4	681	1307	0.521	*	3538	6991	0.506	0.775	4219	8298	0.508	0.822
MCO 5	498	904	0.551	*	3322	6317	0.526	0.757	3820	7221	0.529	0.801
Total or Mean	**1799**	**3395**	**0.530**	*	**11297**	**22183**	**0.509**	*	**13096**	**25578**	**0.512**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	744	*	*	Median n	5265.5	*	**0.652**	Median n	6009.5	*	**0.704**
*	Min n	162	*	*	Min n	1759	*	*	Min n	1921	*	*

Note: Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

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Table 9. Rates and reliabilities for provision of LARC methods in the postpartum period, Louisiana Medicaid, 2019, by health plan

3 DAY POSTPARTUM – LARC

Health Plan	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability)	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability)	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability)
MCO 1	9	162	0.056	0.023	54	1759	0.031	0.283	63	1921	0.033	0.380
MCO 2	21	438	0.048	0.059	69	2902	0.024	0.394	90	3340	0.027	0.516
MCO 3	17	584	0.029	0.077	90	4214	0.021	0.486	107	4798	0.022	0.605
MCO 4	39	1307	0.030	0.157	134	6991	0.019	0.610	173	8298	0.021	0.726
MCO 5	36	904	0.040	0.114	155	6317	0.025	0.586	191	7221	0.026	0.698
Total or Mean	**122**	**3395**	**0.036**	*	**502**	**22183**	**0.023**	*	**624**	**25578**	**0.024**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	744	*	**0.086**	Median n	5265.5	*	**0.472**	Median n	6009.5	*	**0.585**
*	Min n	162	*	*	Min n	1759	*	*	Min n	1921	*	*

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60 DAY POSTPARTUM – LARC

Health Plan	LARCmeasure: 15 to <21 Years (LARC Provision)	LARCmeasure: 15 to <21 Years (Total N)	LARCmeasure: 15 to <21 Years (Rate)	LARCmeasure: 15 to <21 Years (Reliability)	LARCmeasure: 21 to 44 years (LARC Provision)	LARCmeasure: 21 to 44 years (Total N)	LARCmeasure: 21 to 44 years (Rate)	LARCmeasure: 21 to 44 years (Reliability)	LARCmeasure: all age groups (LARC Provision)	LARCmeasure: all age groups (Total N)	LARCmeasure: all age groups (Rate)	LARCmeasure: all age groups (Reliability)
MCO 1	35	162	0.216	0.000	271	1759	0.154	0.528	306	1921	0.159	0.491
MCO 2	75	438	0.171	0.000	420	2902	0.145	0.649	495	3340	0.148	0.626
MCO 3	102	584	0.175	0.000	516	4214	0.122	0.728	618	4798	0.129	0.707
MCO 4	233	1307	0.178	0.000	902	6991	0.129	0.816	1135	8298	0.137	0.806
MCO 5	148	904	0.164	0.000	817	6317	0.129	0.801	965	7221	0.134	0.784
Total or Mean	**593**	**3395**	**0.175**	*	**2926**	**22183**	**0.132**	*	**3519**	**25578**	**0.138**	*
*	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**	*	*	*	**Overall Reliability**
*	Median n	744	*	**0.000**	Median n	5265.5	*	**0.704**	Median n	6009.5	*	**0.683**
*	Min n	162	*	*	Min n	1759	*	*	Min n	1921	*	*

Note: Reliability estimates are the same regardless of using the unit size cutoff of 75 because all unit sizes are above 75.

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2016 Submission (All following tables are from 2016 submission)

Table 1. Rates and reliabilities for use of most and moderately effective contraceptive methods in the postpartum period, Iowa Medicaid Enterprise, 2013, by public health region

3 DAY POSTPARTUM – MOST/MOD

Public Health Region	MEM_MethodMost: all age groups (Not Used)	MEM_MethodMost: all age groups (Used Most/Mod)	MEM_MethodMost: all age groups (Total N)	MEM_MethodMost: all age groups (Rate)	*	*
1	3103	290	3393	0.085	*	*
2	823	113	936	0.121	*	*
3	1546	180	1726	0.104	*	*
4	1099	124	1223	0.101	*	*
5	1328	186	1514	0.123	*	*
6	2402	331	2733	0.121	*	*
Total or Mean	**10301**	**1224**	**11525**	**0.106**	*	*
*	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)
Median Patient Volume	*	Median n	1620	0.01767	0.0053	**0.8969**
Minimum Patient Volume (Floor)	*	Min n	936	0.01767	0.0053	0.8341

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60 DAY POSTPARTUM - MOST/MOD

Public Health Region	MEM_Method Most: 15 to <21 Years (Not Used)	MEM_Method Most: 15 to <21 Years (Used Most/Mod)	MEM_Method Most: 15 to <21 Years (Total N)	MEM_Method Most: 15 to <21 Years (Rate)	*	*	MEM_Method Most: 21 to 45 years (Not Used)	MEM_Method Most: 21 to 45 years (Used Most/Mod)	MEM_Method Most: 21 to 45 years (Total N)	MEM_Method Most: 21 to 45 years (Rate)	*	*	MEM_Method Most: all age groups, 15-44 years (Not Used)	MEM_Method Most: all age groups, 15-44 years (Used Most/Mod)	MEM_Method Most: all age groups, 15-44 years (Total N)	MEM_Method Most: all age groups, 15-44 years (Rate)	*	*
1	363	243	606	0.401	*	*	1689	1098	2787	0.394	*	*	2052	1341	3393	0.395	*	*
2	81	64	145	0.441	*	*	411	380	791	0.480	*	*	492	444	936	0.474	*	*
3	203	111	314	0.354	*	*	864	548	1412	0.388	*	*	1067	659	1726	0.382	*	*
4	138	106	244	0.434	*	*	526	453	979	0.463	*	*	664	559	1223	0.457	*	*
5	176	155	331	0.468	*	*	632	551	1183	0.466	*	*	808	706	1514	0.466	*	*
6	290	213	503	0.423	*	*	1265	965	2230	0.433	*	*	1555	1178	2733	0.431	*	*
Total or Mean	**1251**	**892**	**2143**	**0.416**	*	*	**5387**	**3995**	**9382**	**0.426**	*	*	**6638**	**4887**	**11525**	**0.424**	*	*
*	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)
Median Patient Volume	*	Median n	322.5	0.00847	0.0026	**0.4537**	*	Median n	1298	0.0179	0.0054	**0.8760**	*	Median n	1620	0.0181	0.0055	**0.8989**
Minimum Patient Volume (Floor)	*	Min n	145	0.00847	0.0026	0.2719	*	Min n	791	0.0179	0.0054	0.8116	*	Min n	936	0.0181	0.0055	0.8370

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Table 2. Rates and reliabilities for use of **LARC** methods in the postpartum period, Iowa Medicaid Enterprise, 2013, by public health region

3 DAY POSTPARTUM - LARC

Public Health Region	LARCMeasure: all age groups (Not Used)	LARCMeasure: all age groups (Used LARC)	LARCMeasure: all age groups (Total N)	LARCMeasure: all age groups (Rate)	*	*
1	3392	1	3393	0.000	*	*
2	935	1	936	0.001	*	*
3	1725	1	1726	0.001	*	*
4	1223	0	1223	0.000	*	*
5	1502	12	1514	0.008	*	*
6	2705	28	2733	0.010	*	*
Total or Mean	**11482**	**43**	**11525**	**0.004**	*	*
*	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)
Median Patient Volume	*	Median n	1620	2.483	0.4301	**0.9992**
Minimum Patient Volume (Floor)	*	Min n	936	2.483	0.4301	0.9986

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60 DAY POSTPARTUM - LARC

Public Health Region	LARC Measure: 15-20 Years (Not Used)	LARC Measure: 15-20 Years (Used LARC)	LARC Measure: 15-20 Years (Total N)	LARC Measure: 15-20 Years (Rate)	*	*	LARC Measure: 21-44 years (Not Used)	LARC Measure: 21-44 years (Used LARC)	LARC Measure: 21-44 years (Total N)	LARC Measure: 21-44 years (Rate)	*	*	LARC Measure: all age groups, 15-44 years (Not Used)	LARC Measure: all age groups, 15-44 years (Used LARC)	LARC Measure: all age groups, 15-44 years (Total N)	LARC Measure: all age groups, 15-44 years (Rate)	*	*
1	519	87	606	0.144	*	*	2534	253	2787	0.091	*	*	3053	340	3393	0.100	*	*
2	125	20	145	0.138	*	*	695	96	791	0.121	*	*	820	116	936	0.124	*	*
3	282	32	314	0.102	*	*	1293	119	1412	0.084	*	*	1575	151	1726	0.087	*	*
4	211	33	244	0.135	*	*	894	85	979	0.087	*	*	1105	118	1223	0.096	*	*
5	279	52	331	0.157	*	*	1058	125	1183	0.106	*	*	1337	177	1514	0.117	*	*
6	418	85	503	0.169	*	*	1980	250	2230	0.112	*	*	2398	335	2733	0.123	*	*
Total or Mean	**1834**	**309**	**2143**	**0.144**	*	*	**8454**	**928**	**9382**	**0.099**	*	*	**10288**	**1237**	**11525**	**0.107**	*	*
*	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)
Median Patient Volume	*	Median n	322.5	0.00816	0.0025	**0.4445**	*	Median n	1298	0.0129	0.0039	**0.8357**	*	Median n	1620	0.01451	0.0044	**0.8772**
Minimum Patient Volume (Floor)	*	Min n	145	0.00816	0.0025	0.2646	*	Min n	791	0.0129	0.0039	0.7562	*	Min n	936	0.01451	0.0044	0.8050

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Table 3. Rates and reliabilities for use of most and moderately effective contraceptive methods in the postpartum period, Louisiana Medicaid, 2014, by region and health plan

3-DAY POSTPARTUM / MOST/MOD

Public Health Region	*	MEM_Method Most: both age groups, 15-44 (Not Used)	MEM_Method Most: both age groups, 15-44 (Used Most-Mod)	MEM_Method Most: both age groups, 15-44 (Total N)	MEM_Method Most: both age groups, 15-44 (Rate)	*	*
1	*	6123	537	6660	0.081	*	*
2	*	4265	375	4640	0.081	*	*
3	*	2698	337	3035	0.111	*	*
4	*	4076	524	4600	0.114	*	*
5	*	2041	209	2250	0.093	*	*
6	*	1988	290	2278	0.127	*	*
7	*	3505	417	3922	0.106	*	*
8	*	2662	267	2929	0.091	*	*
9	*	3366	300	3666	0.082	*	*
Total or Mean	*	**30724**	**3256**	**33980**	**0.096**	*	*
*	*	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)
Median Patient Volume	*	*	Median n	3666	0.02831	0.0085	**0.9693**
Minimum Patient Volume (Floor)	*	*	Min n	2250	0.02831	0.0085	0.9509
Health Plan	*	MEM_Method Most: both age groups, 15-44 (Not Used)	MEM_Method Most: both age groups, 15-44 (Used Most/Mod)	MEM_Method Most: both age groups, 15-44 (Total N)	MEM_Method Most: both age groups, 15-44 (Rate)	*	*
MCO1	Prepaid	4625	471	5096	0.092	*	*
MCO2	Prepaid	4555	410	4965	0.083	*	*
MCO3	Prepaid	4367	448	4815	0.093	*	*
MCO4	Shared	6309	731	7040	0.104	*	*
MCO5	Shared	8940	1045	9985	0.105	*	*
Total or Mean		**28796**	**3105**	**31901**	**0.097**	*	*
*	*	*	*	*	**VarL2**	**ICC**	Health plan Reliability (Var L2)
Reliability Based on Median Patient Volume	*	*	Median n	5096	0.007329	0.0022	**0.9190**
Calculated Based on Minimum Patient Volume (Floor)	*	*	Min n	4815	0.007329	0.0022	0.9147

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60-DAY POSTPARTUM / MOST/MOD

Public Health Region	*	MEM_Method Most: 15 to <21 Years (Not Used)	MEM_Method Most: 15 to <21 Years (Used Most/Mod)	MEM_Method Most: 15 to <21 Years (Total N)	MEM_Method Most: 15 to <21 Years (Rate)	*	*	MEM_Method Most: 21 to 45 years (Not Used)	MEM_Method Most: 21 to 45 years (Used Most/Mod)	MEM_Method Most: 21 to 45 years (Total N)	MEM_Method Most: 21 to 45 years (Rate)	*	*	MEM_Method Most: both age groups, 15-44 (Not Used)	MEM_Method Most: both age groups, 15-44 (Used Most/Mod)	MEM_Method Most: both age groups, 15-44 (Total N)	MEM_Method Most: both age groups, 15-44 (Rate)	*	*
1	*	591	335	926	0.362	*	*	3528	2206	5734	0.385	*	*	4119	2541	6660	0.382	*	*
2	*	424	336	760	0.442	*	*	2146	1734	3880	0.447	*	*	2570	2070	4640	0.446	*	*
3	*	318	222	540	0.411	*	*	1322	1173	2495	0.470	*	*	1640	1395	3035	0.460	*	*
4	*	517	424	941	0.451	*	*	1957	1702	3659	0.465	*	*	2474	2126	4600	0.462	*	*
5	*	280	205	485	0.423	*	*	1002	763	1765	0.432	*	*	1282	968	2250	0.430	*	*
6	*	308	193	501	0.385	*	*	988	789	1777	0.444	*	*	1296	982	2278	0.431	*	*
7	*	456	304	760	0.400	*	*	1701	1461	3162	0.462	*	*	2157	1765	3922	0.450	*	*
8	*	322	246	568	0.433	*	*	1261	1100	2361	0.466	*	*	1583	1346	2929	0.460	*	*
9	*	376	290	666	0.435	*	*	1740	1260	3000	0.420	*	*	2116	1550	3666	0.423	*	*
Total or Mean	*	**3592**	**2555**	**6147**	**0.416**	*	*	**15645**	**12188**	**27833**	**0.438**	*	*	**19237**	**14743**	**33980**	**0.434**	*	*
*	*	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)
Median Patient Volume	*	*	Median n	666	0.008648	0.0026	**0.6364**	*	Median n	3000	0.01085	0.0033	**0.9082**	*	Median n	3666	0.009354	0.0028	**0.9125**
Minimum Patient Volume (Floor)	*	*	Min n	485	0.008648	0.0026	0.5604	*	Min n	1765	0.01085	0.0033	0.8534	*	Min n	2250	0.009354	0.0028	0.8648
Health Plan		MEM_Method Most: 15 to <21 Years (Not Used)	MEM_Method Most: 15 to <21 Years (Used Most/Mod)	MEM_Method Most: 15 to <21 Years (Total N)	MEM_Method Most: 15 to <21 Years (Rate)	*	*	MEM_Method Most: 21 to 45 years (Not Used)	MEM_Method Most: 21 to 45 years (Used Most/Mod)	MEM_Method Most: 21 to 45 years (Total N)	MEM_Method Most: 21 to 45 years (Rate)	*	*	MEM_Method Most: both age groups, 15-44 (Not Used)	MEM_Method Most: both age groups, 15-44(Used Most/Mod)	MEM_Method Most: both age groups, 15-44 (Total N)	MEM_Method Most: both age groups, 15-44 (Rate)	*	*
MCO1	Prepaid	540	405	945	0.429	*	*	2399	1752	4151	0.422	*	*	2939	2157	5096	0.423	*	*
MCO2	Prepaid	614	327	941	0.348	*	*	2461	1563	4024	0.388	*	*	3075	1890	4965	0.381	*	*
MCO3	Prepaid	602	373	975	0.383	*	*	2166	1674	3840	0.436	*	*	2768	2047	4815	0.425	*	*
MCO4	Shared	662	629	1291	0.487	*	*	3004	2745	5749	0.477	*	*	3666	3374	7040	0.479	*	*
MCO5	Shared	947	769	1716	0.448	*	*	4221	4048	8269	0.490	*	*	5168	4817	9985	0.482	*	*
Total or Mean	*	**3365**	**2503**	**5868**	**0.427**	*	*	**14251**	**11782**	**26033**	**0.453**	*	*	**17616**	**14285**	**31901**	**0.448**	*	*

Public Health Region	*	MEM_Method Most: 15 to <21 Years (Not Used)	MEM_Method Most: 15 to <21 Years (Used Most/Mod)	MEM_Method Most: 15 to <21 Years (Total N)	MEM_Method Most: 15 to <21 Years (Rate)	*	*	MEM_Method Most: 21 to 45 years (Not Used)	MEM_Method Most: 21 to 45 years (Used Most/Mod)	MEM_Method Most: 21 to 45 years (Total N)	MEM_Method Most: 21 to 45 years (Rate)	*	*	MEM_Method Most: both age groups, 15-44 (Not Used)	MEM_Method Most: both age groups, 15-44 (Used Most/Mod)	MEM_Method Most: both age groups, 15-44 (Total N)	MEM_Method Most: both age groups, 15-44 (Rate)	*	*
*	*	*	*	*	**VarL2**	**ICC**	Health plan Reliability (Var L2)	*	*	*	**VarL2**	**ICC**	Health plan Reliability (Var L2)	*	*	*	**VarL2**	**ICC**	Health plan Reliability (Var L2)
Reliability Based on Median Patient Volume	*	*	Median n	975	0.0374	0.0112	**0.9172**	*	Median n	4151	0.02186	0.0066	**0.9650**	*	Median n	5096	0.02385	0.0072	**0.9736**
Calculated Based on Minimum Patient Volume (Floor)	*	*	Min n	941	0.0374	0.0112	0.9145	*	Min n	3840	0.02186	0.0066	0.9623	*	Min n	4815	0.02385	0.0072	0.9721

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Table 4. Rates and reliabilities for use of LARC methods in the postpartum period, Louisiana Medicaid, 2014, by region and health plan

3-DAY POSTPARTUM LARC

Public Health Region	*	LARCMeasure: both age groups, 15-44 (Not Used)	LARCMeasure: both age groups, 15-44 (Used LARC)	LARCMeasure: both age groups, 15-44 (Total N)	LARCMeasure: both age groups, 15-44 (Rate)	*	*
1	*	6644	16	6660	0.002	*	*
2	*	4628	12	4640	0.003	*	*
3	*	3033	2	3035	0.001	*	*
4	*	4595	5	4600	0.001	*	*
5	*	2237	13	2250	0.006	*	*
6	*	2277	1	2278	0.000	*	*
7	*	3894	28	3922	0.007	*	*
8	*	2921	8	2929	0.003	*	*
9	*	3664	2	3666	0.001	*	*
Total or Mean	*	**33893**	**87**	**33980**	**0.003**	*	*
*	*	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)
Median Patient Volume	*	*	Median n	3666	0.663	0.1677	**0.9986**
Minimum Patient Volume (Floor)	*	*	Min n	2250	0.663	0.1677	0.9978
Health Plan	*	**LARCMeasure: both age groups, 15-44 (Not Used)**	**LARCMeasure: both age groups, 15-44 (Used LARC)**	**LARCMeasure: both age groups, 15-44 (Total N)**	**LARCMeasure: both age groups, 15-44 (Rate)**	*	*
MCO1	Prepaid	5078	18	5096	0.004	*	*
MCO2	Prepaid	4958	7	4965	0.001	*	*
MCO3	Prepaid	4801	14	4815	0.003	*	*
MCO4	Shared	7014	26	7040	0.004	*	*
MCO5	Shared	9964	21	9985	0.002	*	*
Total or Mean	*	**31815**	**86**	**31901**	**0.003**	*	*
*	*	*	*	*	**VarL2**	**ICC**	Health plan Reliability (Var L2)
Reliability Based on Median Patient Volume	*	*	Median n	5096	0.03997	0.0120	**0.9841**
Calculated Based on Minimum Patient Volume (Floor)	*	*	Min n	4815	0.03997	0.0120	0.9832

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60-DAY POSTPARTUM LARC

Public Health Region	*	LARCMeasure: 15 to <21 Years (Not Used)	LARCMeasure: 15 to <21 Years (Used LARC)	LARCMeasure: 15 to <21 Years (Total N)	LARCMeasure: 15 to <21 Years (Rate)	*	*	LARCMeasure: 21 to 45 years (Not Used)	LARCMeasure: 21 to 45 years (Used LARC)	LARCMeasure: 21 to 45 years (Total N)	LARCMeasure: 21 to 45 years (Rate)	*	*	LARCMeasure: both age groups, 15-44 (Not Used)	LARCMeasure: both age groups, 15-44 (Used LARC)	LARCMeasure: both age groups, 15-44 (Total N)	LARCMeasure: both age groups, 15-44 (Rate)	*	*
1	*	810	116	926	0.125	*	*	5253	481	5734	0.084	*	*	6063	597	6660	0.090	*	*
2	*	642	118	760	0.155	*	*	3419	461	3880	0.119	*	*	4061	579	4640	0.125	*	*
3	*	493	47	540	0.087	*	*	2270	225	2495	0.090	*	*	2763	272	3035	0.090	*	*
4	*	877	64	941	0.068	*	*	3425	234	3659	0.064	*	*	4302	298	4600	0.065	*	*
5	*	429	56	485	0.115	*	*	1597	168	1765	0.095	*	*	2026	224	2250	0.100	*	*
6	*	476	25	501	0.050	*	*	1705	72	1777	0.041	*	*	2181	97	2278	0.043	*	*
7	*	647	113	760	0.149	*	*	2821	341	3162	0.108	*	*	3468	454	3922	0.116	*	*
8	*	490	78	568	0.137	*	*	2143	218	2361	0.092	*	*	2633	296	2929	0.101	*	*
9	*	585	81	666	0.122	*	*	2741	259	3000	0.086	*	*	3326	340	3666	0.093	*	*
Total or Mean	*	**5449**	**698**	**6147**	**0.114**	*	*	**25374**	**2459**	**27833**	**0.088**	*	*	**30823**	**3157**	**33980**	**0.093**	*	*
*	*	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)	*	*	*	**VarL1**	**ICC**	Region Reliability (Var L1)
Median Patient Volume	*	*	Median n	666	0.1302	0.0381	**0.9634**	*	Median n	3000	0.09167	0.0271	**0.9882**	*	Median n	3666	0.1013	0.0299	**0.9912**
Minimum Patient Volume (Floor)	*	*	Min n	485	0.1302	0.0381	0.9505	*	Min n	1765	0.09167	0.0271	0.9801	*	Min n	2250	0.1013	0.0299	0.9858
Health Plan	*	LARCMeasure: 15 to <21 Years (Not Used)	LARCMeasure: 15 to <21 Years (Used LARC)	LARCMeasure: 15 to <21 Years (Total N)	LARCMeasure: 15 to <21 Years (Rate)	*	*	LARCMeasure: 21 to 45 years (Not Used	LARCMeasure: 21 to 45 years (Used LARC)	LARCMeasure: 21 to 45 years (Total N)	LARCMeasure: 21 to 45 years (Rate)	*	*	LARCMeasure: both age groups, 15-44 (Not Used)	LARCMeasure: both age groups, 15-44 (Used LARC)	LARCMeasure: both age groups, 15-44 (Total N)	LARCMeasure: both age groups, 15-44 (Rate)	*	*
MCO1	Prepaid	831	114	945	0.121	*	*	3795	356	4151	0.086	*	*	4626	470	5096	0.092	*	*
MCO2	Prepaid	883	58	941	0.062	*	*	3843	181	4024	0.045	*	*	4726	239	4965	0.048	*	*
MCO3	Prepaid	860	115	975	0.118	*	*	3492	348	3840	0.091	*	*	4352	463	4815	0.096	*	*
MCO4	Shared	1112	179	1291	0.139	*	*	5151	598	5749	0.104	*	*	6263	777	7040	0.110	*	*
MCO5	Shared	1495	221	1716	0.129	*	*	7345	924	8269	0.112	*	*	8840	1145	9985	0.115	*	*
Total or Mean	*	**5181**	**687**	**5868**	**0.117**	*	*	**23626**	**2407**	**26033**	**0.092**	*	*	**28807**	**3094**	**31901**	**0.097**	*	*

Public Health Region	*	LARCMeasure: 15 to <21 Years (Not Used)	LARCMeasure: 15 to <21 Years (Used LARC)	LARCMeasure: 15 to <21 Years (Total N)	LARCMeasure: 15 to <21 Years (Rate)	*	*	LARCMeasure: 21 to 45 years (Not Used)	LARCMeasure: 21 to 45 years (Used LARC)	LARCMeasure: 21 to 45 years (Total N)	LARCMeasure: 21 to 45 years (Rate)	*	*	LARCMeasure: both age groups, 15-44 (Not Used)	LARCMeasure: both age groups, 15-44 (Used LARC)	LARCMeasure: both age groups, 15-44 (Total N)	LARCMeasure: both age groups, 15-44 (Rate)	*	*
*	*	*	*	*	**VarL2**	**ICC**	Health plan Reliability (Var L2)	*	*	*	**VarL2**	**ICC**	Health plan Reliability (Var L2)	*	*	*	**VarL2**	**ICC**	Health plan Reliability (Var L2)
Reliability Based on Median Patient Volume	*	*	Median n	975	0.08402	0.0249	**0.9614**	*	Median n	4151	0.1157	0.0340	**0.9932**	*	Median n	5096	0.1113	0.0327	**0.9942**
Calculated Based on Minimum Patient Volume (Floor)	*	*	Min n	941	0.08402	0.0249	0.9600	*	Min n	3840	0.1157	0.0340	0.9926	*	Min n	4815	0.1113	0.0327	0.9939

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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.

Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)

If other:

3b. Electronic Sources

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

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

ALL data elements are in defined fields in electronic claims

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).

In 2019, OPA funded the University of California San Francisco (UCSF) to develop and submit to NQF for endorsement an eMeasure (aka eCQM) for postpartum contraception. The goal of this collaboration is to enhance the quality of contraceptive services, particularly in underserved populations through widespread use of validated performance measures for contraceptive care. These contraceptive eCQMs would be disseminated and utilized in diverse health care settings, including Community Health Centers (CHCs). Building upon previous work completed by OPA, UCSF's project team is refining the specifications of an eCQM version of this measure to utilize a new data element that enables patients to self-report their need for pregnancy prevention within 60 days of live birth delivery. Data collection for reliability and validity analyses required for submitting the eCQM for NQF endorsement is also underway.

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.

NQF #2902 was one of three contraceptive care measures included as part of the Centers for Medicaid & Medicare Services' (CMS) Maternal and Infant Health Initiative (MIHI). From 2015 to 2018, thirteen MIHI grantees tested and developed these first metrics for contraceptive care. NQF #2902 became publicly reported as part of CMS' Adult and Child Core Sets of Health Care Quality Measures in 2017. This allows states and territories access to the measure specifications, code sets, and technical assistance for calculation so that they can voluntarily submit their annual their measure scores to CMS. Overall, these experiences have confirmed that the measures can be feasibly calculated using existing claims data. As documented in an analytic brief (https://www.medicaid.gov/medicaid/quality-of-care/downloads/mihi-contraceptive-measures.pdf), several lessons learned from the CMS MIHI are summarized below:

OPA and MIHI grantees participated in a "co-design process" to develop and refine the measure specifications together, which furthered the collaborative learning process for the measure steward and users. The collaborative learning helped to expand the code sets used to define the numerator for NQF #2902, as several grantees shared the codes that they used for contraceptive care that were missing from the early specifications. OPA continues to ask states to share any additional administrative codes or state-specific policies they utilize for measure calculation. OPA then considers these codes for future measure updates. This is consistent with the approach used by NCQA for its Chlamydia Screening in Women measure for HEDIS (NQF #0033).

U.S. territories require technical assistance for NQF #2902 calculation specific to the unique features of their available data and health care delivery system. One MIHI grantee was a U.S. territory, and its analysis data included only LARC methods provided in the hospital plus a subset of most or moderately effective methods received in the public health clinics. As a result of missing contraceptive services data from private and public clinics, the grantee's reported rates were noticeably lower than the other MIHI grantees.

Users have noted that the measure calculation is time-consuming and complex, even after the measure specification was simplified to no longer account for LARC removals. Furthermore, while OPA has provided a set of SAS programs to compute NQF #2902, this syntax can be challenging to troubleshoot and adapt across data systems. OPA provides technical assistance to users requesting clarification and help with the SAS programs. Some ask for assistance in revising programs customized to their computing environment and creating a dataset of women eligible to be included in the measure denominator, which can require customized coaching sessions. OPA plans to explore ways to improve the efficiency of the SAS syntax and other platforms for syntax.

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)*.

Not applicable. The measure specifications, code lists, programming code and NSFG tables needed to interpret scores will all be available at no charge on the OPA website.

4. Usability and Use

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

4a. Accountability and Transparency

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

4.1. Current and Planned Use

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

Specific Plan for Use	Current Use (for current use provide URL)
*	Public Reporting https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/index.html Center for Medicaid and CHIP Services Quality Improvement (Internal to the specific organization) Iowa Medicaid Enterprise https://dhs.iowa.gov/ime/members/medicaid-a-to-z Louisiana Medicaid https://qualitydashboard.ldh.la.gov/ MassHealth https://www.mass.gov/orgs/masshealth Washington State Health Care Authority https://www.hca.wa.gov/about-hca/reproductive-health Title X Family Planning Program https://rhntc.org/resources/contraceptive-access-change-package NQF Core Quality Measure Collaborative (Planned Use) http://www.qualityforum.org/cqmc/

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4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

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

NQF #2902 current use is presented for six programs which are: federal Medicaid efforts to support state use of the measures, and state Medicaid programs (i.e., the Iowa Medicaid Enterprise, Texas Medicaid, the Washington State Health Care Authority, MassHealth, Louisiana Medicaid). We also describe planned use of NQF #2902 in the Core Quality Measure Collaborative.

1. Centers for Medicaid & Medicare Services (CMS): Maternal and Infant Health Initiative (MIHI), Core Measure Set

CMS' Centers for Medicaid and CHIP Services (CMCS) incorporated the contraceptive care measures into the Core Set for Adult and Child Health Care Quality Measures, which evaluates quality of care accessed by over 73 million Medicaid and CHIP beneficiaries in the United States. NQF #2902 was added in 2017, which allows all 50 states in the nation to report the measure scores on a voluntary basis. While CMCS has collected NQF #2902 rates since 2015 from 13 MIHI grantees, it only releases yearly Adult and Child Core Set data for measures that were reported by at least 25 states and met its internal standards for data quality. For federal fiscal year (FFY) 2018, NQF #2902 met CMCS's threshold for public reporting of state-specific results, and thus CMS publicly reported these rates among both age groups for 31 states for the first time. For FFY 2019, 32 states reported measure scores for ages 15-20; 29 states reported measure scores for ages 21-44. Measure scores are calculated from inpatient, outpatient, and pharmacy administrative claims from facilities delivering primary care and reproductive health services. These scores are reported to CMCS at the state population level by age group, and some states compute and publish NQF #2902 by health plan. For more details on the CMCS's Core set, see: https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/index.html.
The state agencies that administer Medicaid in Iowa, Louisiana, Massachusetts, Texas, and Washington report measure scores to CMCS and utilize NQF #2902 for internal quality improvement.

2. Iowa Medicaid Enterprise (IME)

Approximately 25% of Iowa's population in fiscal year (FY) 2020 is estimated to be served by IME, which provides contraceptive services to female Medicaid beneficiaries ages 15-44 residing in 99 counties and participating in either the general Medicaid program or the state-funded Family Planning Program (FPP). During FY 2019, Medicaid services in Iowa were provided primarily through two managed care organizations (MCOs), although a small percentage of clients (approximately 7%) were provided care on a fee-for-service basis. In partnership with CMCS MIHI grantee Iowa Department of Public Health, IME has annually calculated and publicly reported NQF #2902 for the past six years at the levels of state and public health region populations. Approximately 14,223 eligible women ages 15-44 were included in the measure denominator in 2018; in 2019, the number of women included was 14,386.

3. Texas Medicaid using CMS's T-MSIS Analysis Files

Using the Centers for Medicaid & Medicare Services T-MSIS Analysis Files (CMS TAF), NQF #2902 was calculated among female Medicaid clients aged 15-44 years who resided in Texas in 2016. A probability proportional to size sampling strategy was used to select a representative sample of 70 out of a total of 254 Texas counties located in 10 (out of 11) public health regions. Due to CMS TAF's small number suppression standard, small cells with n=10 in the dataset were suppressed and therefore, the analysis only contained records with both numerators and denominators =10. Since 2017, Texas Medicaid has annually calculated NQF #2902. The final sample included 53,192 postpartum women who received services from January 1 through December 31, 2016.
In 2016, Texas Medicaid delivered contraceptive services to women through its general Medicaid program and two state-funded programs, Healthy Texas Women (HTW) and the Family Planning Program. HTW served non-pregnant female clients who are ages 15 to 44, U.S. citizens and eligible immigrants residing in the state, do not currently receive full Medicaid benefits, CHIP, or Medicare Part A or B, do not have private health insurance that covers family planning services, unless filing a claim on the health insurance would cause physical, emotional, or other harm from a spouse, parent, or other person; and have a countable household income at or below 200% of FPL. Clients younger than 18 years old must apply for HTW coverage with a parent or

guardian. If ineligible for HTW, a female may qualify for general Medicaid or Family Planning Program services. Family Planning Program serves Texas male and female residents ages 64 and younger who are at or below 250% FPL.
During fiscal year 2016, Medicaid services in Texas were provided primarily through 19 managed care organizations (MCOs), although a small percentage of clients (approximately 8%) were provided care on a fee-for-service basis.

4. Washington State Health Care Authority (WA HCA)

In 2019, the WA HCA provided contraceptive services to female Medicaid clients aged 15-44 years who resided in 39 counties. WA HCA delivered contraceptive services to these women via the general Medicaid program or the state's family planning waiver programs, Family Planning Only and Family Planning Only – Pregnancy Related. Formerly known as Take Charge, Family Planning Only is a 1115 demonstration waiver program that serves low-income (up to 260% of FPL) uninsured male and female clients seeking to prevent unintended pregnancy, and teens and domestic violence victims who need confidential family planning services. The Family Planning Only – Pregnancy Related program (previously known as the Family Planning Only extension) provides services to recently pregnant women who lose Medicaid coverage 60 days post-pregnancy. The Washington Medicaid program serves 1.8 million members and includes 5 MCOs; about 85% of WA HCA's clients were enrolled in managed care. A CMCS MIHI grantee, WA HCA has annually calculated and publicly reported NQF #2902 at the health plan level for the past six years. Approximately 20,288 postpartum women ages 15-44 comprise the NQF #2902 denominator in 2019.

5. Massachusetts Medicaid (MassHealth)

In 2019, MassHealth delivered contraceptive services to female Medicaid clients aged 15-44 who resided in 14 counties and participated in 21 health plans. Sixteen of these health plans were accountable care organizations (ACOs). During fiscal year 2019, almost half of MassHealth's 1.8 million members are now enrolled in an ACO; about 32% of clients receive care on a fee-for-service basis. Through the CMCS MIHI funding awarded to the Commonwealth of Massachusetts, MassHealth has annually calculated and reported NQF #2902 for the past six years for the state. In 2019, approximately 18,856 postpartum women ages 15-44 were included in the measure denominator.

6. Louisiana Medicaid (LA Medicaid)

The LA Medicaid dataset for 2019 included all female Medicaid enrollees aged 15-44 years who resided in 64 parishes. Almost 40% of Louisiana's population is enrolled in its Medicaid program, which provides contraceptive services to women through its general Medicaid program and its family planning state-plan amendment, Take Charge Plus (which is a different program than WA HCA's family planning waiver program). Services are available to uninsured Louisiana residents not eligible for Medicaid, Louisiana's CHIP program, or Medicare and who do not have private insurance. The guidelines for Take Charge Plus include women or men of any age with income at or below 138% of the federal poverty level. In 2019, Medicaid services in Louisiana (excluding Medicaid-Medicare dual-eligibles) were provided primarily by five managed care plans, which are administered by the state's Healthy Louisiana program. Approximately 15% of the Medicaid population that is not dual-eligible was continuously enrolled in traditional fee-for-service Medicaid. Since 2017, LA Medicaid has calculated and publicly reported NQF #2902 by health plan via its Medicaid Quality Dashboard (https://qualitydashboard.ldh.la.gov). In 2019, 25,578 postpartum women ages 15-44 were included in the NQF #2902 denominator.
Core Quality Measure Collaborative (CQMC) – Planned Use
The CQMC (http://www.qualityforum.org/cqmc) is a diverse coalition of health care leaders representing over 75 consumer groups, medical associations, health insurance providers, purchasers, and other quality

stakeholders, all working together to develop and recommend core sets of measures by clinical area to assess and improve the quality of health care nationwide. Convened in 2015 by America's Health Insurance Providers (AHIP) and CMS, CQMC is housed at NQF. In the second half of 2020, CQMC released updated core measure sets for specific clinical areas after a careful consensus-based review and deliberation among the collaborative's member organizations against CQMC's rigorous inclusion criteria. CQMC intends for its core sets of measures to be used in value-based payment programs, reported at the clinician level in outpatient settings, and could support multiple care delivery models. However, some measures selected for CMQC core sets focus on the inpatient setting and are endorsed by NQF at the levels of facility and health plan. Along with NQF #2904, the current CQMC Obstetrics and Gynecology core measure set added NQF #2902 for its members to use in quality assessment.

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.

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.*)

Not applicable.

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.

Following NQF's 2016 endorsement of #2902, OPA co-authored multiple articles in peer-reviewed journals to inform professionals delivering care in public and private settings (e.g., commercial health plans, Medicaid, community health centers, free-standing reproductive health clinics) about the new measure. These publications outline our conceptual framework for developing #2902 alongside its two complementary measures (NQF #2903 and #2904) and emphasize appropriate measure implementation and use. Furthermore, OPA highlighted systematic reviews which indicate that effective contraceptive method use increases the interbirth interval and reduces adolescent and unintended pregnancies. This association between use of most and moderately effective contraception, including LARC, and positive reproductive health outcomes demonstrates the importance of contraceptive care measures to health care quality (https://doi.org/10.1016/j.contraception.2017.05.013, https://doi.org/10.1016/j.contraception.2017.06.001, https://doi.org/10.1097/AOG.0000000000002314).

To promote and support use of NQF #2902, HHS Office of Population Affairs (OPA) publishes detailed information on measure specifications and calculation on its public website (https://opa.hhs.gov/evaluation-research/title-x-services-research/contraceptive-care-measures). NQF #2902 has two web pages with details on the limitations of claims data, appropriate utilization and interpretation, measure specifications, and links to programming code and code sets needed to calculate the measure (https://opa.hhs.gov/evaluation-research/title-x-services-research/contraceptive-care-measures/postpartum-most-or and https://opa.hhs.gov/evaluation-research/title-x-services-research/contraceptive-care-measures/postpartum-long-acting). The latest specification available is for measurement year 2019. OPA updates its measure pages after annually updating the measure specification, code sets, and syntax.

Users can submit questions to OPA about NQF #2902 and the contraceptive care measures via two email addresses posted on the OPA website. One address goes to a general mailbox; the other is for a single point of contact for the measures at OPA. With assistance from its statistical support contractor, Far Harbor, OPA responds to technical assistance requests sent to both email addresses. Users submit inquiries related to all aspects of measure calculation, including preparing an analysis claims dataset, troubleshooting programming code, code sets used to define the measure numerator and denominator, and interpretation of scores. Some questions ask OPA for guidance on how to calculate the measure by client characteristics (e.g., benefit type, health condition) or setting (e.g., health plan, facility). HHS Centers for Medicaid & Medicare Services (CMS) Health Care Quality Measures Program and the National Committee for Quality Assurance (NCQA) also forward inquiries they receive on NQF #2902 to OPA to respond directly to users needing help with measure calculation and interpretation. Most requests came from state Medicaid programs reporting measure scores for CMS Adult and Child Core Sets of Health Care Quality Measures.

Starting in 2016, OPA has provided technical assistance to state Medicaid programs calculating NQF #2902. First implemented among 13 Maternal and Infant Health Initiative (MIHI) grantees during 2015 – 2018 for development and testing, the CMS Adult and Child Core Sets of Health Care Quality Measures incorporated the measure in 2017. Thus, states in addition to MIHI grantees could calculate their respective NQF #2902 scores by year to report CMS. Measure specifications, code sets, interpretation guidance, and other reporting resources are published annually for measured entities at CMS's Adult and Child Core Set website (https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/index.html). CMS's technical assistance contractor, Mathematica Policy Research, collects feedback and questions from users on code sets, specifications, and interpretation of scores for NQF #2902 and the Health Care Quality Measures through its coordination of yearly Core Set measures' updates. Mathematica manages the requests from states computing and reviewing the measure and provides requestors the responses from OPA. During the FFY 2018 and 2019 annual updates, OPA responded to ten technical assistance requests submitted to Mathematica by state Medicaid programs and managed care organizations.

Most MIHI grantees also participated in the Association of State and Territorial Health Officials (ASTHO) Increasing Access to Contraception Learning Community from 2015-2018, which also utilized NQF #2902 for outcome evaluation. Along with CDC and CMS, OPA supported ASTHO in dissemination of strategies and best practices to implement policies and programs to increase access to the full range of contraceptive options. OPA also presented information to the group about NQF #2902's calculation, importance, and appropriate use and implementation.

To connect with other measure users, OPA participated in the National Contraceptive Measures Workgroup, led by Planned Parenthood Federation of America (PPFA). The workgroup focused on ensuring appropriate use of contraceptive care measures, including NQF #2902, and discussed efforts by health systems to implement the measures. An Implementation Subgroup supported the translation of the measures to the front lines of service delivery to minimize misunderstanding about the contraceptive care measures' purpose and intended use in the field and was coordinated by the National Family Planning & Reproductive Health Association (NFPHRA). They have developed a brief with key messages for health facility staff who want to use NQF #2902 and OPA's contraceptive care measures (https://www.nationalfamilyplanning.org/file/Onepager_Contraceptive-Measures_-Messages-for-Health-Care-Settings.pdf).

To support the implementation of the contraceptive provision measures, PPFA created a Data Stratification Guide that helps entities look at the contraceptive provision measures by different stratifications (e.g., delivery

site location, payer type, patient demographics, visit type, method type) to identify subgroups where there may still be access barriers to contraception and allow entities to better understand trends and variations.

OPA worked closely with and shared feedback with its partners who contributed data for NQF #2902 reliability and validity testing (e.g., state Medicaid programs for Iowa, Louisiana, Massachusetts, Washington). To ensure correct calculation of measure numerators and denominators for analyses, OPA and its statistical support contractor Far Harbor provided the partners with a summary data request and technical assistance via email and online meeting. Partners received programming syntax to calculate measure scores and aggregate data for analysis as needed. OPA and Far Harbor reviewed the datasets and aggregate tables and met with the data partners to confirm that the results contained the correct measure numerators and denominators by age group. Once prepared, data was analyzed and summarized to submit for NQF maintenance endorsement. Descriptive statistics were computed for each dataset and included in this application. Each partner will receive a detailed summary report with an overview of methods and full reliability and/or validity results at the levels of analysis available.

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.

To assist states in calculating NQF #2902 for public reporting, CMS relies on OPA to provide annually the latest measure code sets, specifications, and programming syntax for measure calculation. CMS also offers several resources to assist state Medicaid programs in computing the measure. As CMS technical assistance contractor, Mathematica Policy Research conducts quality assurance on the measure data submitted and works with states to resolve any issues with the data reported. The code sets and specifications are published by CMS in its Technical Specifications and Resource Manual for the Child and Adult Core Sets (https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf, https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-adult-core-set-manual.pdf). The latest manual provides reporting resources for measurement year 2019, which also includes an interpretation guide for NQF #2902 to help states understand their measure scores. This interpretation guide was developed by OPA and is posted on OPA's website as well (https://opa.hhs.gov/sites/default/files/2020-07/interpreting-rates-for-contraceptive-care-measures.pdf). CMS and Mathematica also conduct regular technical assistance webinars (about two per year) for Core Set users to hear how states are using the contraceptive provision measures and answer any questions states have about calculating and reporting on the measures.

CMS' Center for Medicaid and CHIP Services (CMCS) annually releases Adult and Child Core Set data for measures that were reported by at least 25 states and met its internal standards for data quality. For Federal Fiscal Year (FFY) 2018, NQF #2902, NQF #2903, and NQF #2904 met CMCS's threshold for public reporting of state-specific results, and thus CMS publicly reported these rates for the first time. In FFY 2019, the number of states reporting NQF #2902 in ages 15-20 increased from 31 to 32; Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New York, North Carolina, North Dakota, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, Washington, West Virginia, Wyoming all reported their scores at the state level. The same states except Alaska and Indiana reported the measure scores for ages 21-44.

NQF #2902 state-specific rates for both age groups are available online in the State Medicaid & CHIP Profiles (https://www.medicaid.gov/state-overviews/index.html). For an overview of Child and Adult Core Set Reporting for FFY 2019, CMCS also published a Fact Sheet online (https://www.medicaid.gov/medicaid/quality-of-care/downloads/ffy-2019-core-set-reporting.pdf).

In addition to convening the National Contraceptive Measures Workgroup to support appropriate contraceptive care measure use, Planned Parenthood Federation of America (PPFA) released a policy paper with Manatt Health in October 2019 that helps state policymakers and payers implement contraceptive care quality measures to improve access to all forms of contraception. The paper, "Measuring Quality Contraceptive Care in a Value-Based System," serves as a tool for policymakers, detailing how to incorporate contraceptive care quality measures (NQF #2902, NQF #2903, and NQF #2904) in Value Based Payment (VBP) initiatives to both ensure agency in women's contraceptive choices and develop strategies to improve people's access to contraception (https://www.plannedparenthood.org/uploads/filer_public/7e/90/7e90b4cb-4b3d-499f-8c6c-f31ab865b621/ppfa-manatt_measuring_quality_contraceptive_care.pdf).

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.

Since 2015, OPA has been the recipient of on-going feedback on NQF #2902 through CMS. CMS has a contract with Mathematica Policy Research to provide technical assistance (TA) on states reporting NQF #2902, NQF #2903, and NQF #2904 for the CMS Adult and Child Core sets. Mathematica manages a TA email inbox that states use to provide feedback on the measures and receive technical assistance. Mathematica forwards messages on NQF #2902 from the TA box to OPA as needed, who then drafts responses to requestors.

OPA has also received feedback on NQF #2902, NQF #2903, and NQF #2904 via the e-mail addresses posted on its public-facing website. Multiple organizations (e.g., state Medicaid programs, public hospital systems, universities, and public health agencies) which are implementing and computing the measures send or forward their questions this way; OPA replies via email.

OPA convenes an expert panel to discuss the appropriate use and interpretation of this measure in different health systems (e.g., programs with a reproductive health services focus compared to general health care providers). On September 9 and 11, 2020, OPA held an online Expert User Group Meeting on the Contraceptive Care Performance Measures, which included current and future measure users. One purpose of this conference was to gather feedback on the contraceptive care measures. During 15-minute discussion sessions at the conference, we asked expert users to describe their current or planned use of the contraceptive care measures, how the measures have helped improve the quality of care to date, and how the measures can be improved. In addition, two states that received CMS' MIHI funding presented to the panel a summary of their experiences implementing NQF #2902 and the contraceptive care measures. A meeting facilitator recorded input from attendees in a summary document.

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

Measure users, including states reporting NQF #2902 scores to CMS and reproductive health organizations utilizing this measure for quality improvement, shared the following input this year:

- Utilizing ICD-10-CM diagnosis codes with procedure codes in the Live Birth code set might not accurately identify the delivery date, which serves as the anchor date for NQF #2902. After reviewing its administrative claims, one state found that its measure scores for NQF #2902 decreased when employing ICD-10-CM diagnosis codes to categorize live birth deliveries.
- Using the Generic Product Identifier (GPI) code system to identify contraceptive medications for the numerator has advantages over FDA's National Drug Code (NDC) system. New NDCs are created frequently for new products and identify over one thousand oral pills available for contraceptive use. The repositories containing NDCs for prescription contraceptive medications are difficult to utilize and

search for valid codes. GPI uses fewer codes to identify oral contraceptive pills and may simplify the measure code sets and numerator calculation.

- Consider state-specific policies for coding administrative claims for prescription contraceptive medications in measure specifications. One state described its coding guidelines for requiring modifiers indicating family planning use to flag CPT codes 11981, 11982, 11983 as related to contraceptive implants (which is a method counted in the NQF #2902) and the HCPCS code S4993 to only denote emergency contraception (which is excluded from the NQF #2902 numerator).
- As described in 3c.1, multiple states stated that the calculation of NQF #2902 was complex and time-consuming, even with OPA's published SAS programming code. While the syntax has been simplified since NQF #2902's original endorsement, other barriers related to measure calculation may exist for states. One state reported that the available syntax did not mesh well with its existing data systems, requiring their analysts to develop syntax from scratch.
- Planned Parenthood Federation of America (PPFA) and the National Family Planning & Reproductive Health Association (NFPRHA) suggested that the contraceptive care measures, including NQF #2902, should be calculated by geography, health plan (e.g., Medicaid managed care organization), and other patient attributes (e.g., race, ethnicity, benefit type, etc.) to examine disparities in access and to establish stratified baseline measure scores for future quality improvement initiatives. Another recommendation is for health systems to report overall and stratified NQF #2902 scores publicly for analysis and discussion.
- OPA continues to receive feedback on appropriate interpretation of the measure, as health systems naturally want to increase their measure scores on a performance measure. It is hypothesized that some providers may therefore use a non-client-centered manner during contraceptive care. We have not yet set a specific benchmark for the NQF #2902 primary measure, and the lack of a benchmark should lessen pressure on providers to improperly push all women to use a most or moderately effective method. The intent of the NQF #2902 sub-measure is to ensure access to LARC methods in the postpartum period by monitoring very low rates of provision (e.g., below 2%, or well below the median of all reporting units). OPA explicitly states on our website that this measure of postpartum LARC should not have a benchmark encouraging high rates of use, and that utilization in pay-for-performance or similar programs is inappropriate. If the sub-measure is used as designed (i.e., to assess lack of access), this should remove pressure on providers to inappropriately "promote" LARC methods.

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

A measure user pointed out that the current edition of the clinical reference Contraceptive Technology classified diaphragm as less effective method of contraception because of increased estimated typical use failure rates. This user asked if the NQF #2902 primary measure numerator had been updated to consider these new failure rates.

Another user suggested that codes related to bilateral salpingectomy should be added to indicate use of female sterilization as contraception because the procedure is an increasingly common surgical method for sterilization. These CPT and ICD-10-PCS codes include:

- 0U570ZZ Destruction of Bilateral Fallopian Tubes, Open Approach
- 0U573ZZ Destruction of Bilateral Fallopian Tubes, Percutaneous Approach
- 0U577ZZ Destruction of Bilateral Fallopian Tubes, Via Natural or Artificial Opening

- 0UL70CZ Occlusion of Bilateral Fallopian Tubes with Extraluminal Device, Open Approach
- 0UL70DZ Occlusion of Bilateral Fallopian Tubes with Intraluminal Device, Open Approach
- 0UL70ZZ Occlusion of Bilateral Fallopian Tubes, Open Approach
- 0UL73CZ Occlusion of Bilateral Fallopian Tubes with Extraluminal Device, Percutaneous Approach
- 0UL73DZ Occlusion of Bilateral Fallopian Tubes with Intraluminal Device, Percutaneous Approach
- 0UL73ZZ Occlusion of Bilateral Fallopian Tubes, Percutaneous Approach
- 0UL77DZ Occlusion of Bilateral Fallopian Tubes with Intraluminal Device, Via Natural or Artificial Opening
- 0UL77ZZ Occlusion of Bilateral Fallopian Tubes, Via Natural or Artificial Opening
- 0UT70ZZ Resection of Bilateral Fallopian Tubes, Open Approach
- 0UT74ZZ Resection of Bilateral Fallopian Tubes, Percutaneous Endoscopic Approach
- 0UT77ZZ Resection of Bilateral Fallopian Tubes, Via Natural or Artificial Opening
- 0UT78ZZ Resection of Bilateral Fallopian Tubes, Via Natural or Artificial Opening Endoscopic
- 0UT7FZZ Resection of Bilateral Fallopian Tubes, Via Natural or Artificial Opening With Percutaneous Endoscopic Assistance

This user also asked if NQF #2902 utilizes any CPT or ICD-10-PCS codes to indicate sterilization for contraception in the postpartum period.

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.

To align the measure numerator with the latest edition of Contraceptive Technology, CDC, and WHO publications on contraceptive effectiveness, we changed the measure specifications to exclude diaphragm from the NQF #2902 numerator. Sixty-three codes were removed from the code sets as a result.

We will continue using 17 ICD-10-CM diagnosis codes in CCP-A Codes to Identify a Live Birth or Delivery. This decision was made after reviewing two state's Medicaid claims (one of these states also used birth certificate data with the claims) where about 10% of live births deliveries were missed by not including ICD-10-CM diagnosis codes for live births.

The Generic Product Identifier (GPI) code system requires a license fee to utilize, which may not be possible for all states calculating NQF #2902 and the contraceptive care measures. OPA will continue to only employ the NDC code system to identify medications for the measure numerator for now, even though it has frequent updates and is time-consuming to search.

Regarding the use of S4993 only for emergency contraception, OPA will investigate the various state-specific policies and examine data for this procedure code in administrative claims. While one state uses it only for emergency contraception, another state requires a specific modifier for it to be used for the same reimbursement. This code will remain in the NQF #2902 sets for the primary measure's numerator compilation for the next measurement year.

After confirming the existence of these codes in CPT and ICD-10-PCS (https://www.cms.gov/Medicare/Coding/ICD10/index), we added the following 5 procedure codes in Table CCP-B:

- 59151 Laparoscopic treatment of ectopic pregnancy; with salpingectomy and/or oophorectomy

- 10D20ZZ Extraction of Products of Conception, Ectopic, Open Approach
- 10D24ZZ Extraction of Products of Conception, Ectopic, Percutaneous Endoscopic Approach
- 10D27ZZ Extraction of Products of Conception, Ectopic, Via Natural or Artificial Opening
- 10D28ZZ Extraction of Products of Conception, Ectopic, Via Natural or Artificial Opening Endoscopic

We added 17 procedure codes to CCP-C Codes Used to Identify Provision of a Most or Moderately Effective Contraceptive Method for measurement year 2020 to indicate female sterilization, including 16 codes for bilateral salpingectomy. These codes are:

- 0567T Blockage of fallopian tubes with implants inserted through cervix
- 0U570ZZ Destruction of Bilateral Fallopian Tubes, Open Approach
- 0U573ZZ Destruction of Bilateral Fallopian Tubes, Percutaneous Approach
- 0U577ZZ Destruction of Bilateral Fallopian Tubes, Via Natural or Artificial Opening
- 0UL70CZ Occlusion of Bilateral Fallopian Tubes with Extraluminal Device, Open Approach
- 0UL70DZ Occlusion of Bilateral Fallopian Tubes with Intraluminal Device, Open Approach
- 0UL70ZZ Occlusion of Bilateral Fallopian Tubes, Open Approach
- 0UL73CZ Occlusion of Bilateral Fallopian Tubes with Extraluminal Device, Percutaneous Approach
- 0UL73DZ Occlusion of Bilateral Fallopian Tubes with Intraluminal Device, Percutaneous Approach
- 0UL73ZZ Occlusion of Bilateral Fallopian Tubes, Percutaneous Approach
- 0UL77DZ Occlusion of Bilateral Fallopian Tubes with Intraluminal Device, Via Natural or Artificial Opening
- 0UL77ZZ Occlusion of Bilateral Fallopian Tubes, Via Natural or Artificial Opening
- 0UT70ZZ Resection of Bilateral Fallopian Tubes, Open Approach
- 0UT74ZZ Resection of Bilateral Fallopian Tubes, Percutaneous Endoscopic Approach
- 0UT77ZZ Resection of Bilateral Fallopian Tubes, Via Natural or Artificial Opening
- 0UT78ZZ Resection of Bilateral Fallopian Tubes, Via Natural or Artificial Opening Endoscopic
- 0UT7FZZ Resection of Bilateral Fallopian Tubes, Via Natural or Artificial Opening with Percutaneous Endoscopic Assistance

Regarding the inquiry asking if specific procedure codes denoted sterilization for contraception in the postpartum period, we clarified that the measure specifications do not use procedure codes alone to define postpartum contraception. Instead, postpartum contraception is calculated by determining use of most and moderately effective contraceptive methods among women who had a live birth during the first 10 months of the measurement year, up to 60 days after delivery.

For this application, OPA calculated NQF #2902 at several levels of analysis: clinician group/practice, health plan, public health region, and state to test the measures' reliability and validity. In this form's 1b.4, measure scores were examined by race/ethnicity over time using Washington State Health Care Authority's measure scores to examine differences in access. OPA agrees with the importance of stratifying NQF #2902 scores by client characteristics to monitor quality improvement initiatives and better understand contraceptive provision among women wishing to use most or moderately effective methods.

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.

In sum, the performance results shown in section 1b suggest that there remains substantial room for improvement in all the postpartum contraceptive measures (i.e., provision of most and moderately effective methods, LARC provision, within 3 days and 60 days of delivery). Trends from a limited number of states suggest that rates have been largely stable for the 60-day measures, while the rates of 3-day (i.e., immediate or inpatient) postpartum LARC have remained near zero in several states. Contextual influences have likely affected the limited amount of progress over time, and yet isolated cases (e.g., in South Carolina) have demonstrated that when commitment to removing barriers exists, access to immediate postpartum LARC can be substantially improved. For these reasons, we believe that the measures should be re-endorsed. The paragraphs below provide more detail about these points.

In the state Medicaid programs reporting the percentage of women that had been provided a most or moderately effective method of contraception in two postpartum time periods (IA, MA, LA), measure scores for the 60-day period increased from the scores for the 3-day period. Performance varied by region and health plan (more details are provided in the Testing Attachment). The 60-day most and moderately effective provision rates are below 50% for all programs included (LA = 51.03, MA = 47.73, WA = 40.58, IA = 33.32, TX = 32.40), which indicate room for improvement. OPA has not set a specific benchmark for this measure, as some women will make informed decisions to choose methods in the lower tier of efficacy even when offered the full range of methods and all logistical or financial barriers to access are removed. However, use of a most or moderately effective method of contraception may help women space pregnancies as desired or avoid an unwanted pregnancy shortly after giving birth. Therefore, it is important that all women have an opportunity to receive the full range of contraceptive methods within 60 days after delivery.

There were measure scores of 0% for 3-day postpartum most and moderately effective contraceptive provision in Massachusetts and Iowa. This may signify a lack of access to postpartum contraception and therefore be cause for concern if a woman is unable to return for her postpartum visit to obtain postpartum contraception. One study examining the Pregnancy Risk Assessment Monitoring System (PRAMS) data from three sites (New York City plus the states of Missouri and New York) indicated that women who receive prenatal and postpartum contraceptive counseling are more likely to use a more effective contraceptive method [10], while another analysis among 37 PRAMS sites reported that attending a postpartum check-up may be associated with LARC utilization [11]. With the median postpartum visit rate only around 60%, the immediate postpartum period is an ideal time to provide contraception to women who would like it but may not return for a postpartum visit.

Overall, the percentage of women provided a LARC method within 3 days of delivery was lower relative to the percentage of women provided a LARC method within 60 days postpartum in the three state Medicaid programs measured at both time periods (more details are provided in the Testing Attachment). The primary intent of the LARC measure is to identify populations in which LARC provision is noticeably low so that health

programs can determine if there are barriers to access (e.g., less than 2%). OPA maintains that the LARC measure should be used only to monitor access; and further, that it could be harmful to set a high benchmark for this measure, because doing so may incentivize coercive practices [8, 9]. The measure scores for immediate postpartum LARC provision in Louisiana are greater than 2%, but the 3-day LARC rates found in Massachusetts and Iowa, as well as many of the states reporting in the CMS Adult and Child Core Set might suggest that women who might want this method may find obstacles to utilizing it. Although Iowa Medicaid began reimbursing for this contraceptive service in 2014, this result is not surprising given that Iowa's family planning demonstration waiver program ended in June 2017, prior to the analysis period. However, if low rates persist despite the reimbursement policy, steps might need to be taken to remove additional barriers. The results for LARC at 60 days postpartum demonstrate that Iowa's performance improved notably; the fact that no public health regions have a rate of less than 2 percent suggests that some access to LARC occurs in the state and in each region.

Slight improvement in 3-day postpartum contraceptive care has occurred in the state Medicaid programs presented using the 2018 and 2019 CMS data, but some states still reported 0.1% immediate postpartum LARC provision in 2019. We hypothesize that this 3-day postpartum rate is very low because immediate postpartum LARC provision is a relatively new clinical practice. While supported by guidelines published by American College of Obstetricians and Gynecologists (ACOG) [18], these recommendations were released after NQF first recommended endorsement for #2902. Thus, this sub-measure attempts to estimate access to a service which is in various stages of implementation across entities. The lower numbers of women obtaining immediate postpartum LARC provision within and across health care delivery systems have been explained by research that has highlighted the unique challenges of providing this care in the hospital setting [13-17]. These challenges currently persist even with recently adopted state Medicaid reimbursement policies. Barriers include provider attitudes and their lack of clinical training, the devices not being available onsite at the time of delivery, reimbursement challenges, concern about the cost of implementation activities, and uncertainty about how to deliver client-centered care in this setting [13-17].

There were, however, some clinician group/practices with 100% LARC provision in both the 3-day and 60-day postpartum periods. While these entities likely serve small numbers of patients, it is vital to ensure that women are receiving patient-centered contraceptive counseling and are not being coerced into receiving LARC methods. A variety of contraceptive preferences is expected, and it is important that women can access the full range of contraceptive methods available to them following delivery.

Although this application did not test NQF #2902 using their program's data, the experience in South Carolina demonstrates that barriers to provision of immediate postpartum contraception can be overcome if there is adequate commitment. In South Carolina, the state and a private collaborative have worked to expand access to postpartum contraceptive care. The state's Medicaid office took several administrative policy steps to enhance access, which included approving reimbursement for inpatient provision of LARC and other methods within 3 days of delivery in 2012. In subsequent years, South Carolina Medicaid also addressed several internal administrative challenges to ensure implementation of the policy.

These efforts appear to have paid off in South Carolina. A recent analysis by Liberty and colleagues examined the impact of the state's Medicaid policy change on LARC initiation in both postpartum time periods. The study was a historical cohort study of 187,438 births to 145,973 Medicaid recipients in South Carolina between 2010 (two years before the policy change) and 2017 (five years afterwards). Using birth certificate data linked with Medicaid claims, the primary outcome was provision of immediate postpartum LARC, and the secondary outcome was short interpregnancy interval. The odds of receipt of immediate postpartum LARC increased after the policy change (adjusted odds ratio, 1.39, 95% confidence interval, 1.34-1.43). Utilization of immediate

postpartum LARC was associated with decreased odds of a subsequent short interpregnancy interval (adjusted odds ratio, 0.62, 95% confidence interval, 0.44-0.89) [12].

Measure users have raised questions about how to interpret rates of NQF #2902 given the protective effects of breastfeeding. Although the Lactational Amenorrhea Method (LAM) is a highly effective, temporary method of contraception that can be used after delivery, a premise underpinning these measures is that providers can encourage the provision of contraception in the postpartum period while simultaneously encouraging breastfeeding. CDC and ACOG recommendations state that a wide range of contraceptive methods can be used safely by women who are breastfeeding, including: progestin-only pill, shot or implant; IUDs; and sterilization [2,3]. LAM is more than 98% effective at preventing pregnancy under perfect use [5,6], but it can be challenging to implement because it requires that all the following three conditions must be met: (a) the mother´s monthly bleeding has not returned; (b) the baby is exclusively breastfed and is fed often, day and night; and (c) the baby is less than 6 months old [7]. In the United States, rates of exclusive breastfeeding (not necessarily LAM) drop quickly in the postpartum period. For example, national surveillance data from CDC show that although 84% of U.S. children were ever breastfed, only 47% were exclusively breastfed at 3 months postpartum, and 26% were exclusively breastfed at six months [4].

Since many women may not return for contraceptive services after the 6-week postpartum visit, providers will help women who use LAM to transition to another method of contraception without any interruption in pregnancy prevention by offering contraception in the immediate postpartum period or at the 6-week postpartum visit.

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4b2. Unintended Consequences

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

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

No unintended negative consequences were identified. The one issue that remains a potential concern is that the measure may lead to coercive practices in which women are not offered a free choice of methods and are pressured to use most or moderately effective contraception [1-3]. OPA reaffirms our commitment to client-centered care through the following actions taken during development and testing of NQF #2902.

OPA has deliberately not set a benchmark for the primary measure, although existing research [4-5] show a high percentage of women will choose LARC when given the opportunity. Our website provides specific guidance on how the contraceptive care measures should be used. This should remove pressure on providers to improperly push all women to use a most or moderately effective method. The primary measure is designed so that all methods of contraception that require a prescription and sterilization are included in the numerator, which are treated as being of equal value during measure calculation. Hence, the numerator represents a wide range of methods from which clients can choose. We hope this encourages providers to deliver family planning care in a fully client-centered, non-coercive manner.

The goal of the NQF #2902 sub-measure is to ensure access to LARC methods in the postpartum period by monitoring very low rates of provision (e.g., below 2%). OPA explicitly states on our website that this measure should not have a benchmark encouraging high rates of use, and that utilization in pay-for-performance or similar programs is inappropriate. If the sub-measure is used as intended (i.e., to assess lack of access), this should remove pressure on providers to inappropriately "promote" LARC methods.

In partnership with CDC, OPA also co-authored detailed recommendations on providing client-centered contraceptive counseling [6]. To deliver provider education on this topic, we sponsored multiple online training modules. OPA published its first online client-centered contraceptive counseling training module, "Quality Contraceptive Counseling and Education: A Client-Centered Conversation eLearning and Explaining Contraception for Healthcare Providers eLearning" in 2017. This OPA-sponsored training was updated to a new module in September 2020, "Contraceptive Counseling and Education eLearning", which is available to all providers at the OPA's Reproductive Health National Training Center website [7].

The OPA team and our partners involved in measure development anticipated that utilization of the contraceptive care measures could unintentionally result in incentivizing providers to impel patients to use more effective methods. During the NQF endorsement process for the contraceptive care measures, stakeholders echoed this concern during the public comment period and suggested an accompanying measure of patient experience with contraceptive care. The National Partnership for Women & Families described this balancing measure further by stating, "Such a measure can be expected to help identify and/or check inappropriate pressure from the health care system." After NQF endorsed the contraceptive provision measures, OPA demonstrated its commitment to patient-centered contraceptive care by providing funding to the University of California San Francisco (UCSF) to develop a patient-reported outcome performance measure (PRO-PM) assessing the degree to which patient needs, values, and preferences are prioritized in the counseling encounter. After the initial year of funding, UCSF secured private funding to continue the project. Recently endorsed by NQF in November 2020 as the Person-Centered Contraceptive Counseling (PCCC) measure (NQF #3543), it facilitates proper use of the provision measures by allowing organizations to observe variations in patient experience that occur with changes in provision of most or moderately effective contraception, including LARC methods. Health care providers can then ensure that increases in provision are not associated with worse patient experience; ideally, improved provision would be linked to better patient experience. Due to the distinct structure of client-centered contraceptive counseling in pregnant individuals (i.e., counseling occurs over multiple visits prior to delivery), the PCCC is a visit-specific measure that focuses on non-pregnant clients. It has not been comprehensively tested in pregnant patients. Currently conducting

research to operationalize the 'tandem use' of the new PCCC measure with NQF #2903 and #2904, UCSF plans to investigate the possibility of utilizing a contraceptive care PRO-PM with NQF #2902.

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

5. Comparison to Related or Competing Measures

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

5. Relation to Other NQF-endorsed Measures

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

Yes

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

1517 : Prenatal & Postpartum Care (PPC)

2903 : Contraceptive Care – Most & Moderately Effective Methods

2904 : Contraceptive Care - Access to LARC

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?

Yes

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.)

OPA is submitting two other measure applications for NQF maintenance endorsement, which are complementary to this application. The target population for NQF #2902 is a sub-population of these two measures. One of the applications is for NQF #2903 and focuses on use of most and moderately effective contraceptive methods in women of reproductive age that may be at risk of unintended pregnancy. The other application is for NQF #2904 and focuses on use of a sub-set of contraceptive methods, i.e., use of long-acting reversible contraception (LARC) in women ages 15-44; the goal of this measure to monitor whether women have access to LARC methods as determined by whether any units report very low levels of LARC use (e.g., less than 1-2 percent) or at a level that is substantially below the mean when compared to other reporting units. The proposed measure considers contraceptive care for the same population addressed in the NCQA measure on prenatal and postpartum care (PPC) (NQF #1517), although the measures address different types of services. We have aligned the contraceptive measure with the PCC measure to the extent possible, with regard to identifying the population of women with live births.

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:** Appendices_for_2902_2021-04-27-final.docx

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): HHS Office of Population Affairs

Co.2 Point of Contact: Jamie, Kim, Jamie.Kim@hhs.gov, 240-453-2817-

Co.3 Measure Developer if different from Measure Steward: HHS Office of Population Affairs

Co.4 Point of Contact: Jamie, Kim, Jamie.Kim@hhs.gov, 240-453-2817-

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.

OPA convenes an expert work group (EWG) for the three contraceptive care measures: NQF #2902, NQF #2903, NQF #2904. The EWG represents several organizations and helps to develop the measure. EWG members' roles included calculating measure numerators and denominators, describing their organizations' activities supporting access to client-centered contraceptive care, and providing input on the measure implementation, interpretation, specifications, and code sets. EWG members over the past 3 years have included the following organizations and their staff:

HHS Office of Population Affairs: Amy F. Farb PhD, Diane Foley MD FAAP

HHS Centers for Disease Control and Prevention (CDC) Division of Reproductive Health: Jiajia Chen PhD, Shanna Cox MSPH, Ekwutosi Okoroh, MD MPH, Antoinette Nguyen MD MPH FACOG, Lisa Romero PhD

HHS CDC National Center for Health Statistics: Gladys Martinez PhD, Kimberly Daniels PhD

HHS Health Resources and Services Administration: Rui Li PhD

Iowa Department of Public Health and Iowa Medicaid Enterprise: Debra Kane PhD, Lindsey Jones MHA, Mark McMahon, Robert Schlueter, Kelly Garcia MPA, Gerd Clabaugh (retired)

Planned Parenthood Federation of America: Monika Grzeniewski MPH, Mark Bronstein

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National Contraceptive Quality Measures Workgroup

OPA's statistical support contractor, Far Harbor LLC, completed reliability, data element and score level validity analyses for the application. Far Harbor's team includes Philip A. Hastings PhD, Fei Dong PhD, Antonio F. Garcia PhD, Ella d. Puga MPH, and Denise Wheeler MS.

Along with UCSF representatives, the following original measure developers also reviewed and offered suggestions on the NQF application: Brittni N. Frederiksen PhD MPH, Emily J. Decker MPH, Lorretta E. Gavin PhD MPH.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2016

Ad.3 Month and Year of most recent revision: 03, 2020

Ad.4 What is your frequency for review/update of this measure? Every 3 years for maintenance of endorsement

Ad.5 When is the next scheduled review/update for this measure? 04, 2021

Ad.6 Copyright statement: Not applicable.

Ad.7 Disclaimers: Not applicable.

Ad.8 Additional Information/Comments: Not applicable.