JAWDA KPI Quarterly Guidelines for Adult Cardiac Surgery (CS) Service Providers

Issue 2023

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Executive Summary

The Department of Health– Abu Dhabi (DOH) is the regulatory body of the healthcare sector in the Emirate of Abu Dhabi and ensures excellence in healthcare for the community by monitoring the health status of its population.

The Emirate of Abu Dhabi is experiencing a substantial growth in the number of hospitals, centers and clinics. This is ranging from school clinics and mobile units to internationally renowned specialist and tertiary academic centers. Although, access and quality of care has improved dramatically over the last couple of decades, mirroring the economic upturn and population boom of Emirate of Abu Dhabi, however challenges remain in addressing further improvements.

The main challenges that are presented with increasingly dynamic population include an aging population with increased expectation for treatment, utilization of technology and diverse workforce leading to increased complexity of healthcare provision in Abu Dhabi. All of this results in an increased and inherent risk to quality and patient safety.

DOH has developed dynamic and comprehensive quality framework in order to bring about improvements across the health sector. This guidance relates to the quality indicators that DOH is mandating the quarterly reporting against by the operating general and specialist hospitals in Abu Dhabi.

The guidance sets out the full definition and method of calculation for patient safety and clinical effectiveness indicators. For enquiries about this guidance, please contact jawda@DoH.gov.ae

This document is subject for review and therefore it is advisable to utilize online versions available on the DOH at all times.

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About this Guidance

The guidance sets out the definitions and reporting frequency of JAWDA Cardiac Surgery (CS) performance indicators. The Department of Health (DoH), with consultation from local and international expertise of cardiac surgeons, has developed Cardiac Surgery Performance Indicators that are aimed for assessing the degree to which a provider competently and safely delivers the appropriate clinical services to the patient within the optimal period of time.

The Jawda KPI for cardiac surgery patients in this guidance include measures to monitor morbidity and mortality in patients undergoing cardiac surgery procedures. . Healthcare providers are the most qualified professionals to develop and evaluate quality of care for cardiac surgery patients; therefore, it is crucial that clinicians retain a leadership position in defining performance among cardiac surgery healthcare providers.

Who is this guidance for?
All DoH licensed healthcare facilities providing Cardiac Surgery in the Emirate of Abu Dhabi.

How do I follow this guidance?
Each provider will nominate one member of staff to coordinate, collect, monitor and report Cardiac Surgery quality indicators data as per communicated dates. The nominated healthcare facility lead must in the first instance e-mail their contact details (if different from previous submission) to JAWDA@doh.gov.ae and submit the required quarterly quality performance indicators through Jawda online portal.

What are the Regulations related to this guidance?
- Legislation establishing the Health Sector
- As per DoH Policy for Quality and Patient Safety issued January 15th 2017, this guidance applies to all DOH Licensed Hospital Healthcare Facilities in the Emirate of Abu Dhabi in accordance with the requirements set out in this Standard
- DOH Standard for Centers of Excellence in the Emirate of Abu Dhabi issued March 2019

Type: CS Quality Indicator   **Indicator Number: CS001**

KPI Description (title):	**Patients Undergoing Isolated CABG Who Receive Anti-Platelet Medication at Discharge**
Domain	Patient Safety
Sub-Domain	Clinical Effectiveness
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery who were discharged on anti-platelet medication.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who were discharged on anti-platelet medication. (See *Appendix C)* *ICD-10 CM codes*: Z79.02 **Denominator** All adult patients discharged during the reporting period have undergone an Isolated CABG procedure. *(See Appendix-A)* **Denominator Inclusions** • Cases that are both on and off-pump • Includes first operation • Includes re-operations (patients who have undergone a previous CABG any time prior to current episode of care) **Denominator Exclusions** • Patients with in-hospital mortality • Patients with clinician documented contraindications to antiplatelets (i.e. allergy, bleeding. *The contraindication must be documented in the medical record by a physician, nurse practitioner, or physician assistant*)
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Higher numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS002**

KPI Description (title):	**Patients Undergoing Isolated CABG Who Receive Beta Blockade at Discharge**
Domain	Patient Safety
Sub-Domain	Clinical Effectiveness
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery who were discharged on beta-blockers.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who were discharged on beta-blockers. (See *Appendix D)* **Denominator** All adult patients discharged during the reporting period that have undergone an Isolated CABG procedure (*See Appendix-A)* **Denominator Inclusions** • Cases that are both on and off-pump • Includes first operation • Includes re-operations (patients who have undergone a previous CABG any time prior to current episode of care) **Denominator Exclusions** • Patients with in-hospital mortality • Patients with documented contraindications to beta blockers *(The contraindication must be documented in the medical record)*
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Higher numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator **Indicator Number: CS003**

KPI Description (title):	**Patients Undergoing Isolated CABG With Anti-Lipid Treatment at Discharge**
Domain	Patient Safety
Sub-Domain	Clinical Effectiveness
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery who were discharged on a lipid lowering statin.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who were discharged on a lipid lowering statin. (See *Appendix E*) **Denominator** All adult patients discharged during the reporting period that have undergone an Isolated CABG surgery procedure *(See Appendix-A)* **Denominator Inclusions** • Cases that are both on and off-pump • Includes first operation • Includes re-operations (patients who have undergone a previous CABG any time prior to current episode of care) **Denominator Exclusions** • Patients with in-hospital mortality Patients with clearly documented contraindications to lipids. *(The contraindication must be documented in the medical record)*
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Higher numbers are better.
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator **Indicator Number: CS004**

KPI Description (title):	**Patients Undergoing Isolated CABG who Receive Preoperative Beta Blockade**
Domain	Patient Safety
Sub-Domain	Clinical Effectiveness
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery who received beta-blockers within 24 hours preceding surgery.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who received beta -blockers within 24 hours prior to incision in the operating room. Please see *Appendix D* **Denominator** All adult patients discharged during the reporting period that have undergone an Isolated CABG surgery procedure (*See Appendix-A)* **Denominator Inclusions** • Cases that are both on and off-pump • Includes first operation • Includes re-operations (patients who have undergone a previous CABG any time prior to current episode of care) **Denominator Exclusions** • Clinical status of the patient was emergent or emergent salvage prior to entering the operating room • Patients with clearly documented contraindications to beta blockers *(The contraindication must be documented in the medical record)*
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Higher numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS005**

KPI Description (title):	Patients Undergoing Isolated CABG Use of Internal Mammary Artery (IMA)
Domain	Patient Safety
Sub-Domain	Clinical Effectiveness
Definition:	Percentage of adult patients aged 18 years and older undergoing Isolated CABG surgery who received an internal mammary artery (IMA) graft.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who received a 'Left IMA', 'Right IMA' or 'Both' internal mammary artery (IMA) graft. *CPT code:* 4110F **Denominator** All adult patients discharged during the reporting period that have undergone an Isolated CABG surgery procedure *(See Appendix-A)* **Denominator Inclusions** • Cases that are both on and off-pump • Includes first operation **Denominator Exclusions** • Patient had a previous CABG surgery prior to the current admission • IMA was not used and one of the following reasons was provided: - Subclavian stenosis - Previous cardiac or thoracic surgery - Previous mediastinal radiation - Emergent or salvage procedure - No (by- passable) LAD disease
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Higher numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Cardiac Surgery Quality Performance Indicators

KPI Description (title):	**Patients Undergoing Isolated CABG Who Develop Postoperative Renal Failure**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery that develop postoperative renal failure or require dialysis.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who develop postoperative renal failure or require dialysis during the hospitalization for surgery. ***Secondary Diagnoses ICD-10 CM (not limited to)***: N99.0, N17.0, N17.1, N17.2, N17.8, N17.9 ***CPT***: 90935, 90937, 90940, 90945, 90947 **Numerator Inclusions:** Patients with acute renal failure or worsening renal function resulting in ONE OR BOTH of the following: - Increase in Serum Creatinine level 3x greater than baseline or Serum Creatinine level ≥4.0mg/dL, acute rise must be at least 0.5mg/dL OR - A new requirement for dialysis postoperatively **Denominator** All adult patients discharged during the reporting period that have undergone an Isolated CABG surgery ***(See Appendix-A)*** **Denominator Inclusions** - Cases that are both on and off-pump - Includes first operation - Includes re-operations (patients who have undergone a previous CABG any time prior to current episode of care) **Denominator Exclusions** - Patients with documented history of renal failure (pre-op creatinine ≥4.0) (Present on Admission) - Exclude patients with prior renal transplants if their creatinine has been or is ≥4.0 or dialysis is documented as 'yes' post-transplant baseline serum creatinine ≥4.0 ***ICD-10 CM:*** Z94.0 - Patients undergoing dialysis currently (prior to surgery) - Renal dialysis if ultrafiltration is the only documentation found in the record since this is for volume management. *Dialysis includes any form of peritoneal or hemodialysis the patient is receiving prior to surgery. Also, may include Continuous Veno-Venous Hemofiltration (CVVH, CVVH-D), and Continuous Renal Replacement Therapy (CRRT) as dialysis.*
Reporting Frequency:	Quarterly

Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure https://www.sts.org/sites/default/files/ACSD_TrainingManualV2-9_July2019.pdf sequence # 6870
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator　　　　　　　　　　**Indicator Number:　CS007**

KPI Description (title):	**Percent of unplanned Surgical Re-operation in Patients Having Major Cardiac Surgery**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing major cardiac surgery that require an unplanned return to the operating room during same hospitalization.
Calculation:	**Numerator** Number of adult patients undergoing major cardiac surgery who require an unplanned return to the operating room during the same hospitalization up to discharge, even if beyond 30 days post-op. *Service codes:* 20, 20-01, 20-02 **Numerator Inclusions:** • Include patients that return to an operating room suite or equivalent OR environment (i.e., ICU setting) as identified by your institution. • Surgical re-intervention must be during the index surgical admission. *Numerator Guidance:* • An unplanned return to OR is for any reason included but not limited to: Bleeding, with or without tamponade, graft occlusion, valve dysfunction, reintervention for myocardial ischemia (graft or native vessel), aortic reintervention, or other cardiac or non-cardiac reason). • For non-cardiac re-op include procedures requiring a return to the operating room, such as a tracheostomy, hematoma evacuation, etc. **Numerator Exclusions:** • Procedures performed outside the operating room, such as GI lab for peg tubes, shunts for dialysis, etc. • Do not capture reopening of the chest or situations of excessive bleeding that occur prior to the patient leaving the operating room at the time of the primary procedure. • Re-operation to non-operative space, non-primary operative space, non-cardiac reasons. i.e. gangrenous toe amputation, trach, carotid endarterectomy, Rhythm disturbance requiring permanent pacemaker.

	Denominator All adult patients discharged during the reporting period that have undergone a major cardiac surgery procedure (**Appendix-B**) *Denominator Exclusion:* • Isolated CABG surgery
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

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Cardiac Surgery Quality Performance Indicators

Type: CS Quality Indicator **Indicator Number: CS008**

KPI Description (title):	**All cause 30-day unplanned hospital readmissions after Major Cardiac Surgery Procedure**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing major cardiac surgery with unplanned inpatient readmission within 30 days of discharge from surgical admission. All related and unrelated readmissions to be included.
Calculation:	**Numerator:** Number of adult patients undergoing major cardiac surgery with unplanned inpatient readmission within 30 days of discharge from the cardiac surgery hospitalization. **Numerator Inclusion:** • All related and unrelated unplanned inpatient admissions within 30 days of discharge • If the patient was discharged to an "Acute Rehab" floor of the same hospital and then readmitted back as an in-patient into a nursing floor, code "Yes" *Inclusion Guidance:* • If patient has multiple readmissions within 30 days of index discharge, only count the <u>first</u> readmission. • Readmissions do not need to be at same institution where the initial surgical procedure was done **Denominator** All adult patients discharged alive during the reporting period that have undergone a major cardiac surgery **(Appendix-B)** *Denominator Exclusion:* • Isolated CABG surgery • Discharges against medical advice • Patients discharged/transferred to another acute care facility • Patients with discharge disposition of death
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/sites/default/files/ACSD_TrainingManualV2-9_July2019.pdf Sequence #7140
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS009**

KPI Description (title):	Percent of all-cause mortality occurring within 30 days of Major Cardiac Surgery Procedure
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of all-cause mortality in adult patients aged 18 years and older who have undergone major cardiac surgery.
Calculation:	**Numerator** Number of adult patients undergoing major cardiac surgery who expire within 30 days of procedure with in-hospital or post-discharge all-cause mortality. **Denominator** All adult patients discharged during the reporting period that have undergone a major cardiac surgery procedure (**Appendix-B)** *Exclusion:* • Isolated CABG surgery
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS010**

KPI Description (title):	**Postoperative Prolonged Intubation (Ventilation) After Major Cardiac Surgery Procedure**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing major cardiac surgery who require intubation for more than 24 hours after surgery.
Calculation:	**Numerator** Number of adult patients undergoing major cardiac surgery who require intubation > 24 hours post operating room exit. ***ICD-10 CM:*** Z99.11 ***CPT codes:*** 31500, 94002, 94003 **Numerator Inclusions:** Causes such as ARDS, pulmonary edema, and/or any patient requiring mechanical ventilation > 24 hours postoperatively. *Numerator Guidance:* • The hours of postoperative ventilation time include operating room exit until extubation, plus any additional hours following reintubation (excluding time in Operating Room) • Ventilator hours are calculated with a decimal point so that minutes can be included. Divide the number of minutes by 60. Examples: 6 minutes = 0.1 hours 15 minutes = 0.3 hours 30 minutes = 0.5 hours 45 minutes = 0.8 hours, etc. • If patient has a trach, calculate the time patient separated from mechanical ventilator post-operatively. **Numerator Exclusions:** Do not include the hours ventilated during return to the operating room suite, which requires re- intubation as part of general anesthesia. **Denominator** All adult patients discharged during the reporting period that have undergone a major cardiac surgery procedure. **Appendix-B** Exclusion*:* • Isolated CABG surgery
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Lower is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

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Cardiac Surgery Quality Performance Indicators

KPI Description (title):	**Stroke/Cerebrovascular Accident after Major Cardiac Surgery Procedure**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing major cardiac surgery who have a postoperative stroke that did not resolve within 24 hours.
Calculation:	**Numerator** Number of adult patients undergoing major cardiac surgery who have a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours during the hospital encounter, even if after 30 days of surgery. **Numerator Guidance** - There are two forms of stroke: - Ischemic - blockage of a blood vessel supplying the brain - Hemorrhagic - bleeding into or around the brain - Embolic strokes should be coded as ischemic. - Stroke must be confirmed by physician documentation and/or imaging ***ICD-10 CM codes (not limited to):*** I60.00, I60.01, I60.02, I60.10, I60.11, I60.12, I60.2, I60.30, I60.31, I60.32, I60.4, I60.50, I60.51, I60.52, I60.6, I60.7, I60.8, I60.9, I61.0, I61.1, I61.2, I61.3, I61.4, I61.5, I61.6, I61.8, I61.9, I62.00, I62.01, I62.02, I62.03, I62.1, I62.9, I63.00, I63.011, I63.012, I63.013, I63.019, I63.02, I63.031, I63.032, I63.033, I63.039, I63.09, I63.10, I63.111, I63.112, I63.113, I63.119, I63.12, I63.131, I63.132, I63.133, I63.139, I63.19, I63.20, I63.211, I63.212, I63.213, I63.219, I63.22, I63.231, I63.232, I63.233, I63.239, I63.29, I63.30, I63.311, I63.312, I63.313, I63.319, I63.321, I63.322, I63.323, I63.329, I63.331, I63.332, I63.333, I63.339, I63.341, I63.342, I63.343, I63.349, I63.39, I63.40, I63.411, I63.412, I63.413, I63.419, I63.421, I63.422, I63.423, I63.429, I63.431, I63.432, I63.433, I63.439, I63.441, I63.442, I63.443, I63.449, I63.49, I63.50, I63.511, I63.512, I63.513, I63.519, I63.521, I63.522, I63.523, I63.529, I63.531, I63.532, I63.533, I63.539, I63.541, I63.542, I63.543, I63.549, I63.59, I63.6, I63.81, I63.89, I63.9, I97.820, I67.82 **Denominator** All adult patients discharged during the reporting period that have undergone a major cardiac surgery procedure. (**Appendix-B)** Exclusion: - Isolated CABG surgery
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure https://www.ninds.nih.gov/Disorders/All-Disorders/Stroke-Information-Page
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS012**

KPI Description (title):	Surgical Site infection for Major Cardiac Surgery Procedure
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing major cardiac surgery who, within 30 days postoperatively, develop surgical site wound infection involving muscle, bone, and/or mediastinum requiring operative intervention.

Calculation:	**Numerator**
	Number of adult patients who within 30 days postoperatively, develop surgical site infection involving muscle, bone and/or mediastinum requiring operative intervention.
	
	ICD-10 CM codes (not limited to): T81.4XXA, T81.4XXD, T81.4XXS
	
	Numerator Guidance:
	• Confirmation of surgical site infection is captured via the medical record
	
	Deep incisional SSI: Must meet the following criteria
	• Infection occurs within 30 days after the operative procedure, AND involves deep soft tissues of the incision (e.g., fascial and muscle layers) AND patient has at least one of the following:
	   ○ Purulent drainage from the deep incision.
	   ○ A deep incision that spontaneously dehisces or is deliberately opened by a surgeon, attending physician or other designee and is culture-positive or not cultured, AND patient has at least one of the following signs or symptoms:
	      ▪ Fever (>38°C)
	      ▪ Localized pain or tenderness
	      ▪ An abscess or other evidence of infection involving the deep incision that is detected on direct examination, during invasive procedure, or by histopathologic examination or imaging test.
	   ○ A culture with negative findings does not meet this criterion.
	
	 There are two specific types of deep incisional SSIs:
	• Deep Incisional Primary (DIP) – a deep incisional SSI that is identified in a primary incision in a patient that has had an operation with one or more incisions (e.g., chest incision for CABG)
	• Deep Incisional Secondary (DIS) – a deep incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site incision for CABG)
	
	Organ/Space SSI: Must meet the following criteria
	• Infection occurs within 30 days after the operative procedure, and infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure, and patient has at least one of the following:

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	o Purulent drainage from a drain that is placed into the organ/space
	    o Organisms isolated from an aseptically-obtained culture of fluid or tissue in the organ/space
	    o An abscess or other evidence of infection involving the organ/space that is detected on direct examination, during invasive procedure, or by histopathologic examination or imaging test, and meets at least one criterion for a specific organ/space infection of mediastinitis below:
	
	Mediastinitis: Must meet at least 1 of the following criteria:
	    • Patient has organisms cultured from mediastinal tissue or fluid obtained during an invasive procedure.
	    • Patient has evidence of mediastinitis seen during an invasive procedure or histopathologic examination.
	    • Patient has at least 1 of the following signs or symptoms:
	        o Fever (>38°C)
	        o Chest pain*
	        o Sternal instability* and at least 1 of the following:
	            ▪ Purulent discharge from mediastinal area
	            ▪ Organisms cultured from blood or discharge from mediastinal area or Mediastinal widening on imaging test.
	
	Denominator: All adult patients undergoing major cardiac surgery procedure during the reporting period (**Appendix-B)**
	
	Exclusion:
	    • Isolated CABG surgery

Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure CDC definition of surgical site infection: https://www.cdc.gov/nhsn/pdfs/pscmanual/9pscssicurrent.pdf
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Cardiac Surgery Quality Performance Indicators

Type: CS Quality Indicator   **Indicator Number: CS013**

KPI Description (title):	**Appropriate Antibiotic Timing for Major Cardiac Surgery Patients**
Domain	Patient Safety
Sub-Domain	Clinical Effectiveness
Definition:	Percentage of adult patients aged 18 years and older undergoing major cardiac surgery who received prophylactic antibiotics within one hour of surgical incision (two hours if receiving vancomycin or fluoroquinolone). The surgical incision time is the time of the first incision, regardless of location.
Calculation:	**Numerator:** Number of adult patients undergoing major cardiac surgery who received a first generation or second-generation cephalosporin prophylactic antibiotic (e.g., cefazolin, cefuroxime, cefamandole) within one hour of surgical incision (two hours if receiving vancomycin or fluoroquinolone) or in the event of a documented allergy, an alternate antibiotic choice (e.g., vancomycin, clindamycin) Please see *Appendix F: Prophylactic antibiotics Shafafiya Drug Codes (not limited to)* **Denominator** All adult patients discharged during the reporting period that have undergone a major cardiac surgery procedure **Appendix-B)** **Denominator Exclusions**: • Patients with clearly documented contraindications for not administering antibiotic (i.e. allergy) • Patients who had a principal diagnosis suggestive of preoperative infectious diseases • Patients whose ICD-10-CM principal procedure was performed entirely by laparoscope • Patients enrolled in clinical trials • Patients with documented infection prior to surgical procedure of interest • Patients who expired peri-operatively • Patients who were receiving antibiotics more than 24 hours prior to surgery • Patients who were receiving antibiotics within 24 hours prior to arrival • Isolated CABG surgery
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/sites/default/files/ACSD_TrainingManualV2-9_July2019.pdf Sequence #2285 http://www.sts.org/resources-publications/clinical-practice-credentialing-guidelines/antibiotic-guidelines
Desired direction:	Higher numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

KPI Description (title):	**Percent of unplanned Surgical Re-operation in Patients Having Isolated CABG surgery**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery that require an unplanned return to the operating room during same hospitalization.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who require an unplanned return to the operating room during the same hospitalization up to discharge, even if beyond 30 days post-op. *Service codes:* 20, 20-01, 20-02 **Numerator Inclusions:** • Include patients that return to an operating room suite or equivalent OR environment (i.e., ICU setting) as identified by your institution • Surgical re-intervention must be during the index surgical admission *Numerator Guidance:* • An unplanned return to OR is for any reason included but not limited to: Bleeding, with or without tamponade, graft occlusion, valve dysfunction, reintervention for myocardial ischemia (graft or native vessel), aortic reintervention, or other cardiac or non-cardiac reason). • For non-cardiac re-op include procedures requiring a return to the operating room, such as a tracheostomy, hematoma evacuation, etc. **Numerator Exclusions:** • Procedures performed outside the operating room, such as GI lab for peg tubes, shunts for dialysis, etc. • Do not capture reopening of the chest or situations of excessive bleeding that occur prior to the patient leaving the operating room at the time of the primary procedure. • Re-op to non-operative space, non-primary operative space, non-cardiac reasons. i.e. gangrenous toe amputation, trach, carotid endarterectomy, Rhythm disturbance requiring permanent pacemaker. **Denominator** All adult patients discharged during the reporting period that have undergone a Isolated CABG surgery procedure **(See *Appendix-A)*
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Lower number are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS015**

KPI Description (title):	**All cause 30-day unplanned hospital readmissions after Isolated CABG surgery Procedure**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery with unplanned inpatient readmission within 30 days of discharge from surgical admission. All related and unrelated readmissions to be included.
Calculation:	**Numerator:** Number of adult patients undergoing Isolated CABG surgery with unplanned inpatient readmission within 30 days of discharge from the cardiac surgery hospitalization. **Numerator Inclusion:** • All related and unrelated unplanned inpatient admissions within 30 days of discharge • If the patient was discharged to an "Acute Rehab" floor of the same hospital and then readmitted back as an in-patient into a nursing floor, code "Yes" *Inclusion Guidance:* • If patient has multiple readmissions within 30 days of index discharge, only count the first readmission. • Readmissions do not need to be at same institution where the initial surgical procedure was done. **Denominator** All adult patients discharged alive during the reporting period that have undergone a Isolated CABG surgery **(See *Appendix-A)* **Denominator Exclusions** • Discharges against medical advice • Patients discharged/transferred to another acute care facility • Patients with discharge disposition of death
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/sites/default/files/ACSD_TrainingManualV2-9_July2019.pdf Sequence #7140
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS016**

KPI Description (title):	**Percent of all-cause mortality occurring within 30 days of Isolated CABG surgery Procedure**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of all-cause mortality in adult patients aged 18 years and older who have undergone Isolated CABG surgery.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who expire within 30 days of procedure with in-hospital or post-discharge all-cause mortality. **Denominator** All adult patients discharged, dead or alive, during the reporting period that have undergone an isolated CABG surgery (**See *Appendix-A)***
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS017**

KPI Description (title):	**Postoperative Prolonged Intubation (Ventilation) After Isolated CABG surgery**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery who require intubation for more than 24 hours after surgery.

Calculation:	**Numerator**
	Number of adult patients undergoing Isolated CABG surgery who require intubation > 24 hours post operating room exit.
	
	ICD-10 CM: Z99.11
	CPT codes: 31500, 94002, 94003
	
	Numerator Inclusions:
	Causes such as ARDS, pulmonary edema, and/or any patient requiring mechanical ventilation > 24 hours postoperatively.
	
	Numerator Guidance:
	• The hours of postoperative ventilation time include operating room exit until extubation, plus any additional hours following reintubation (excluding time in Operating Room)
	• Ventilator hours are calculated with a decimal point so that minutes can be included. Divide the number of minutes by 60.
	 Examples:
	  6 minutes = 0.1 hours
	  15 minutes = 0.3 hours
	  30 minutes = 0.5 hours
	  45 minutes = 0.8 hours, etc.
	• If patient has a trach, calculate the time patient separated from mechanical ventilator post-operatively.
	
	Numerator Exclusions:
	Do not include the hours ventilated during return to the operating room suite, which requires re- intubation as part of general anesthesia.
	
	Denominator
	All adult patients discharged during the reporting period have undergone a Isolated CABG surgery. **(See *Appendix-A)*

Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure
Desired direction:	Lower is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator **Indicator Number: CS018**

KPI Description (title):	**Stroke/Cerebrovascular Accident after Isolated CABG surgery**
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery who have a postoperative stroke that did not resolve within 24 hours.

Calculation:	**Numerator**
	Number of adult patients undergoing Isolated CABG surgery who have a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours during the hospital encounter, even if after 30 days of surgery.
	
	Numerator Guidance
	• There are two forms of stroke:
	    • Ischemic - blockage of a blood vessel supplying the brain
	    • Hemorrhagic - bleeding into or around the brain
	• Embolic strokes should be coded as ischemic.
	• Stroke must be confirmed by physician documentation and/or imaging
	
	ICD-10 CM codes (not limited to): I60.00, I60.01, I60.02, I60.10, I60.11, I60.12, I60.2, I60.30, I60.31, I60.32, I60.4, I60.50, I60.51, I60.52, I60.6, I60.7, I60.8, I60.9, I61.0, I61.1, I61.2, I61.3, I61.4, I61.5, I61.6, I61.8, I61.9, I62.00, I62.01, I62.02, I62.03, I62.1, I62.9, I63.00, I63.011, I63.012, I63.013, I63.019, I63.02, I63.031, I63.032, I63.033, I63.039, I63.09, I63.10, I63.111, I63.112, I63.113, I63.119, I63.12, I63.131, I63.132, I63.133, I63.139, I63.19, I63.20, I63.211, I63.212, I63.213, I63.219, I63.22, I63.231, I63.232, I63.233, I63.239, I63.29, I63.30, I63.311, I63.312, I63.313, I63.319, I63.321, I63.322, I63.323, I63.329, I63.331, I63.332, I63.333, I63.339, I63.341, I63.342, I63.343, I63.349, I63.39, I63.40, I63.411, I63.412, I63.413, I63.419, I63.421, I63.422, I63.423, I63.429, I63.431, I63.432, I63.433, I63.439, I63.441, I63.442, I63.443, I63.449, I63.49, I63.50, I63.511, I63.512, I63.513, I63.519, I63.521, I63.522, I63.523, I63.529, I63.531, I63.532, I63.533, I63.539, I63.541, I63.542, I63.543, I63.549, I63.59, I63.6, I63.8, I63.9, I97.820, I67.82
	
	Denominator
	All adult patients discharged during the reporting period have undergone a Isolated CABG surgery. **(See *Appendix-A)*

Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure https://www.ninds.nih.gov/Disorders/All-Disorders/Stroke-Information-Page
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS019**

KPI Description (title):	Surgical Site Infection for Isolated CABG surgery
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of adult patients aged 18 years and older undergoing Isolated CABG surgery who, within 30 days postoperatively, develop surgical site wound infection involving muscle, bone, and/or mediastinum requiring operative intervention.

Calculation:	**Numerator**
	Number of adult patients who within 30 days postoperatively, develop surgical site infection involving muscle, bone and/or mediastinum requiring operative intervention.
	
	ICD-10 CM codes (not limited to): T81.4XXA, T81.4XXD, T81.4XXS
	
	Numerator Guidance:
	• Confirmation of surgical site infection is captured via the medical record
	
	Deep incisional SSI: Must meet the following criteria
	• Infection occurs within 30 days after the operative procedure, AND involves deep soft tissues of the incision (e.g., fascial and muscle layers) AND patient has at least one of the following:
	  o Purulent drainage from the deep incision.
	  o A deep incision that spontaneously dehisces or is deliberately opened by a surgeon, attending physician or other designee and is culture-positive or not cultured, AND patient has at least one of the following signs or symptoms:
	    ▪ Fever (>38°C)
	    ▪ Localized pain or tenderness
	    ▪ An abscess or other evidence of infection involving the deep incision that is detected on direct examination, during invasive procedure, or by histopathologic examination or imaging test.
	  o A culture with negative findings does not meet this criterion.
	
	There are two specific types of deep incisional SSIs:
	• Deep Incisional Primary (DIP) – a deep incisional SSI that is identified in a primary incision in a patient that has had an operation with one or more incisions (e.g., chest incision for CABG)
	• Deep Incisional Secondary (DIS) – a deep incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site incision for CABG)
	
	Organ/Space SSI: Must meet the following criteria
	• Infection occurs within 30 days after the operative procedure, and infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure, and patient has at least one of the following:
	    o Purulent drainage from a drain that is placed into the organ/space

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	o Organisms isolated from an aseptically-obtained culture of fluid or tissue in the organ/space
	o An abscess or other evidence of infection involving the organ/space that is detected on direct examination, during invasive procedure, or by histopathologic examination or imaging test, and meets at least one criterion for a specific organ/space infection of mediastinitis below:
	
	Mediastinitis: Must meet at least 1 of the following criteria:
	• Patient has organisms cultured from mediastinal tissue or fluid obtained during an invasive procedure.
	• Patient has evidence of mediastinitis seen during an invasive procedure or histopathologic examination.
	• Patient has at least 1 of the following signs or symptoms:
	   o Fever (>38°C)
	   o Chest pain*
	   o Sternal instability* and at least 1 of the following:
	      ▪ Purulent discharge from mediastinal area
	      ▪ Organisms cultured from blood or discharge from mediastinal area or Mediastinal widening on imaging test.
	
	Denominator: All adult patients undergoing Isolated CABG surgery during the reporting period **(See *Appendix-A*)**

Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	CardiothoraciCSrocedureSurgery\5. Source of information\ThoracicCardiac Procedure CDC definition of surgical site infection: https://www.cdc.gov/nhsn/pdfs/pscmanual/9pscssicurrent.pdf
Desired direction:	Lower numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS020**

KPI Description (title):	Appropriate Antibiotic Timing for Isolated CABG surgery
Domain	Patient Safety
Sub-Domain	Clinical Effectiveness
Definition:	Percentage of adult patients aged 18 years and older undergoing Isolated CABG surgery who received prophylactic antibiotics within one hour of surgical incision (two hours if receiving vancomycin or fluoroquinolone). The surgical incision time is the time of the first incision, regardless of location.
Calculation:	**Numerator** Number of adult patients undergoing Isolated CABG surgery who received a first generation or second generation cephalosporin prophylactic antibiotic (e.g., cefazolin, cefuroxime, cefamandole) within one hour of surgical incision (two hours if receiving vancomycin or fluoroquinolone) or in the event of a documented allergy, an alternate antibiotic choice (e.g., vancomycin, clindamycin) Please see *Appendix F: Prophylactic antibiotics Shafafiya Drug Codes (not limited to)* **Denominator** All adult patients discharged during the reporting period that have undergone a Isolated CABG surgery **(See *Appendix-A*)** **Denominator Exclusions:** • Patients with clearly documented contraindications for not administering antibiotic (i.e. allergy) • Patients who had a principal diagnosis suggestive of preoperative infectious diseases • Patients whose ICD-10-CM principal procedure was performed entirely by laparoscope • Patients enrolled in clinical trials • Patients with documented infection prior to surgical procedure of interest • Patients who expired peril-operatively • Patients who were receiving antibiotics more than 24 hours prior to surgery • Patients who were receiving antibiotics within 24 hours prior to arrival
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/sites/default/files/ACSD_TrainingManualV2-9_July2019.pdf Sequence #2285 http://www.sts.org/resources-publications/clinical-practice-credentialing-guidelines/antibiotic-guidelines
Desired direction:	Higher numbers are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS021**

KPI Description (title):	Mortality for Isolated Aortic Valve Replacement (AVR)
Domain	Patient Safety
Sub-Domain	Complication
Definition:	Percent of patients aged 18 and older undergoing isolated aortic valve replacement (AVR) who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure
Calculation:	**Numerator** Number of patients aged 18 and older undergoing isolated AVR who die, including both 1) all deaths occurring during the hospitalization in which the operation was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure **Denominator** All adult patients aged 18 and older undergoing isolated AVR surgery ***CPT Codes:***, 33366, 33405, 33406, 33410, 33411, 33412, 33413
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/quality-safety/performance-measures/descriptions#OperativeMortalityAVR
Desired direction:	Lower Mortality rates are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS022**

KPI Description (title):	**Mortality for Mitral Valve Replacement (MVR)**
Domain	Patient Safety
Sub-Domain	complication
Definition:	Percent of adult patients aged 18 and older undergoing isolated mitral valve (MV) replacement who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure
Calculation:	**Numerator** Number of patients aged 18 and older undergoing isolated MV Replacement who die, including both 1) all deaths occurring during the hospitalization in which the operation was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure **Denominator** All adult patients aged 18 and older undergoing isolated MV Replacement surgery ***CPT Code***: 33430
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/quality-safety/performance-measures/descriptions#OperativeMortalityMVReplace
Desired direction:	Lower is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS023**

KPI Description (title):	**Mortality for Mitral Valve (MVR) Repair**
Domain	Patient Safety
Sub-Domain	complication
Definition:	Percent of adult patients aged 18 and older undergoing isolated mitral valve (MV) repair who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure
Calculation:	**Numerator** Number of patients aged 18 and older undergoing isolated MV repair who die, including both 1) all deaths occurring during the hospitalization in which the operation was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure **Denominator** All adult patients aged 18 and older undergoing isolated MV repair surgery ***CPT Code***:, 33420, 33422, 33425, 33426, 33427
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/quality-safety/performance-measures/descriptions#OperativeMortalityMVReplace
Desired direction:	Lower is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Cardiac Surgery Quality Performance Indicators

Type: CS Quality Indicator   **Indicator Number: CS024**

KPI Description (title):	**Mortality for MVR+CABG Replacement**
Domain	Patient Safety
Sub-Domain	complication
Definition:	Percent of patients aged 18 and older undergoing combined MV Replacement and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure
Calculation:	**Numerator** Number of patients aged 18 and older undergoing combined MV Replacement and CABG who die, including both 1) all deaths occurring during the hospitalization in which the operation was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure. **Denominator** All adult patients aged 18 and older undergoing combined MV Replacement + CABG **CPT Code**: 33430 with (**Appendix A Procedure)** CABG CPT
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/quality-safety/performance-measures/descriptions#MVReplaceCABG https://www.sts.org/quality-safety/performance-measures/descriptions#MVRepairCABG
Desired direction:	Lower is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Quality Indicator   **Indicator Number: CS025**

KPI Description (title):	**Mortality for MVR+CABG Repair**
Domain	Patient Safety
Sub-Domain	complication
Definition:	Percent of patients aged 18 and older undergoing combined MV Repair and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure
Calculation:	**Numerator** Number of patients aged 18 and older undergoing combined MV Repair and CABG who die, including both 1) all deaths occurring during the hospitalization in which the operation was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure. **Denominator** All adult patients aged 18 and older undergoing combined MV Repair + CABG ***CPT Code:*** 33418, 33419, 33420, 33422, 33425, 33426, 33427 with (***Appendix A Procedure)*** CABG CPT
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/quality-safety/performance-measures/descriptions#MVReplaceCABG https://www.sts.org/quality-safety/performance-measures/descriptions#MVRepairCABG
Desired direction:	Lower is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS026**

KPI Description (title):	**Mortality for AVR+CABG**
Domain	Patient safety
Sub-Domain	complication
Definition:	Percent of patients aged 18 and older undergoing combined AVR and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure.
Calculation:	**Numerator** Number of patients aged 18 and older undergoing combined AVR and CABG who die, including both 1) all deaths occurring during the hospitalization in which the operation was performed, even if after 30 days, and 2) those deaths related to cardiac conditions occurring after discharge from the hospital, but within 30 days of the procedure **Denominator** All adult patients aged 18 and older undergoing combined AVR + CABG ***CPT Codes:*** 33361, 33362, 33363, 33364, 33365, 33366, 33405, 33406, 33410, 33411, 33412, 33413 with **(*Appendix A Procedure)*** CABG CPT
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	https://www.sts.org/quality-safety/performance-measures/descriptions#AVRCABG
Desired direction:	Lower is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS027**

KPI Description (title):	Referral to Cardiac Rehabilitation before Discharge for Major Cardiac Surgery Patients
Domain	Effectiveness
Sub-Domain	Continuity of care
Definition:	Number of patients aged 18 and older who have undergone major cardiac surgery that were referred to cardiac rehabilitation while in the hospital prior to discharge
Calculation:	**Numerator** Number of patients aged 18 and older who have undergone a cardiac surgery that were referred to cardiac rehabilitation while in the hospital prior to discharge **Denominator** Number of adult patients aged 18 and older who have undergone a cardiac surgery and have been discharged from the hospital *(See Appendix B)* ***Denominator Exclusions*** • Patients who are documented as medically, mentally, or emotionally inappropriate for a referral, should be identified as "Not Applicable". • Patients sent to rehab / transitional care/ SNF with plans to return home are not included in the N/A category unless there is clear documentation to support why a referral to Outpatient cardiac rehabilitation was not made.
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	National Institute for Health and Care Excellence (NICE) – United Kingdom
Desired direction:	Higher percentage is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS028**

KPI Description (title):	Follow-up appointment with Cardiothoracic Surgeon within 10 business days of discharge
Domain	Effectiveness
Sub-Domain	Continuity of care
Definition:	Percentage of Patients aged 18 and older who had scheduled follow-up appointment with cardiothoracic Surgeon within 10 business days of Discharge following Cardiac Surgery
Calculation:	**Numerator** Number of Patients aged 18 and older who had scheduled follow-up appointment with cardiothoracic Surgeon within 10 business days of Discharge, following Cardiac Surgery **Denominator** Number of patients aged 18 and older who have undergone a cardiac surgery and have been discharged from the hospital *(See Appendix B)* *Denominator Exclusions*: -Mortalities -Patients who are discharged/left against medical advice (AMA) -Patients transferred to another acute care facility during the index hospitalization
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	NA
Desired direction:	Higher percentages are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS029**

KPI Description (title):	**Follow-up appointment with Cardiologist within 4 weeks of discharge**
Domain	Effectiveness
Sub-Domain	Continuity of care
Definition:	Percentage of adult Patients aged 18 and older who had scheduled follow-up appointment with Cardiologist within 4 Weeks of Discharge, following Cardiac Surgery
Calculation:	**Numerator** Number of adult patients aged 18 and older who had scheduled follow-up appointment with Cardiologist within 4 Weeks of Discharge, following Cardiac Surgery. **Denominator** Number of adult patients aged 18 and older who have undergone a cardiac surgery and have been discharged from the hospital *(See Appendix B)* *Denominator Exclusions*: -Mortalities -Patients who are discharged/left against medical advice (AMA) -Patients transferred to another acute care facility during the index hospitalization
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	NA
Desired direction:	Higher percentages are better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS030**

KPI Description (title):	Time to urgent CABG following coronary angiography
Domain	Effectiveness
Sub-Domain	Timeliness
Definition:	Time between Urgent CABG and Coronary Angiography indicate the need of urgent CABG procedure The optimal window is between 5 to 7 days following diagnosis (and referral).
Calculation:	**Numerator** Sum of Days per adult patient between Urgent CABG time and time of Coronary Angiography indicate the need of urgent CABG procedure. Note: If the patient is transferred from another facility, count of days will start from the day of receipt. **Denominator** Number of Patients 18 and older undergoing CABG following Coronary Angiography ***CPT codes*****:** 93454, 93455, 93456, 93457, 93458, 93459, 93460, 93461 followed by ***(See Appendix A)*** **Calculation** Average Number of Days= $\frac{(Sum\ of\ Days\ per\ patient}{Total\ Patients}$
Reporting Frequency:	Quarterly
Unit of Measure:	Average Days
International comparison if available	NATIONAL ADULT CARDIAC SURGERY AUDIT (NACSA) – UK (ESC/ EACTS Revascularization Guidelines 2018)
Desired direction:	Lower is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS031**

KPI Description (title):	Antibiotics Administration – Duration for Major Cardiac Surgery Patients
Domain	Patient Safety
Sub-Domain	Effectiveness
Definition:	Percent of patients aged 18 years and older undergoing major cardiac surgery whose prophylactic antibiotics were discontinued within 48 hours after surgery end time
Calculation:	**Numerator** Number of patients aged 18 and older undergoing major cardiac surgery whose prophylactic antibiotics were discontinued within 48 hours after surgery end time **Denominator** Number of patients aged18 and older undergoing Major cardiac surgery (***See Appendix B)*** Denominator Exclusion: • Patients who had a principal diagnosis suggestive of preoperative infectious diseases • Patients enrolled in clinical trials • Patients with documented infection prior to surgical procedure of interest • Patients who expired perioperatively • Patients who were receiving antibiotics more than 24 hours prior to surgery • Patients who were receiving antibiotics within 24 hours prior to arrival • Patients who did not receive any antibiotics before or during surgery, or within 24 hours after anesthesia end time (i.e., patient did not receive prophylactic antibiotics) • Patients who did not receive any antibiotics during this hospitalization
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	The Society of Thoracic Surgeons (STS)
Desired direction:	Higher is better
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS033**

KPI Description (title):	**ICU mean Length of Stay following cardiac surgery**
Domain	Efficiency
Sub-Domain	Safety
Definition:	Length of stay (hours) in ICU for adult patients 18 and older following Cardiac surgery
Calculation:	**Numerator** Total hours in ICU for adult Patients 18 and older following Cardiac surgery ***Service codes (not limited to):*** 4, 27, 4-01, 4-02, 4-03 Length of Stay = time of Discharge from ICU – time of Admission to ICU following cardiac surgery **Denominator** Total number of discharges from ICU for Patient aged 18 and older who underwent Major cardiac Surgery **(See Appendix B)** ***Denominator Exclusion:*** • *Emergent/Emergent Salvage, and any LVADS, ECMO and transplant cases*
Reporting Frequency:	Quarterly
Unit of Measure:	Average hours
International comparison if available	National Adult Cardiac Surgery Audit (NCASA) UK
Desired direction:	Less is recommended
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS034**

KPI Description (title):	**Total Mean Length of Stay in days for Major Cardiac Surgery Patients**
Domain	Efficiency
Sub-Domain	Safety
Definition:	Average Length of stay in hospital for patients aged 18 and older who had major cardiac surgery.
Calculation:	**Numerator** Total number of adult patient days inside the hospital and had a major cardiac surgery **Denominator** Total number of discharges for patient aged 18 and older undergoing major Cardiac Surgery *(See Appendix-B)*
Reporting Frequency:	Quarterly
Unit of Measure:	Average Days
International comparison if available	National Adult Cardiac Surgery Audit (NCASA) UK
Desired direction:	Less is recommended
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS035**

KPI Description (title):	**Same Day Admission for Elective cardiac Surgeries**
Domain	Safety
Sub-Domain	Effectiveness
Definition:	Percentage of adult Patients aged 18 and older admitted 24 hours before Surgery start.
Calculation:	**Numerator**: Adult Patients aged 18 and older undergoing elective cardiac surgeries, who were admitted 24 hours before Surgery start. **Denominator**: All adult Patients aged 18 and older undergoing elective cardiac surgeries. *(See Appendix B)*
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	NATIONAL ADULT CARDIAC SURGERY AUDIT (NACSA) – UK
Desired direction:	Higher is better.
Data sources and guidance:	-Patient medical record -Hospital administrative data

Type: CS Quality Indicator   **Indicator Number: CS036**

KPI Description (title):	**Elective cardiac Surgery Waiting Time**
Domain	Effectiveness
Sub-Domain	Timeliness
Definition:	Waiting time (Weeks) for Elective Cardiac Surgery from Decision for surgery' to 'Surgery date'
Calculation:	**Numerator** Number of weeks between elective cardiac surgery time and time of patient assessment indicate the need of elective cardiac surgeries. Numerator Exclusion: • Patient is kept on waiting list more than 3 weeks due to insurance approval • Patients who are unable to have their treatment for social, work or personal reasons within 3 weeks • Patients who choose to wait longer than 3 weeks • Patients for whom it is not clinically appropriate to start treatment within 3 weeks • Emergency/Unplanned admissions **Denominator** Number of Patients 18 years and older undergoing elective cardiac surgeries *(See Appendix B)* Calculation Average Number of weeks= ((Sum of weeks per patient) / (Total Patients)
Reporting Frequency:	Quarterly
Unit of Measure:	Avg no. of weeks
International comparison if available	NATIONAL ADULT CARDIAC SURGERY AUDIT (NACSA) – UK OECD Health Statistics 2021 Definitions, Sources and Methods
Desired direction:	Less waiting time is recommended
Data sources and guidance:	-Patient medical record -Hospital administrative data

Appendix-A- Isolated CABG surgery Procedure CPT Codes

Isolated CABG Procedures:

Procedure Name	CPT Description	CPT Codes
REPAIR OF CORONARY ARTERIOVENOUS OR ARTERIOCARDIAC CHAMBER FISTULA, WITH CARDIOPULMONARY BYPASS	RPR C ARVEN/ARTERIOCAR CHAMBER FSTL W/CARD BYP	33500
REPAIR OF CORONARY ARTERIOVENOUS OR ARTERIOCARDIAC CHAMBER FISTULA, WITHOUT CARDIOPULMONARY BYPASS	RPR C ARVEN/ARTERIOCAR CHAMBER FSTL W/O CARD BYP	33501
BYPASS ARTERY - CORONARY REDO ON PUMP	CORONARY ARTERY BYPASS 1 CORONARY VENOUS GRAFT	33510
CORONARY ARTERY BYPASS, VEIN ONLY, 2 CORONARY VENOUS GRAFTS	CORONARY ARTERY BYPASS 2 CORONARY VENOUS GRAFTS	33511
CORONARY ARTERY BYPASS, VEIN ONLY, 3 CORONARY VENOUS GRAFTS	CORONARY ARTERY BYPASS 3 CORONARY VENOUS GRAFTS	33512
CORONARY ARTERY BYPASS, VEIN ONLY, 4 CORONARY VENOUS GRAFTS	CORONARY ARTERY BYPASS 4 CORONARY VENOUS GRAFTS	33513
CORONARY ARTERY BYPASS, VEIN ONLY, 5 CORONARY VENOUS GRAFTS	CORONARY ARTERY BYPASS 5 CORONARY VENOUS GRAFTS	33514
CORONARY ARTERY BYPASS, VEIN ONLY, 6 OR MORE CORONARY VENOUS GRAFTS	CORONARY ARTERY BYPASS 6/+ CORONARY VENOUS GRAFT	33516
CORONARY ARTERY BYPASS, USING VENOUS GRAFT(S) AND ARTERIAL GRAFT(S), SINGLE VEIN GRAFT	CORONARY ARTERY BYP W VEIN &ARTERY GRAFT 1 VEIN	33517
CORONARY ARTERY BYPASS, USING VENOUS GRAFT(S) AND ARTERIAL GRAFT(S), 2VENOUS GRAFTS	CORONARY ARTERY BYP W VEIN &ARTERY GRAFT 2 VEIN	33518
CORONARY ARTERY BYPASS, USING VENOUS GRAFT(S) AND ARTERIAL GRAFT(S), 3 VENOUS GRAFTS	CORONARY ARTERY BYP W VEIN &ARTERY GRAFT 3 VEIN	33519
CORONARY ARTERY BYPASS, USING VENOUS GRAFT(S) AND ARTERIAL GRAFT(S), 4 VENOUS GRAFTS	CORONARY ARTERY BYP W VEIN &ARTERY GRAFT 4 VEIN	33521
CORONARY ARTERY BYPASS, USING VENOUS GRAFT(S) AND ARTERIAL GRAFT(S), 5 VENOUS GRAFTS	CORONARY ARTERY BYP W VEIN &ARTERY GRAFT 5 VEIN	33522
CORONARY ARTERY BYPASS, USING VENOUS GRAFT(S) AND ARTERIAL GRAFT(S), 6 OR MORE VENOUS GRAFTS	CORONARY ARTERY BYP W VEIN &ARTERY GRAFT 6 VEIN	33523
REDO OFF PUMP CORONARY ARTERY BYPASS PROCEDURE OR VALVE PROCEDURE	ROPRTJ CAB/VALVE PX > 1 MO AFTER ORIGINAL OPERJ	33530
CORONARY ARTERY BYPASS, USING ARTERIAL GRAFT(S), SINGLE ARTERIAL GRAFT	CAB W/ARTL GRF 1 ARTL GRF	33533
ROBOTIC TECAB W/MIDCAB	CAB W/ARTL GRF 2 C ARTL GRFS	33534
CORONARY ARTERY BYPASS, USING ARTERIAL GRAFT(S), 3 CORONARY ARTERIALGRAFTS	CAB W/ARTL GRF 3 C ARTL GRFS	33535
CORONARY ARTERY BYPASS, USING ARTERIAL GRAFT(S), 4 OR MORE CORONARYARTERIAL GRAFTS	CAB W/ARTL GRF 4/> C ARTL GRFS	33536
CAROTID ENDARTERECTOMY WITH CABG	C ENDARTERCOMY OPN ANY METH	33572

Cardiac Surgery Quality Performance Indicators

Appendix-B – Major Cardiac surgery Procedure CPT Codes

Other Major Procedures: The determination of procedure type is based on index surgery.
Guidance: This may not be an exhaustive CPT list. Please consider the following when identifying eligible cases.

STS Major Procedures*:*
Procedures listed in *Appendix A (ISOL CABG)*
Isolated Aortic Valve Replacement (AV Replace)
Aortic Valve Replacement + CABG (AV Replace + CABG)
Mitral Valve Replacement + CABG (MV Replace + CABG)
Isolated Mitral Valve Repair (MV Repair)
Mitral Valve Repair with surgical Atrial fibrillation ablation
Mitral Valve Repair with surgical ASD closure
Mitral Valve Repair with surgical Tricuspid Valve Repair
Mitral Valve Repair + CABG (MV Repair + CABG)
Isolated Mitral Valve Replacement (MV Replace)
Mitral Valve Replacement with surgical Atrial fibrillation ablation
Mitral Valve Replacement with surgical ASD closure
Mitral Valve Replacement with surgical Tricuspid Valve Repair

Procedure Name	CPT Description	CPT Codes
VALVULOPLASTY, AORTIC VALVE, OPEN, WITH CARDIOPULMONARY BYPASS, SIMPLE (IE, VALVOTOMY, DEBRIDEMENT, DEBULKING, AND/OR SIMPLE COMMISSURAL RESUSPENSION)	VLVP AORTIC VALVE OPN W/CARD BYP	33390
VALVULOPLASTY, AORTIC VALVE, OPEN, WITH CARDIOPULMONARY BYPASS	VLVP AORTIC VALVE OPN W/INFL OCCLUSION	33391
REPLACEMENT, AORTIC VALVE, WITH CARDIOPULMONARY BYPASS, WITH PROSTHETIC VALVE OTHER THAN HOMOGRAFT OR STENTLESS VALVE	RPLCMT A-VALVE PROSTC XCP HOMOGRF/STENT< VALVE	33405
REPLACEMENT, AORTIC VALVE, WITH CARDIOPULMONARY BYPASS, WITH ALLOGRAFTVALVE (FREEHAND)	RPLCMT A-VALVE ALGRFT VALVE FRHAND	33406
REPLACEMENT, AORTIC VALVE, WITH CARDIOPULMONARY BYPASS, WITH STENTLESSTISSUE VALVE	RPLCMT A-VALVE STENT< TISS VALVE	33410
AVR W/ AORTIC ANNULUS ENLARGEMENT	RPLCMT AORTIC VALVE ANNULUS ENLGMENT NONC SINUS	33411
REPLACEMENT, AORTIC VALVE, WITH TRANSVENTRICULAR AORTIC ANNULUSENLARGEMENT (KONNO PROCEDURE)	RPLCMT A-VALVE KONNO PROCEDURE	33412
AVR W/ TRANSLOCATION AUTOLOGOUS PULMONARY VALVE	RPLCMT A-VALVE ROSS PX	33413
ROBOTIC MITRAL VALVE REPAIR MAJOR	VALVOTOMY MITRAL VALVE CLOSED HEART	33420
VALVOTOMY, MITRAL VALVE, OPEN HEART, WITH CARDIOPULMONARY BYPASS	VALVOTOMY MITRAL VALVE OPN HRT W/CARD BYP	33422
MIN INVASIVE ASD / VSD REPAIR / CP BYPASS	VLVP MITRAL VALVE W/CARD BYP	33425
VALVULOPLASTY, MITRAL VALVE, WITH CARDIOPULMONARY BYPASS, WITH PROSTHETIC RING	VLVP MITRAL VALVE W/CARD BYP W/PROSTC RING	33426

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VALVULOPLASTY, MITRAL VALVE, WITH CARDIOPULMONARY BYPASS, RADICAL RECONSTRUCTION, WITH OR WITHOUT RING	VLVP MITRAL VALVE W/CARD BYP RAD RCNSTJ +-RING	33427
REPLACE - MITRAL VALVE W/ CARDIOPULMONARY BYPASS	REPLACEMENT MITRAL VALVE W/CARDIOPULMONARY BYP	33430
REPAIR OF NON-STRUCTURAL PROSTHETIC VALVE DYSFUNCTION WITHCARDIOPULMONARY BYPASS (SEPARATE PROCEDURE) AORTIC	RPR NON-STRUCTURAL PROSTC VALVE DYSF CARD BYP	33496

***Major* Procedures Exclusions:**
AVR+MVR,
Pulmonic Valve Replacement
Tricuspid Valve
VSD (ventricular Septal Defect), ASD (Atrial Septal Defect
SVR (Surgical Ventricular Restoration)
Heart Transplants
Aortic Aneurysm procedures (Ascending Aorta, Aortic Arch, Descending Aorta, and Thoracoabdominal Aorta)
Ventricular Assist Devices (VADS)
All transcatheter procedures
ECMO as an isolated procedure
Pericardiectomy as an isolated procedure

Appendix C: Anti-platelet medication Shafafiya Drug Codes (not limited to):

B46-0676-06138-01	L40-1430-01904-01	C08-0428-00492-01	O14-4758-00501-01
B46-0676-05512-01	O94-1430-01904-01	N71-0411-00492-01	C07-0427-00502-01
Y62-8978-01349-01	A36-1430-01904-01	C17-0428-00492-01	AJ4-0947-01252-02
N84-1284-01349-01	CW6-4098-10364-02	F71-6886-06977-01	B08-0947-01252-01
H21-2856-01349-01	C82-4098-01905-01	L35-8784-07411-01	AJ4-0947-01253-02
U48-7769-07633-01	C81-4098-01905-01	A36-7469-07411-01	L54-0947-01253-01
J82-5818-01350-01	L40-1430-01906-01	T24-7469-07411-01	B08-0947-01253-01
A37-1045-01350-01	C82-4099-01903-01	C05-0428-00493-01	L91-5188-05514-01
Q51-7074-01350-01	Q77-8250-08064-01	H21-2693-00493-01	H21-5189-05514-01
L91-4179-01351-01	C82-0410-01907-01	C08-0426-00494-01	A49-4269-05514-01
L91-4179-01352-01	P89-0146-01907-01	L33-1437-00494-01	D54-A292-10826-01
D86-0310-01352-01	C83-7588-01907-01	T24-0426-00494-01	X02-8303-08091-01
F91-1628-01352-01	C83-0146-01907-01	H21-2693-00494-01	G94-4539-00077-01
J23-3725-01352-01	P76-9513-00497-01	C07-0182-00505-01	W96-2562-02095-02
H95-1049-01352-01	C07-0430-00498-01	P95-0426-06377-01	I65-2562-02095-01
B10-1047-01352-01	O70-0429-00498-01	L16-0426-06377-01	M21-2562-02095-01
J21-5173-01352-01	L16-0426-00499-01	L56-0426-06188-01	F58-2562-02095-01
C42-1397-01352-01	P95-6910-00499-01	K52-0425-00503-01	A36-7468-02096-01
J30-1048-01352-02	P76-9514-00500-01	M22-1121-01185-01	M21-2562-02096-01
J30-1048-01352-01	H21-2693-00500-02	L31-1069-00504-01	B56-7468-02096-01
L72-1046-01352-01	B30-0416-00500-01	H21-2693-00495-01	F79-2562-02096-01
N84-1284-01352-01	H21-2693-00500-04	C07-0426-00496-01	A68-0145-05532-01

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| N37-4057-01352-01 | H21-2693-00500-01 | K51-3761-00497-01 | N72-0424-00497-01 |
| E40-1588-04663-01 | C07-0428-00492-01 | | |

Appendix D: Beta-blockers Shafafiya Drug Codes (not limited to):

B48-5138-00510-01	U05-7262-07261-01	T20-6964-07037-01	B11-0351-04774-01
D22-0442-00511-01	I67-7262-07261-01	K14-6964-07037-01	B08-0351-04774-01
H07-3707-00511-02	J21-0650-00731-01	T20-3254-07408-01	A84-4343-04774-01
H07-3707-00511-01	I67-1104-00729-01	G33-3250-03773-01	H77-0556-04774-01
H37-5136-00511-02	N37-0807-00729-01	B08-7197-00986-01	H77-4343-04774-01
H37-5136-00511-01	H95-9925-00729-01	F83-1119-00986-01	B48-2524-04774-02
H21-5140-00511-01	G93-4766-00729-01	C42-7269-00987-01	AJ1-8961-04774-01
J10-0593-00511-01	B55-0648-00729-01	E74-1396-00987-01	H21-0808-04774-02
O70-5244-00511-01	B55-0648-00730-01	K54-0824-00987-01	H21-0808-04774-01
F91-2202-00511-01	G93-4766-00730-01	Q77-7196-00987-01	B48-2524-04774-01
A54-2468-00511-01	J23-6710-00730-01	B08-7197-00988-01	A41-4343-04775-01
J82-0450-00511-01	N37-0807-00730-01	K54-0824-00988-01	L73-4343-04775-01
B48-5138-00511-01	F91-6450-00730-01	E74-1396-00988-01	N78-4932-05294-01
A82-0657-00511-02	J82-6327-00730-01	C42-7269-00988-01	B08-8433-05295-01
A82-0657-00511-01	J30-7058-00730-01	Q77-7196-00988-01	B09-4932-05295-01
B08-0340-00511-01	J21-0649-00730-01	A84-2801-03246-01	N78-4932-05295-01
J82-0450-00511-02	I67-1106-00730-01	O01-5260-03246-01	L16-4932-05295-01
J23-3592-00511-01	H95-9925-00730-01	R65-5260-03246-01	K67-5661-03301-01
J61-3722-00511-01	U05-7262-07262-01	Q72-5260-03246-01	G93-2854-03301-01
H95-0443-00511-01	I67-7262-07262-01	B31-5260-03246-02	A96-7141-03301-01
B48-5137-00514-01	U05-7262-07264-01	B31-5260-03246-01	I72-5200-05523-01
D22-0442-00512-01	I67-7262-07264-01	B31-5260-03247-01	I72-5200-05524-01
O70-5244-00512-01	J21-0650-00732-01	A84-8905-03247-02	A77-2094-00712-01
J23-3592-00512-01	I67-1103-00732-01	A84-2801-03247-01	A77-1089-00760-01
B48-5138-00512-01	G93-4767-00732-01	B31-5260-03247-02	A65-0496-00762-01
F91-2202-00512-01	H92-7012-07058-01	O65-2802-03248-03	G93-5687-01951-01
B48-5138-00513-01	H92-7013-07059-01	O65-2802-03248-01	I86-3334-01951-01
B08-0340-00513-01	K54-0646-00730-01	C30-2802-03248-01	H65-7053-01951-01
A82-0657-00513-01	B97-0672-02153-03	G45-2801-03248-01	A96-7079-01951-01
A54-2468-00513-01	U27-1722-02153-01	C31-2801-03248-01	S25-7736-01951-01
H95-0443-00513-01	C31-1721-02153-01	A53-2801-03248-02	I72-1135-01951-01
H07-3707-00513-01	B97-0672-02153-01	A53-2801-03248-01	S25-7736-01951-02
H37-5136-00513-02	B97-1721-02153-01	F61-5260-03248-01	Q41-7279-01952-01
J61-3722-00513-01	C30-1722-02153-01	W55-8261-03248-01	I75-1135-01952-01
J23-3592-00513-01	E22-0672-02153-01	U44-2802-03248-01	Q94-7230-05516-01
J82-0450-00513-02	BO0-1722-09748-02	L58-2801-03248-01	L40-5197-05516-02
H21-5140-00513-01	E22-0672-02154-01	B08-3471-03967-01	I72-5199-05516-01

O70-5244-00513-01	B97-1721-02154-01	B10-7439-03967-01	I27-7230-05517-01
F91-2202-00513-01	U26-1722-07618-01	H77-0556-04776-01	I72-5199-05517-01
J82-0450-00513-01	I59-3544-04004-01	B08-0351-04778-01	I75-5199-05518-01
J10-0593-00513-01	I59-3544-04005-01	B48-2524-04778-01	J45-3788-05519-01
H37-5136-00513-01	DC5-A022-04003-02	AJ1-8961-04778-01	G93-3901-05520-01
D22-0442-00513-01	Y26-6276-04003-02	N65-9161-04778-02	E34-5197-05520-01
A60-0609-00693-01	I86-6276-04003-01	H21-0808-04778-01	A96-0333-05520-01
A64-0608-00694-01	I59-3543-04003-01	H77-0556-04778-01	O17-5196-05520-01
L42-4596-00695-01	H95-A379-04003-02	B11-4343-04778-01	D86-3883-05520-01
A64-0608-00693-01	B48-0586-03769-01	B46-2524-04778-01	L42-3810-05520-01
I67-1104-06589-01	B46-0586-03769-01	A41-4343-07409-01	E34-5197-05521-01
AM8-9289-06589-01	C04-3254-03769-01	A36-8420-07409-01	G93-3901-05521-01
S47-1104-06589-01	R43-7402-07369-01	N79-4343-07409-01	O17-5196-05521-01
T87-7818-06589-01	K72-3254-03768-01	N78-8886-08884-01	N92-7230-05521-01
N37-0807-00728-01	J45-3013-03768-01	B48-2309-04779-01	L42-3810-05521-01
J82-6327-00728-01	D56-3014-03770-01	B97-4343-04777-01	O62-7317-05521-01
G93-4766-00728-01	R43-7402-07370-01	C30-4343-04777-01	A96-0333-05521-01
F91-6450-00728-01	K14-3254-03771-01	P51-6791-04777-01	A58-1173-05521-01
I67-1105-00728-01	J45-3013-03772-01	N65-9161-04774-02	D86-3883-05521-01
J21-0649-00728-01	O94-6964-07037-02	B48-2524-04774-03	I76-5198-05522-01
K54-0646-00728-01	T35-6964-07037-02	H21-0808-04774-03	A63-1529-05596-01

Appendix E: Lipid-lowering statin Shafafiya Drug Codes (not limited to):

J30-6200-04970-01	P05-9263-04971-01	J10-5460-00522-01	K34-0718-00297-01
J82-7326-04970-01	M08-7327-04971-01	H68-0448-00522-01	K34-0718-00298-01
R43-7129-04970-01	P76-6208-04971-01	H21-2952-00522-01	K34-0718-00299-01
P28-7329-04970-01	H68-7456-04971-01	K20-2955-00522-01	K34-0718-00300-01
P22-6209-04970-01	J30-6200-04971-01	Q51-6780-00522-01	A68-2978-04553-01
P74-7328-04970-01	J82-7326-04971-01	G93-0431-00522-01	A68-2978-04554-01
I86-6325-04970-01	H17-6412-04971-01	R43-A253-00522-01	J23-3705-05102-01
F91-6223-04970-01	I86-6325-04971-01	DC5-A169-00522-02	I72-5793-05102-01
Y26-6325-04970-02	B48-1158-04971-01	CF2-A480-00522-02	A49-4850-05102-01
I53-6229-04970-01	F91-9629-04971-01	L81-5242-00522-01	H21-4829-05102-01
M08-7327-04970-01	BI2-9692-04971-02	N01-5248-00522-01	L42-4828-05102-01
P76-6208-04970-01	T52-7534-04971-01	N37-0451-00522-01	N37-5458-05102-01
T52-7534-04970-02	F91-6223-04971-01	N68-5243-00522-01	D60-4820-05102-02
R43-7129-04973-01	P74-7328-04971-01	Q40-6415-00522-01	D60-4820-05102-01
P74-7328-04973-01	H95-6842-04971-01	M08-2961-00522-01	G93-4827-05102-01
J21-6230-04973-01	P59-8394-04971-01	J21-4966-00522-01	M08-4830-05102-01
J23-7657-04973-01	L95-8457-08323-02	L69-5332-00522-01	L22-4831-05102-01
J30-6200-04973-01	R43-A569-08323-01	F91-0449-00521-01	K54-4821-05102-01

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B48-1158-04973-01	R89-9692-04972-02	J10-5460-00520-01	I72-5793-05103-01
P22-6209-04973-01	E45-7127-04972-01	H68-0448-00520-01	G93-4827-05103-01
T52-7534-04973-02	P22-6209-04972-01	J21-4966-00520-01	H21-4829-05103-01
P18-6597-04973-01	P76-6208-04972-01	M08-2961-00520-01	D60-4820-05103-01
P59-8394-04973-01	R43-7129-04972-01	Q40-6415-00520-01	J23-3705-05103-01
F91-9629-04973-01	P18-6597-04972-01	K39-2955-00520-01	L42-4828-05103-01
H07-6589-04970-01	B48-1158-04972-01	N37-0451-00520-01	M08-4830-05103-01
J10-9804-04970-01	J23-7657-04972-01	DC5-A160-00520-01	N37-5458-05103-01
B48-1158-04970-01	J30-6200-04972-01	CF2-A480-00520-01	D60-4820-05103-02
J23-7657-04970-01	J21-6230-04972-01	D86-5888-00520-01	J10-5548-05103-01
H17-6412-04970-01	I53-6229-04972-01	L81-5242-00520-01	L22-4831-05103-01
H17-6412-04970-02	F91-9629-04972-01	K39-2955-00520-02	K54-4821-05103-01
J21-6230-04970-01	J10-9804-04972-01	G59-0462-00520-01	G93-4827-05104-01
R89-9692-04970-02	F91-6223-04972-01	C42-0444-00520-01	L42-4828-05104-01
F91-9629-04970-01	R43-A569-08322-01	H95-2954-00520-01	J23-3705-05104-01
E45-7127-04970-01	L95-8457-08322-02	H21-2952-00520-01	I72-5793-05104-01
H95-6842-04970-01	P76-6208-04973-01	C42-0444-00522-01	H21-4829-05104-01
Q51-6566-04970-01	F91-6223-04973-01	F91-0449-00522-01	M08-4830-05104-01
N37-7128-04970-01	EY2-A458-11140-02	D86-5888-00522-01	D60-4820-05104-01
P18-6597-04970-01	CC0-A458-11099-01	I75-5964-06162-01	A19-7285-07287-01
R43-A569-11254-01	CC0-A458-09302-01	H68-0448-00523-01	A19-7285-07288-01
EZ3-A445-11151-01	P05-9263-09302-01	D86-5888-00523-01	Q51-7283-07286-01
EZ3-A445-11152-01	P05-9263-04970-01	F93-2955-00523-01	Q51-7283-02260-01
H21-6228-04973-01	I52-8774-04970-02	I75-5964-06163-01	I75-2531-02260-01
L95-8457-08321-02	S81-7330-04970-01	L69-5332-00520-01	CD4-9754-02261-01
R43-A569-08321-01	P59-8394-04970-01	F91-0449-00520-01	I75-2531-02261-01
E45-7127-04971-01	Y62-8479-04970-01	R43-A253-00520-01	I75-2531-02262-01
Y26-6325-04971-02	H21-6228-04970-01	G93-0431-00520-01	D03-2963-04666-01
I52-8774-04971-02	H68-7456-04970-01	Q51-6780-00520-01	B11-8955-04666-01
H07-6589-04971-01	K39-2955-00521-01	N01-5248-00520-01	B08-4237-04666-01
J10-9804-04971-01	Q51-6780-00521-01	N68-5243-00520-01	AJ4-4237-04666-02
Q51-6566-04971-01	DC5-A169-00521-02	I75-5964-06160-01	N57-4237-04666-01
Y62-8479-04971-01	G93-0431-00521-01	J10-5460-00521-01	D02-2963-04664-01
R43-7129-04971-01	R43-A253-00521-01	H95-2954-00521-01	B11-4237-04665-01
N37-7128-04971-01	D86-5888-00521-01	H68-0448-00521-01	O94-4237-04665-01
J23-7657-04971-01	CF2-A480-00521-01	J21-4966-00521-01	A36-4237-04665-01
J21-6230-04971-01	G59-0462-00521-01	C42-0444-00521-01	D03-2963-04665-01
H21-6228-04971-01	K39-2955-00521-02	Q40-6415-00521-01	J45-2886-02436-01
P22-6209-04971-01	L81-5242-00521-01	N68-5243-00521-01	J45-2886-02437-01
P18-6597-04971-01	H21-2952-00521-01	L69-5332-00521-01	J45-2886-02438-01
I53-6229-04971-01	N37-0451-00521-01	M08-2961-00521-01	
S81-7330-04971-01	N01-5248-00521-01	K34-0718-00295-01	
P28-7329-04971-01	I75-5964-06161-01	K34-0718-00296-01	

Cardiac Surgery Quality Performance Indicators

Appendix F: Prophylactic antibiotics Shafafiya Drug Codes (not limited to):

1382-4361-002	M78-5886-08141-02	1375-4392-005	F76-5771-01100-01
1494-4362-001	P18-7092-05792-01	H21-2686-01058-01	F76-5771-01103-01
A85-5438-05789-01	Y41-5439-05791-02	H21-2686-01062-01	H21-0867-01101-01
A85-5438-05791-01	1595-1805-005	1272-6273-001	H21-0867-01103-01
B28-5755-05792-01	1595-1805-006	A54-0847-01022-01	I52-3153-01098-01
B74-5886-05790-01	1595-1805-007	A54-0847-01026-01	I52-3153-01103-01
B74-5886-05790-02	K34-1022-01313-01	BV9-9693-01022-02	N37-5782-01103-01
B74-5886-05792-01	K67-1243-01322-01	G45-0849-01023-01	1697-2298-001
B74-5886-05793-01	O28-1024-01322-01	J09-0868-01022-01	1529-2947-002
D88-5439-05794-01	O28-1024-01322-02	J09-0868-01025-01	1529-2947-001
DC5-A537-05791-02	1631-5222-002	K12-3992-01023-01	B08-3164-01048-01
G45-4979-05789-01	1631-5222-001	K12-3992-01024-01	F21-0858-01048-01
G45-4979-05791-01	1631-5222-003	A54-3127-01098-01	L61-0858-01048-01
H21-5437-05789-01	1422-4542-003	A54-3127-01104-01	N37-0858-01048-01
H21-5437-05791-01	1422-4542-002	A72-5791-01098-01	N37-8948-01048-01
H45-5436-05790-01	1422-4542-004	A72-5791-01103-01	1501-2908-001
H45-5436-05793-01	1375-4392-009	F67-5771-01099-01	1501-2908-003
J30-6800-05791-01	1375-4392-002	F76-5771-01098-01	1501-2908-002

Summary of Changes 2024

KPI #	Changes
CS007- CS010	• Removed Numerator Exclusion: Isolated CABG surgery

CS008 & CS015	• Added Denominator Exclusions
	  • Discharges against medical advice
	  • Patients discharged/transferred to another acute care facility
	  • Patients with discharge disposition of death
	• Revised Inclusion Guidance: If patient has multiple readmissions within 30 days of index discharge, only count the **_first_** readmission (instead of "as single readmission"

CS012 & CS019	• Removed Superficial SSI criteria
CS014	• Added Numerator Exclusion: Re-op to non-operative space, non-primary operative space, non-cardiac reasons. i.e. gangrenous toe amputation, trach, carotid endarterectomy, Rhythm disturbance requiring permanent pacemaker.
CS028 & CS029	• Revised Numerator to: Scheduled follow-up appointment)
CS032	• Retired
Appendices	• Removed Appendix-C – Major Cardiac surgery Procedure CPT Codes on these KPIs CS027, CS028, CS029, CS031, CS033, CS035, CS036-replaced with (Appendix -B) • Moved up the Drug Appendices to Appendix C-F