



Performance Measures For Mitral Valve Repair Reference Centers

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Designated Hospital Performance Measures

5.2 Non-risk-adjusted 30-day Operative Mortality Rate after Mitral Valve Repair (Center)

Percentage of Patients Who Die Within 30 Days or During Hospitalization Following Elective Mitral Valve Repair

Initial Patient Population

All patients 18 years and older with primary (degenerative) mitral valve disease with prolapse who have an elective, open mitral valve procedure (repair or replacement),* with or without concomitant operations, during the measurement period.

** This includes all open approaches, including full sternotomy, minimally invasive, robot-assisted and mini-thoracotomy.*

Denominator

Include:

All patients in the initial patient population

Exclusions: (Always remove from denominator)

- Patients undergoing urgent or emergent procedures
- Patients undergoing transcatheter mitral valve procedures
- Patients who have had any prior cardiac surgery
- Patients who have had a prior transcatheter mitral valve procedure
- Patients with severe mitral annulus calcification as documented in preoperative imaging or the operative report
- Patients with mitral valve leaflet calcification (any severity)
- Patients with endocarditis or trauma
- Patients with secondary / functional mitral regurgitation

**Performance Measures
For Mitral Valve Repair Reference Centers**

**5.2 Non-risk-adjusted 30-day Operative Mortality Rate after
Mitral Valve Repair (Center)**

**Percentage of Patients Who Die Within 30 Days or During Hospitalization Following
Elective Mitral Valve Repair**

Exceptions: (Remove from denominator if present and numerator is not met)

Note: Any potential medical, patient or system reason(s) listed below are provided as examples only and should not be considered all inclusive. Reasons should be clearly documented in the medical record and may be audited.

- Documented medical reason(s) that patient death was wholly unrelated to MV repair (Medical reasons are circumstances that could never be attributable to MV repair (e.g., accidental or intentional deaths due to e.g., trauma due to accident, natural disaster or suicide)
- Documented patient reason(s) that patient status at 30 days could not be confirmed (Patient reasons are circumstances specific to an individual patient e.g., international patients who cannot be contacted)

Numerator

Patients who die during the hospitalization (even if after 30 days) or within 30 days following MV repair

Measurement Period

3 calendar years

Method of Reporting

3 options for reporting all repairs plus all replacements:

- 1) All Index Mitral Valve Procedures performed during the 3 calendar year measurement period; **OR**
- 2) All Index Mitral Valve Procedures performed during the most recent 1 calendar year period, if at least 150 mitral valve repairs were performed during that year **OR**
- 3) The 150 most recent consecutive Index Mitral Valve Procedures that are repairs plus all Index Mitral Valve Procedures that are replacements performed during the same time period as the repairs, beginning with the end of the most recent calendar year and identifying Procedures retrospectively until the count is achieved.

Level of Reporting

Mitral Valve Repair Center at the Designated Hospital

Recognition Goal

Less than or equal to 1%

Clinical Guideline Recommendations or Other Evidence Supporting the Measure

Mitral Foundation's Standards and Best Practices



**Performance Measures
For Mitral Valve Repair Reference Centers**

5.3 Repair Rate for Index Mitral Valve Cases (Center)

Percentage of Index Mitral Valve Cases where a Mitral Valve repair was performed
Initial Patient Population
All patients 18 years and older with primary (degenerative) mitral valve disease with prolapse who have an elective, open mitral valve procedure (repair or replacement),* with or without concomitant operations, during the measurement period.
<i>* This includes all open approaches, including full sternotomy, minimally invasive, robot-assisted and mini-thoracotomy.</i>
Denominator
<i>Include:</i>
All patients in the initial patient population
<i>Exclusions: (Always remove from denominator)</i>
<ul style="list-style-type: none"> • Patients undergoing urgent or emergent procedures • Patients undergoing transcatheter mitral valve procedures • Patients who have had any prior cardiac surgery • Patients who have had a prior transcatheter mitral valve procedure • Patients with severe mitral annulus calcification as documented in preoperative imaging or the operative report • Patients with mitral valve leaflet calcification (any severity) • Patients with endocarditis or trauma • Patients with secondary / functional mitral regurgitation
<i>Exceptions: (Remove from denominator if present and numerator is not met)</i>
<i>Note: Any potential medical, patient or system reason(s) listed below are provided as examples only and should not be considered all inclusive. Reasons should be clearly documented in the medical record and may be audited.</i>
Documented medical reason(s) for performing MV replacement instead of repair: Medical reasons are conditions or circumstances specific to an individual patient that, in the judgment of the surgeon, favor replacement over repair.
Numerator
All patients who had a mitral valve repair
Measurement Period
3 calendar years

**Performance Measures
For Mitral Valve Repair Reference Centers**

5.3 Repair Rate for Index Mitral Valve Cases (Center)

Percentage of Index Mitral Valve Cases where a Mitral Valve repair was performed

Method of Reporting
3 options for reporting all repairs plus all replacements: 4) All Index Mitral Valve Procedures performed during the 3 calendar year measurement period; OR 5) All Index Mitral Valve Procedures performed during the most recent 1 calendar year period, if at least 150 mitral valve repairs were performed during that year OR 6) The 150 most recent consecutive Index Mitral Valve Procedures that are repairs plus all Index Mitral Valve Procedures that are replacements performed during the same time period as the repairs, beginning with the end of the most recent calendar year and identifying Procedures retrospectively until the count is achieved.
Level of Reporting
<u>Mitral Valve Repair Center at the Designated Hospital</u>
Recognition Goal
95% or greater
Clinical Guideline Recommendations or Other Evidence Supporting the Measure
Otto CM, Nishimura RA, Bonow RO, Carabello BA, Erwin JP 3rd, Gentile F, Jneid H, Krieger EV, Mack M, McLeod C, O’Gara PT, Rigolin VH, Sundt TM 3rd, Thompson A, Toly C. 2020 ACC/AHA guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. <i>Circulation</i> . 2021;143:e●●●●-e●●●. doi: 10.1161/CIR.0000000000000923

**Performance Measures
For Mitral Valve Repair Reference Centers**

6.5 Intraoperative Echocardiogram for Mitral Valve Repair (Center)

Percentage of Patients Undergoing Mitral Valve Repair who have Echocardiogram Performed After Weaning from Cardiopulmonary Bypass

Initial Patient Population

All patients 18 years and older with primary (degenerative) mitral valve disease with prolapse who have an elective, open mitral valve procedure (repair or replacement),* with or without concomitant operations, during the measurement period.

** This includes all open approaches, including full sternotomy, minimally invasive, robot-assisted and mini-thoracotomy.*

Denominator

Include:

All patients in the initial patient population

Exclusions: (Always remove from denominator)

- Patients undergoing urgent or emergent procedures
- Patients undergoing transcatheter mitral valve procedures
- Patients who have had any prior cardiac surgery
- Patients who have had a prior transcatheter mitral valve procedure
- Patients with severe mitral annulus calcification as documented in preoperative imaging or the operative report
- Patients with mitral valve leaflet calcification (any severity)
- Patients with endocarditis or trauma
- Patients with secondary / functional mitral regurgitation
- Patients with contraindications to transesophageal echocardiogram (e.g., esophageal pathology, recent GI surgery, etc.)

Exceptions: (Remove from denominator if present and numerator is not met)

None

Numerator

Patients who have an echocardiogram performed in the operating room following weaning from cardiopulmonary bypass

Measurement Period

1 calendar year

*Performance Measures
For Mitral Valve Repair Reference Centers*

6.5 Intraoperative Echocardiogram for Mitral Valve Repair (Center)

Percentage of Patients Undergoing Mitral Valve Repair who have Echocardiogram Performed After Weaning from Cardiopulmonary Bypass

Method of Reporting
2 options for reporting all repairs plus all replacements: 9 1) All Index Mitral Valve Procedures performed during the 1 calendar year measurement period; OR 2) The 150 most recent consecutive Index Mitral Valve Cases that are repairs performed during the measurement period, beginning with the end of the most recent calendar year and identifying cases retrospectively until the count is achieved
Level of Reporting
Mitral Valve Repair Center at the <u>Designated Hospital</u>
Recognition Goal
100%
Clinical Guideline Recommendations or Other Evidence Supporting the Measure
Mitral Foundation's <u>Standards and Best Practices</u>

*Performance Measures
For Mitral Valve Repair Reference Centers*

**6.6 Postoperative Echocardiogram within 90 Days of Mitral Valve Repair
(Center)**

**Percentage of Patients who have Undergone Mitral Valve Repair who have a
Postoperative Transthoracic Echocardiogram Performed
within 90 Days of Mitral Valve Repair**

Initial Patient Population

All patients 18 years and older with primary (degenerative) mitral valve disease with prolapse who have an elective, open mitral valve procedure (repair or replacement),* with or without concomitant operations, during the measurement period.

** This includes all open approaches, including full sternotomy, minimally invasive, robot-assisted and mini-thoracotomy.*

Denominator

Include:

All patients in the initial patient population

Exclusions: (Always remove from denominator)

- Patients undergoing urgent or emergent procedures
- Patients undergoing transcatheter mitral valve procedures
- Patients who have had any prior cardiac surgery
- Patients who have had a prior transcatheter mitral valve procedure
- Patients with severe mitral annulus calcification as documented in preoperative imaging or the operative report
- Patients with mitral valve leaflet calcification (any severity)
- Patients with endocarditis or trauma
- Patients with secondary / functional mitral regurgitation

**Performance Measures
For Mitral Valve Repair Reference Centers**

<i>Exceptions: (Remove from denominator if present and numerator is not met)</i>
<i>Note: Any potential medical, patient or system reason(s) listed below are provided as examples only and should not be considered all inclusive. Reasons should be clearly documented in the medical record and may be audited.</i>
<ul style="list-style-type: none"> • Documented patient reason(s) for not performing post-operative echocardiogram within 90 days (Patient reasons are circumstances specific to an individual patient e.g., patient refusal; unable to contact patient despite several attempts**, international patient for whom follow up cannot be confirmed**) • Documented system reason(s) for not performing post-operative echocardiogram within 90 days (e.g., patient’s insurance plan will not cover post-operative echocardiogram**) <p>**UPDATE: <i>As of January 1, 2022, all Reference Centers must have a protocol to obtain post-operative TTEs on at least 95% of Index Mitral Valve Repair procedures. Exceptions due to absence of standard protocol to obtain the post-op TTE will be discontinued. The above referenced example exceptions will be discontinued.**</i></p>
Numerator
Patients who have a post-operative transthoracic echocardiogram* performed within 90-days following MV repair
<i>* May include the pre-discharge echocardiogram performed while the patient is still in the hospital or post discharge echocardiogram in any other physician office or care facility within 90 days post-repair.</i>
Measurement Period
1 calendar year
Method of Reporting
2 options for reporting all repairs plus all replacements: 9 <ol style="list-style-type: none"> 1) All Index Mitral Valve Procedures performed during the 1 calendar year measurement period; OR 2) The 150 most recent consecutive Index Mitral Valve Cases that are repairs performed during the measurement period, beginning with the end of the most recent calendar year and identifying cases retrospectively until the count is achieved
Level of Reporting
<u>Mitral Valve Repair Center at the Designated Hospital</u>
Recognition Goal
95% or greater
Clinical Guideline Recommendations or Other Evidence Supporting the Measure
Mitral Foundation’s <u>Standards and Best Practices</u>

Reference Surgeon Performance Measures

4.1 Mitral Valve Repair Rate (Reference Surgeon)

Percentage of Patients Undergoing an Index Mitral Valve Procedure who have a Mitral Valve Repair
<p>Initial Patient Population</p> <p>All patients 18 years and older with primary (degenerative) mitral valve disease with prolapse who have an elective, open mitral valve procedure (repair or replacement),* with or without concomitant operations, during the measurement period.</p> <p><i>* This includes all open approaches, including full sternotomy, minimally invasive, robot-assisted and mini-thoracotomy.</i></p>
<p>Denominator</p> <p><i>Include:</i></p> <p>All patients in the initial patient population where the Reference Surgeon is the surgeon of record.</p> <p><i>Exclusions: (Always remove from denominator)</i></p> <ul style="list-style-type: none"> • Patients undergoing urgent or emergent procedures • Patients undergoing transcatheter mitral valve procedures • Patients who have had any prior cardiac surgery • Patients who have had a prior transcatheter mitral valve procedure • Patients with severe mitral annulus calcification as documented in preoperative imaging or the operative report • Patients with mitral valve leaflet calcification (any severity) • Patients with endocarditis or trauma • Patients with secondary / functional mitral regurgitation <p><i>Exceptions: (Remove from denominator if present and numerator is not met)</i></p> <p>Note: Any potential medical, patient or system reason(s) listed below are provided as examples only and should not be considered all inclusive. Reasons should be clearly documented in the medical record and may be audited.</p>
<p>Numerator</p> <p>Patients who have a mitral valve repair</p>
<p>Measurement Period</p> <p>2 calendar years</p>

*Performance Measures
For Mitral Valve Repair Reference Centers*

4.1 Mitral Valve Repair Rate (Reference Surgeon)

**Percentage of Patients Undergoing an Index Mitral Valve Procedure
who have a Mitral Valve Repair**

Method of Reporting

3 options for reporting all repairs plus all replacements:

- 3) All Index Mitral Valve Procedures performed during the 2 calendar year measurement period; **OR**
- 4) All Index Mitral Valve Procedures performed during the most recent 1 calendar year period, if at least 100 mitral valve repairs were performed during that year **OR**
- 5) The 100 most recent consecutive Index Mitral Valve Procedures that are repairs plus all Index Mitral Valve Procedures that are replacements performed during the same time period as the repairs, beginning with the end of the most recent calendar year and identifying Procedures retrospectively until the count is achieved.

Level of Reporting

Reference Surgeon

Recognition Goal

95% or greater

Clinical Guideline Recommendations or Other Evidence Supporting the Measure

Mitral Foundation's *Standards and Best Practices*

**Performance Measures
For Mitral Valve Repair Reference Centers**

4.2 Freedom from Mitral Regurgitation or Reintervention at 90-Days Post-Mitral Valve Repair (Reference Surgeon)

Percentage of Patients who have Undergone Mitral Valve Repair who are Free From Moderate or Greater Mitral Regurgitation and who have not Undergone Re-intervention at 90 Days Post-repair
Initial Patient Population
All patients 18 years and older with primary (degenerative) mitral valve disease with prolapse who have an elective, open mitral valve procedure (repair or replacement),* with or without concomitant operations, during the measurement period.
<i>* This includes all open approaches, including full sternotomy, minimally invasive, robot-assisted and mini-thoracotomy.</i>
Denominator
<i>Include:</i>
All patients in the initial patient population where the Reference Surgeon is the surgeon of record.
<i>Exclusions: (Always remove from denominator)</i>
<ul style="list-style-type: none"> • Patients undergoing urgent or emergent procedures • Patients undergoing transcatheter mitral valve procedures • Patients who have had any prior cardiac surgery • Patients who have had a prior transcatheter mitral valve procedure • Patients with severe mitral annulus calcification as documented in preoperative imaging or the operative report • Patients with mitral valve leaflet calcification (any severity) • Patients with endocarditis or trauma • Patients with secondary / functional mitral regurgitation
<i>Exceptions: (Remove from denominator if present and numerator is not met)</i>
Documented patient reason(s) that patient status at 90 days could not be confirmed (Patient reasons are circumstances specific to an individual patient e.g., international patients who cannot be contacted)
Numerator
Patients who are free from moderate or greater regurgitation and who have not undergone re-intervention at 90-days post-repair.
Measurement Period
2 calendar years

*Performance Measures
For Mitral Valve Repair Reference Centers*

**4.2 Freedom from Mitral Regurgitation or Reintervention at 90-Days
Post-Mitral Valve Repair (Reference Surgeon)**

**Percentage of Patients who have Undergone Mitral Valve Repair who are
Free From Moderate or Greater Mitral Regurgitation and who have not
Undergone Re-intervention at 90 Days Post-repair**

Method of Reporting
3 options for reporting all repairs plus all replacements: 6) All Index Mitral Valve Procedures performed during the 2 calendar year measurement period; OR 7) All Index Mitral Valve Procedures performed during the most recent 1 calendar year period, if at least 100 mitral valve repairs were performed during that year OR 8) The 100 most recent consecutive Index Mitral Valve Procedures that are repairs plus all Index Mitral Valve Procedures that are replacements performed during the same time period as the repairs, beginning with the end of the most recent calendar year and identifying Procedures retrospectively until the count is achieved.
Level of Reporting
Reference Surgeon
Recognition Goal
95% or greater
Clinical Guideline Recommendations or Other Evidence Supporting the Measure
Mitral Foundation's <i>Standards and Best Practices</i>

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