

# Enhancing Timely Diagnosis and Intervention in Carotid Stenosis

A stroke-led closed-cycle audit in collaboration with Radiology and Vascular Surgery

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## BACKGROUND & AIMS

Clinical problem. NICE NG128 recommends carotid endarterectomy (CEA) within 14 days of symptom onset for patients with 50-99% symptomatic carotid stenosis. Timely treatment depends on rapid neurological assessment, carotid imaging and vascular surgical coordination.

Audit focus. The pathway was assessed from specialist neurological assessment through carotid duplex imaging, vascular referral and CEA, with particular attention to Radiology service performance.

### AIMS

- Assess compliance with the 14-day CEA target.
- Assess carotid duplex pathway performance against the 24-48-hour recommendation.
- Identify pathway bottlenecks and implement multidisciplinary quality improvement.

## METHODS

Design: Retrospective audit of 70 consecutive patients undergoing CEA for symptomatic carotid stenosis.

Baseline period: April 2023 - April 2025.

Data collected: presenting symptoms, FAST positivity, initial hospital type and detailed pathway intervals.

Primary outcome: CEA within 14 days of symptom onset.

Secondary outcome: compliance with urgent carotid imaging pathway.

### CLOSED-CYCLE QI

- Baseline audit
- Findings presented & recommendations implemented
- Re-audit in October 2025
- Measure improvement in guideline compliance

## BASELINE AUDIT: KEY FINDINGS

43%

30 / 70  
achieved CEA ≤14 days

CEA within 14 days 43%

Delayed imaging request >24 h 20%

Delayed imaging performance >24 h 24%

### WHERE DID TIME GO?

Neurologist → imaging request

Imaging request → performance

Neurologist → vascular assessment

Vascular assessment → surgery

Main bottlenecks: weekend imaging access and theatre / surgical scheduling.

Median 0 days

Median 0.5 days

Median 1 day

Median 9 days

## PATIENT & SAFETY PROFILE

66%  
male

74 y  
median age

4.3%  
overall mortality

0 perioperative strokes  
Excellent safety outcome.

### Presenting symptoms

Stroke 49%

TIA 33%

Ocular symptoms 19%

## OTHER BASELINE FINDINGS

- 20% presented late (>7 days); all lacked FAST symptoms.
- FAST-positive patients presented earlier, supporting pathway efficiency.
- Direct tertiary hospital presentation achieved superior outcomes versus district hospital referrals.

## QUALITY IMPROVEMENT INTERVENTIONS

- Findings were presented at a multidisciplinary / teaching session, highlighting delayed imaging requests, weekend service limitations and the prolonged interval between vascular assessment and surgery.

### AREAS FOR IMPROVEMENT

- 7-day carotid duplex service to reduce weekend access gaps.
- Automated imaging requests following specialist neurological assessment.
- Protected weekend reporting to support timely pathway progression.
- Dedicated CEA theatre slots to reduce surgical scheduling delays.
- Integrated multidisciplinary pathway coordination across Neurology, Radiology and Vascular Surgery.

## RE-AUDIT: OCTOBER 2025

### Guideline compliance improved

43% → 64%

CEA within 14 days  
+21 percentage points

87% → 91%

Duplex within 2 days  
91% in the re-audit

### IMPACT OF THE CLOSED-CYCLE APPROACH

The re-audit demonstrated a 21-percentage-point improvement in CEA delivery within 14 days, from 43% to 64%, moving performance above the 60% benchmark referenced in the original audit.

Imaging performance also remained strong, with 91% receiving carotid duplex within two days of symptom onset in the re-audit.

Key message:  
multidisciplinary pathway change translated into measurable improvement.

## REFERENCES

- NICE. Stroke and transient ischaemic attack in over 16s: diagnosis and initial management. NICE guideline NG128. Updated 13 April 2022.
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- Bonati LH, et al. European Stroke Organisation guideline on endarterectomy and stenting for carotid artery stenosis. Eur Stroke J. 2021;6:1-XLVII.