

# Valve sparing aortic root replacement in England: trends and outcomes from a national registry analysis

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# Objective

**Valve-sparing aortic root replacement (VSRR) has been performed for over 40 years with excellent long-term outcomes for a range of pathologies reported in numerous studies**

**However, there is evidence that widespread standardized adoption of VSRR has been variable. The objective of this study was to assess trends in VSRR surgery activity and outcomes across England**

# Methods

Data from the UK National Adult Cardiac Surgery Audit (NACSA) were obtained

Patients who underwent aortic root surgery between 2011 and 2019 were included, and patients who underwent VSRR were identified

Geographical regions in England were defined with the Kruskal-Wallis test used to assess the rate of VSRR as a proportion of all aortic root surgery

The primary outcome of the study was in-hospital mortality

# Patients and characteristics

A total of 618 VSRR were included across 40 centres

VSRR represented 8.3% (618/7472) of all aortic root surgery

The majority of VSRR (78.1%, 483/618) were performed electively

The median age at operation was 51 (IQR 37-63)

The median EuroSCORE II was 0.86 (IQR 0.61, 1.67)



# **In-hospital outcomes**

**The overall in-hospital mortality was 2.8% (17/618),**

**The elective mortality was 1.4% (7/483).**

**The overall rate of permanent stroke was 2.6% (16/618)**

**The permanent stroke rate for elective patients was 1.7% (8/483)**



# Overall VSRR activity

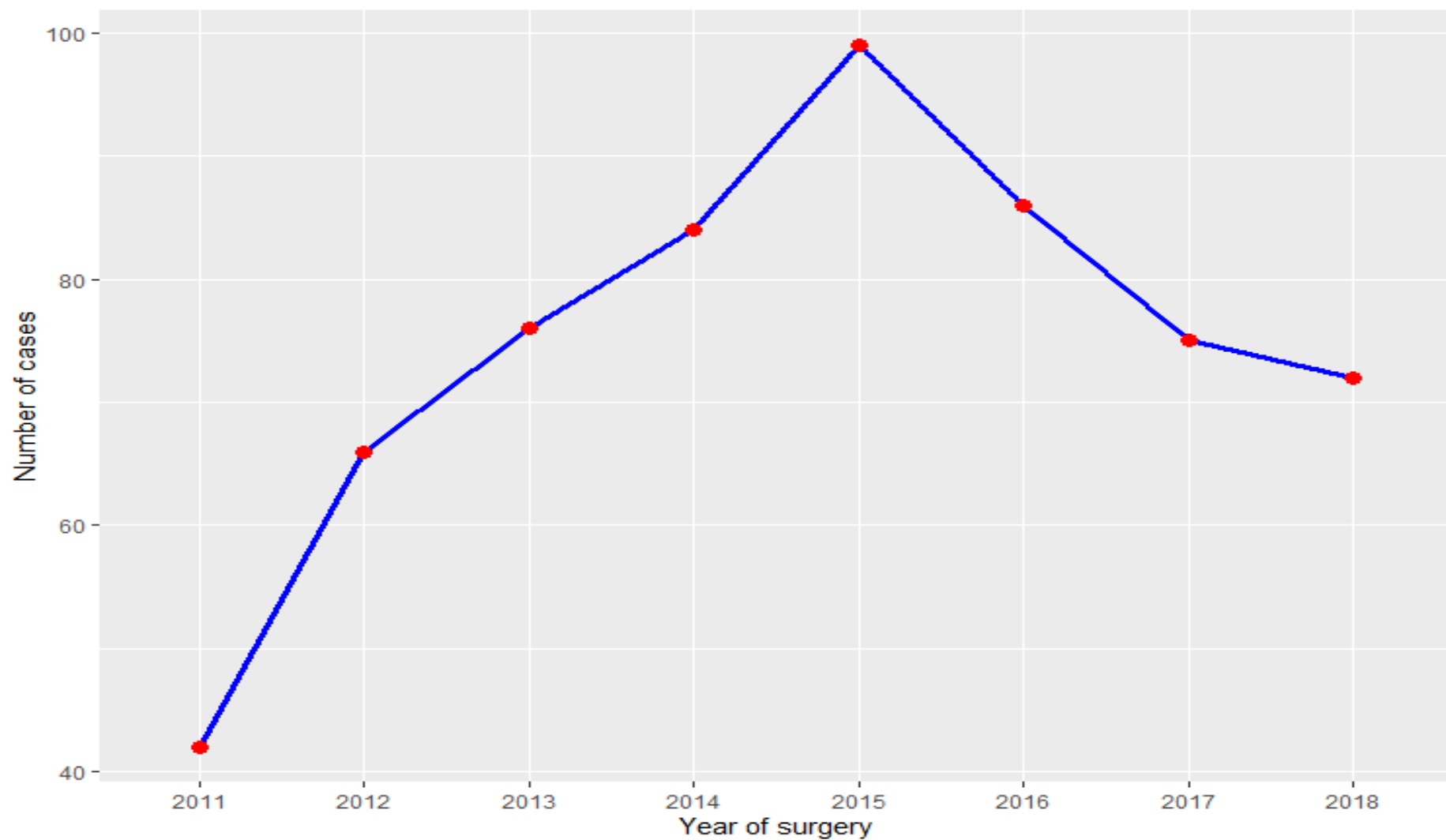
The mean number of cases performed per year was 68.7 (SD 24.6)

The mean number of cases per consultant surgeon per year was 4.6 (SD 7.5)

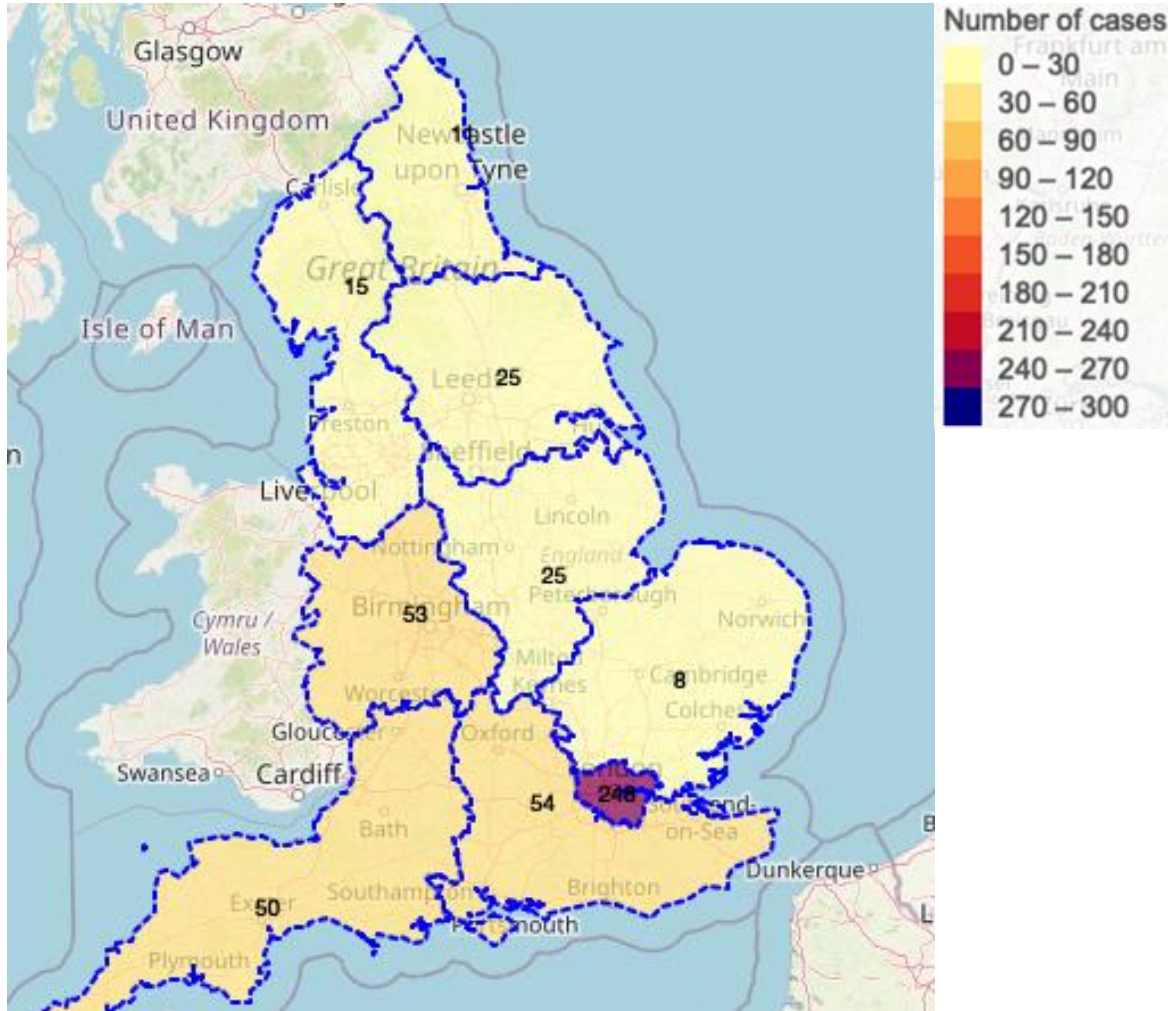
The number of cases per year across all centres was 42 in 2011

The most cases (98) were in 2015 but this had reduced to 72 in the last year of the study

# VSRR activity in England over time



# Geographical variation



**This plot demonstrates significant geographical variation in access to elective VSRR**

**50% of all elective cases were performed in Greater London**

**In some regions less than one case/year was performed**



# Conclusions

**This analysis of national registry data demonstrates a significantly lower overall rate of VSRR as a proportion of all aortic roots compared to other national series**

**Despite all included centres performing at least one VSRR during the study period, there was evidence of significant geographical variation in access to VSRR**

**Despite relatively low consultant and hospital volumes, short-term clinical outcomes were good. Further work is required to ensure equity of access to VSRR across England**