Despite the prior enthusiasm for carotid revascularization, contemporary data on nationwide trends in rates and outcomes CEA and CAS are limited.

To describe US national trends in performance and outcomes of CEA and CAS among Medicare beneficiaries from 1999 to 2014.
Design and methods

- Serial cross-sectional analysis of Medicare beneficiaries aged 65 years or older from 1999 to 2014
- Medicare Inpatient and Denominator files
- Spatial mixed models adjusted for age, sex, and race were fit to calculate county-specific risk-standardized revascularization rates
- Mixed models were fit to assess trends in outcomes after adjustment for demographics, comorbidities, and symptomatic status

Numbers and rate for CEA declined over time

Numbers and rate for CAS increased, then declined over time

Treated patients were sicker

- Increase in the proportion of symptomatic patients \((P < 0.001)\)
  - CEA: 13.9% in 1999 to 15.5% in 2014
  - CAS: 14.4% in 1999 to 25.9% in 2014
- Increase in the prevalence of several comorbidities and surgical risk factors (eg, hypertension, kidney failure, depression, and diabetes) (all \(P < 0.001\))

Geographical variations in revascularization rates remained unchanged over time

1-year Target Lesion Revascularization rates

- During the 16-year study period
  - 7.4% underwent a second carotid procedure after CEA
  - 6.1% underwent a second carotid procedure after CAS
  - within 1 year of their index procedure
- Median time to the second procedure was 46 (IQR, 28-75) days after CEA and 53 (IQR, 27-121) days after CAS
Key outcomes improved after CEA over time

30-day stroke or death
- Overall: 4.4% → 3.1%
- Symptomatic: 6.0% → 5.2%
- Asymptomatic: 4.2% → 2.7%

Key outcomes improved, then returned to early levels after CAS

30-day stroke or death
- Overall: 7.0% → 4.8% → 7.0%
- Symptomatic: 11.0% → 8.5% → 10.8%
- Asymptomatic: 6.3% → 4.3% → 5.7%

Conclusions
- Numbers and rate of carotid revascularization procedures have decreased among Medicare beneficiaries
- Operated patients have become sicker
- Key outcomes have
  - Improved consistently for CEA
  - Improved, but then returned to early levels for CAS