National Adult Cardiac Surgery Audit (NACSA)

Overview of Quality Improvement (QI) metrics

1 Overview of QI metric: Waiting times for elective coronary artery bypass grafting (CABG)

QI Metric Description/Name	**Elective CABG waiting time – from angio to operation date**
Why is this important?	Patients should not wait any longer than necessary for elective coronary artery surgery that is expected to improve both symptoms and/or life expectancy.
QI theme	Safety and Effectiveness
What is the standard to be met?	NHS England target is 18 weeks (126 days) from GP referral to treatment. This includes several other steps in the pathway prior to final referral for surgery, meaning that the portion from the performance of diagnostic investigations to the treatment should be considerably less than 18 weeks. The finding of an abnormality on the coronary angiogram is usually the point that triggers the consideration of a referral for cardiac surgery. This time (from angiogram to operation) is the portion of the patient pathway that surgical teams can influence. A target of 84 days means that the surgical team has taken 67% (12 weeks) of the referral-to-treatment time.
Key references to support the metric	NHS England Commissioning target
Numerator	All patients undergoing elective first time CABG
Denominator	N/A

2 Overview of QI metric: Urgent CABG waiting times

QI Metric Description/Name	**Waiting time for urgent CABG – from angio to operation date**
Why is this important?	Most patients with Non-ST Elevation Myocardial Infarction (NSTEMI) requiring revascularisation with CABG should be operated on during the same

	hospital admission (ESC/EACTS Revascularisation Guidelines 2018).[1] Patients usually require five days antiplatelet therapy cessation prior to surgery to reduce the risks of bleeding at surgery. The optimal window for surgery is between five to seven days following diagnosis (and referral). Longer waits for surgery as an inpatient uses considerable hospital resources and blocks ward beds from allowing other admissions.
QI theme	Safety and Effectiveness
What is the standard to be met?	The Commissioning for Quality and Innovation framework (CQUIN) target in 2016 recommended that 100% of patients should meet the target of undergoing urgent CABG within seven days of angiography.[2]
Key references to support the metric	ESC/EACTS Revascularisation Guidelines[1] CQUIN target[2]
Numerator	All patients requiring urgent first time CABG
Denominator	n/a

3 Overview of QI metric: Proportion of urgent CABG performed within seven days of coronary angiography

QI Metric Description/Name	**Proportion of urgent CABG performed within seven days of coronary angiography**
Why is this important?	Most patients with NSTEMI requiring revascularisation with CABG should be operated on during the same hospital admission (ESC/EACTS Revascularisation Guidelines 2018).[1] This is because the highest risk of a further MI or death is in the first month following the initial presentation. Timely surgery is therefore associated with better patient outcomes. Patients usually require 5 days antiplatelet therapy cessation prior to surgery to reduce the risks of bleeding at surgery. The optimal window for surgery is between five to seven days following diagnosis (and referral). Longer waits for surgery as an inpatient uses considerable hospital resources and blocks ward beds from allowing other admissions.
QI theme	Safety and Effectiveness

What is the standard to be met?	The Commissioning for Quality and Innovation framework (CQUIN) target (2016) recommended that 100% of patients should meet the target of undergoing urgent CABG within seven days of angiography.[2] In the 2022 NACSA report no NHS centre met this target. A revised target of 75% was set for this audit cycle.
Key references to support the metric	ESC/EACTS Revascularisation Guidelines[1] CQUIN target[2]
Numerator	All patients requiring urgent first time CABG receiving surgery within seven days of the diagnostic angiogram.
Denominator	All patients requiring urgent first time CABG.

4 Overview of QI metric: Day-of-Surgery Admission (DOSA) rates for elective cardiac surgery

QI Metric Description/Name	**Proportion of patients with DOSA (day-of-surgery admission) for elective CABG**
Why is this important?	Admission to hospital 24 hours prior to elective surgery is inefficient, unnecessary and an expensive use of ward beds. Units should have processes and protocols in place to allow thorough pre-operative assessment (including for anaesthesia) without the need for admission the day before an operation. These processes may also reduce the need for last minute theatre cancellations (due to picking up other comorbidities in a more timely way).
QI theme	Effectiveness
What is the standard to be met?	At least 50% of elective patients should be admitted on the day of surgery.
Key references to support the metric	Get it Right First Time (GIRFT) report 2018.[3]
Numerator	All patients undergoing elective CABG who were admitted on the same day as the day of surgery
Denominator	All patients undergoing elective first time CABG

5 Overview of QI metric: Re-opening for bleeding rates and blood transfusion rates after CABG

QI Metric Description/Name	Reopening for Bleeding and Blood Transfusion rates after CABG
Why is this important?	Bleeding during and after cardiac surgery is common. Usually this is relatively minor and controlled by the surgeon with the aid of drugs given by the anaesthetic team during the procedure. In more serious cases it can lead to a patient needing to return to theatre after an operation for re-exploration to control the bleeding and remove any blood clots that have accumulated. Blood transfusions may be required to treat anaemia or to replace excess blood loss due to bleeding (using red blood cells), or to help treat blood clotting abnormalities (by promoting blood clotting with blood plasma or platelets).
QI theme	Safety and Effectiveness
What is the standard to be met?	Based on the data from the last three years, the best units (top quartile) have re-opening rates for bleeding of less than 1%. The bottom quartile has re-opening rates of more than 2.7%. This is the second year that blood transfusion rates have been collected. No target has been set, but the data presented aim to indicate current practice in the UK.
Key references to support the metric	The Get it Right First Time (GIRFT) report 2018 recommended blood transfusion rates were collected within the audit.[3]
Numerator	All patients undergoing first time CABG requiring reopening for bleeding or a blood transfusion.
Denominator	All patients undergoing first time CABG.

6 Overview of QI metric: Proportion of patients discussed by a Multi-Disciplinary Team (MDT) prior to cardiac surgery

QI Metric Description/Name	**Proportion of patients discussed pre-operatively at a quorate Multi-Disciplinary Team (MDT) meeting**
Why is this important?	Treatment of patients with cardiac disease is complex and there are often several treatment options available (for example tablets, PCI or CABG for the treatment of coronary disease). The role of the MDT is to assess each patient and to provide a consensus on the best treatment options. This requires the collective experience of a quorate team of specialists across cardiology, cardiac surgery and other related specialties in order to optimise care.
QI theme	Safety and Effectiveness
What is the standard to be met?	All non-emergency patients in whom either PCI or CABG is an option should be referred through a quorate MDT. All non-emergency patients undergoing Valve surgery should be referred through a disease-specific quorate MDT.
Key references to support the metric	Get it Right First Time (GIRFT) report for Cardiology (2021)[4] Joint BCS/SCTS Consensus guidance for cardiac MDT meetings[5]
Numerator	Proportion of CABG, AVR and Mitral operations discussed at a quorate MDT
Denominator	All non-emergency cardiac operations

References

[1] Neumann F J, Sousa-Uva M, Ahlsson A, et al. 2018 ESC/EACTS Guidelines on myocardial revascularization, *European Heart Journal*, Volume 40, Issue 2, 07 January 2019, Pages 87–165, https://doi.org/10.1093/eurheartj/ehy394

[2] CQUIN IM1 Reducing cardiac surgery non-elective inpatient waiting (2016). https://www.england.nhs.uk/wp-content/uploads/2016/03/im1-reduc-cardiacsurgry-non.pdf

[3] GIRFT Programme National Specialty Report - Cardiothoracic Surgery (March 2018) https://gettingitrightfirsttime.co.uk/wp-content/uploads/2018/04/GIRFT-Cardiothoracic-Report-1.pdf

[4] GIRFT Programme National Specialty Report – Cardiology (February 2021) https://www.gettingitrightfirsttime.co.uk/wp-content/uploads/2021/09/Cardiology-Jul21k-NEW.pdf

[5] Archbold A, Akowuah E, Banning AP et al. Getting the best from the Heart Team: guidance for cardiac multidisciplinary meetings. *Heart* 2022;108:e2. http://dx.doi.org/10.1136/heartjnl-2021-320510