

NCAP

NATIONAL CARDIAC AUDIT PROGRAMME

NICOR

Transcatheter Aortic Valve Implantation (TAVI) Registry

2024 Summary Report
(2022/23 data)

BCIS



Transcatheter Aortic Valve Implantation (TAVI) - Report at a glance

2022/23 data unless otherwise stated.



32 NHS centres in England, Wales and Northern Ireland are providing TAVI procedures



7,669 TAVI procedures performed in 2022/23, a **13%** rise compared with 2021/22



25% of TAVI procedures are performed as urgent cases



94% of TAVI procedures are performed with conscious sedation



96% of TAVI procedures are performed via percutaneous femoral arterial access



3 days median length of stay for elective procedures



<2% major complications following a TAVI procedure

- **1.4%** stroke
- **1.0%** major bleeding
- **1.4%** major vascular access complications
- **1.8%** moderate-severe AR after TAVI implant



7.4% requirement for a pacemaker following a TAVI procedure (down from **15%** in 2015/16).



Data completeness

1. All centres should provide complete data, particularly on demographic characteristics of patients, discharge data and indices of valve function after TAVI. This is essential for benchmarking and risk-adjusted outcome assessment.

Volume of TAVI cases

2. Centres with lower case numbers are encouraged to increase the number of procedures they undertake to be in line with national trends.
3. Centres should review the proportion of urgent cases they undertake and aim to understand the reasons for their local rates.

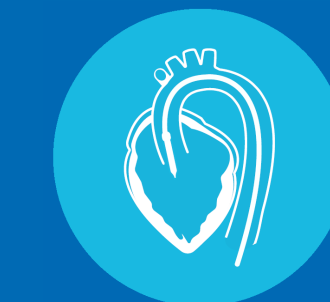
Quality of care

4. Centres are encouraged to maintain percutaneous transfemoral access under conscious sedation as the approach for the majority of TAVI procedures and centres with lower rates are encouraged to increase rates.
5. Centres with long length of stays for elective TAVI patients should learn from hospitals where they now routinely achieve short length of stay.
6. Centres should focus on reducing total length of stay for urgent cases.

Outcomes

7. Centres should strive to provide accurate and complete data for procedural outcomes such as death, stroke, bleeding, and the rates of moderate to severe aortic regurgitation and pacemaker.

This report presents selected key findings from the national audit of transcatheter aortic valve implantation (TAVI)



The Transcatheter Aortic Valve Implantation (TAVI) audit is part of the National Cardiac Audit Programme (NCAP) which is run by the National Institute for Cardiovascular Outcomes Research (NICOR).

This report details activity for TAVI procedures for England & Wales and Northern Ireland (Scotland no longer participates within the UK audit). It covers both NHS hospitals and also private centres that have agreed data sharing with NICOR.

The key focus of the audit is quality assurance and improvement. The report summarises the number of patients being treated, where this treatment is delivered, the quality of the care and the outcomes for patients. Relevant national or international guidelines and standards are shown so that hospital performance can be benchmarked. Details around the quality improvement (QI) metrics can be found [here](#).

This report is of value to a wide range of stakeholders but importantly it allows patients and their relatives to better understand TAVI practice and its outcomes in the UK. **The slides in the report are interactive so you can select and explore the data that interest you.**

The latest data are for the 2022/23 financial year (April 2022 to March 2023), which is presented alongside trends for the last 10 years. All summary statistics are based on data that are self-reported by hospitals and unadjudicated unless otherwise stated.

The TAVI audit relies on the active contribution of all participating UK TAVI centres. Detailed information about more than 7,000 patients has been diligently entered by hospitals, queried and cleaned before analysis is undertaken by the NICOR team. We are very grateful to all the staff at the contributing centres for their time and patience in developing this audit.

We will continue to work closely with TAVI centres, patients and other stakeholders to improve the quality of audit data and how this is used to improve the delivery of high quality TAVI care in the UK.

NICOR TAVI audit team

Transcatheter Aortic Valve Implantation (TAVI) is a procedure provided by 32 NHS and eight private hospitals in England, Wales and Northern Ireland



NHS TAVI Centres in England,
Wales and Northern Ireland

32



Private TAVI Centres in England

8



NHS TAVI Centres in Scotland

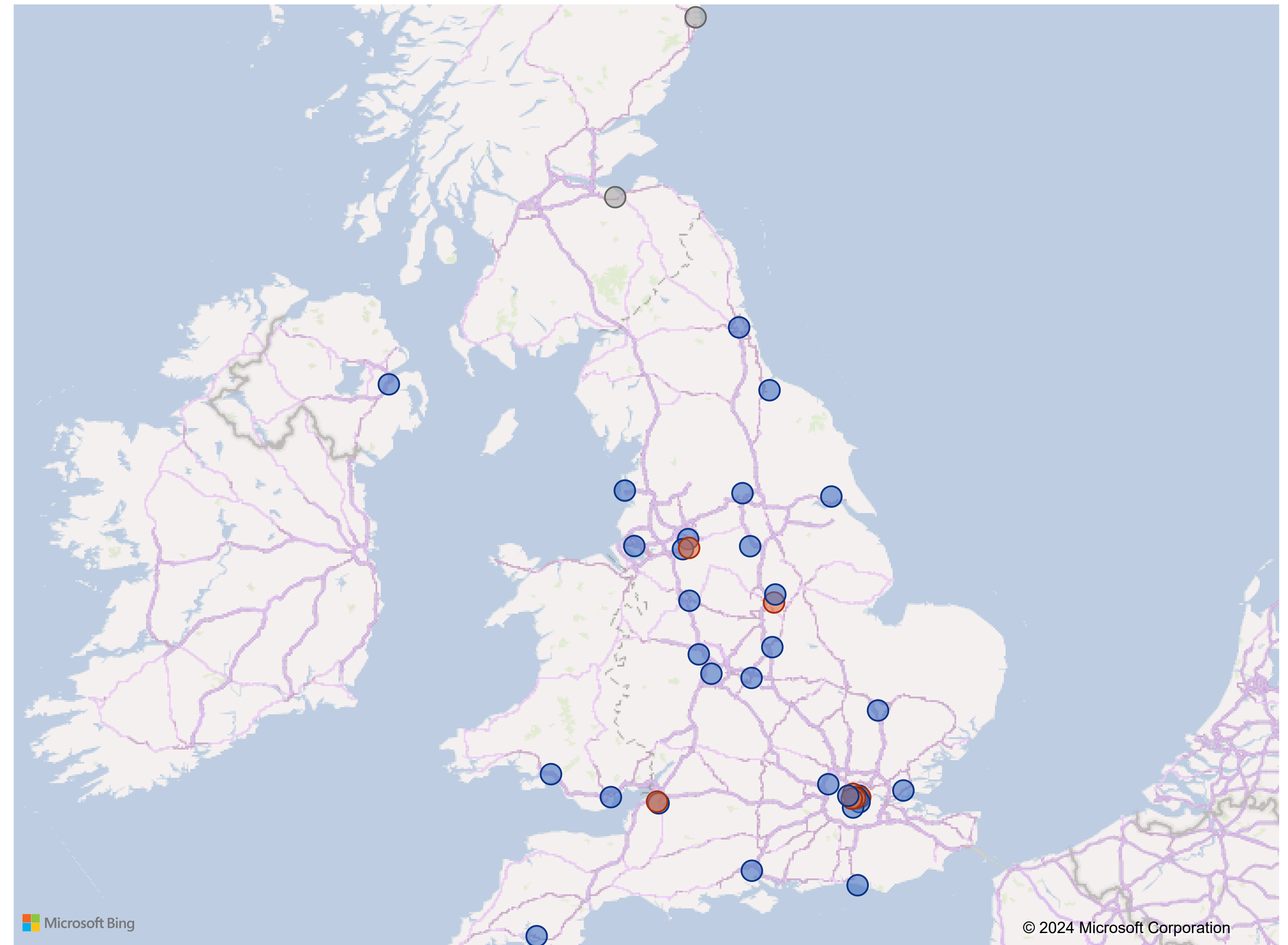
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The audit summarises data from 32 NHS TAVI centres in England, Wales and Northern Ireland and from four of eight private centres.

Data from Scotland are not included.

TAVI centres in the UK



Data completeness is generally good across the audit data but needs to be improved for a number of key fields, especially to assist benchmarking

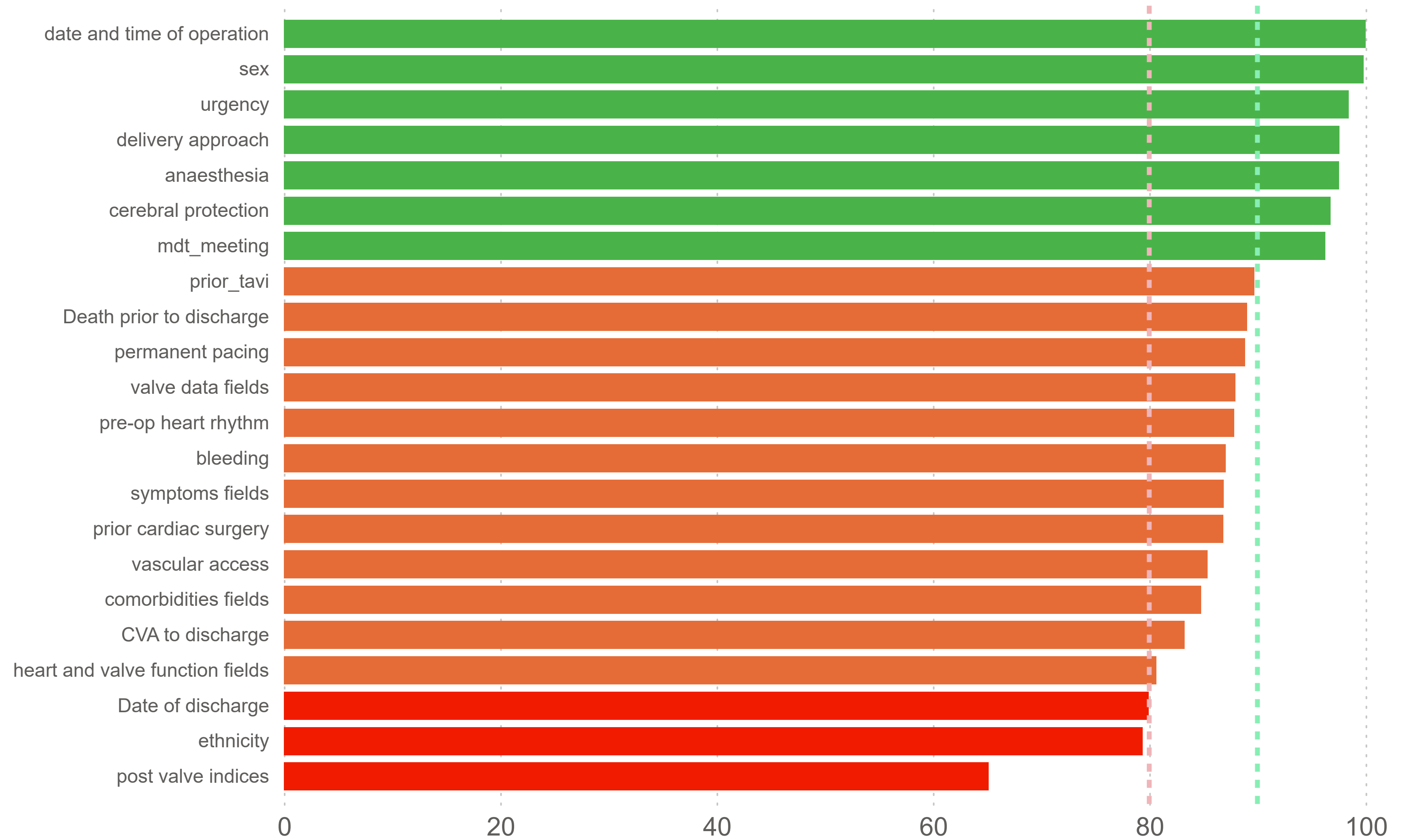


Average data completeness across all the data fields in the TAVI audit is 88%.

There are some fields where data completeness is comprehensive but some important fields such as ethnicity, date of discharge, and post TAVI valve indices which are completed less well.

Incomplete submitted data can limit the ability to draw conclusions with confidence.

Percentage completeness of data variables in the TAVI audit (2022/23)





Profile of TAVI procedures

- All cases
- All cases monthly
- TAVI and isolated AVR
- TAVI procedures by ICB/HB
- TAVI procedures by cardiac network
- Urgency of cases by hospital
- TAVI procedures by sex
- Age of TAVI patients
- Age of TAVI patients by hospital
- TAVI procedures by age groups
- Age of TAVI patients by sex
- TAVI urgency by sex
- Ethnicity of TAVI patients
- Prior surgery
- Prior bioprosthetic valve
- Prior TAVI

Procedural data

- Conscious sedation
- Delivery approach
- Delivery approach other than perc TF
- Cerebral protection
- LOS for elective cases
- LOS for elective cases by hospital
- Elective LOS distribution by hospital
- LOS for urgent cases
- LOS for urgent cases by hospital
- Urgent LOS distribution by hospital

Outcomes

- In-hospital mortality
- 30-day mortality
- In-hospital stroke
- Major bleeding
- Major vascular access complications
- Aortic regurgitation
- Implantation of PPM

The number of TAVI procedures continues to increase



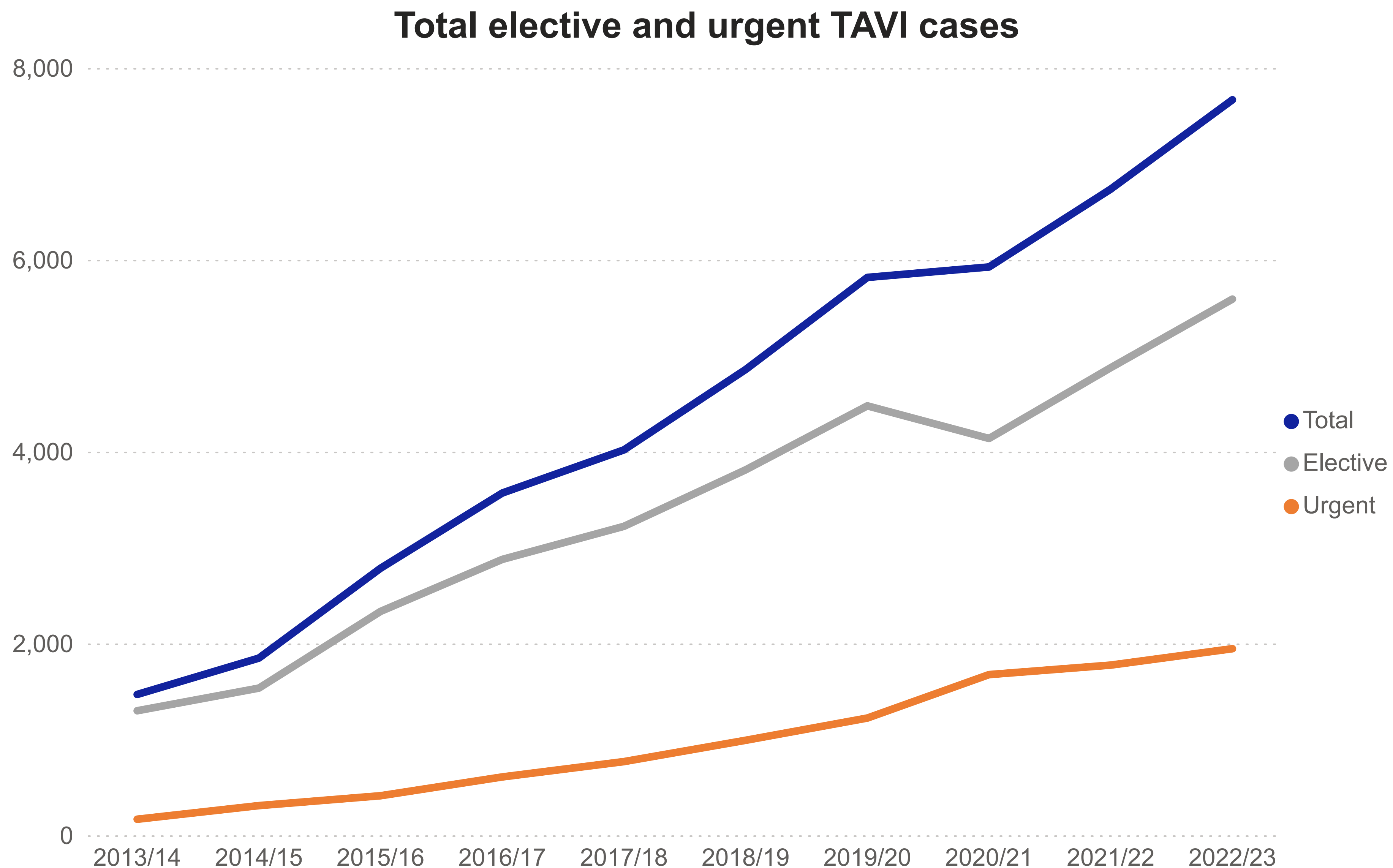
The total number of TAVI cases in 2022/23 was 7,669 compared with 6,738 in 2021/22, an increase of 13%.

Urgent TAVI procedures increased as a proportion of total cases during the COVID-19 pandemic and this trend has continued.

Urgent cases accounted for 25% of total cases in 2022/23, up from 17% in 2016/17.

There are 114 TAVI procedures per million population in the UK.

Note: Urgent includes cases classified as urgent, emergency or salvage (data field 7.06).



The number of elective TAVI cases each month vary more widely than for urgent procedures

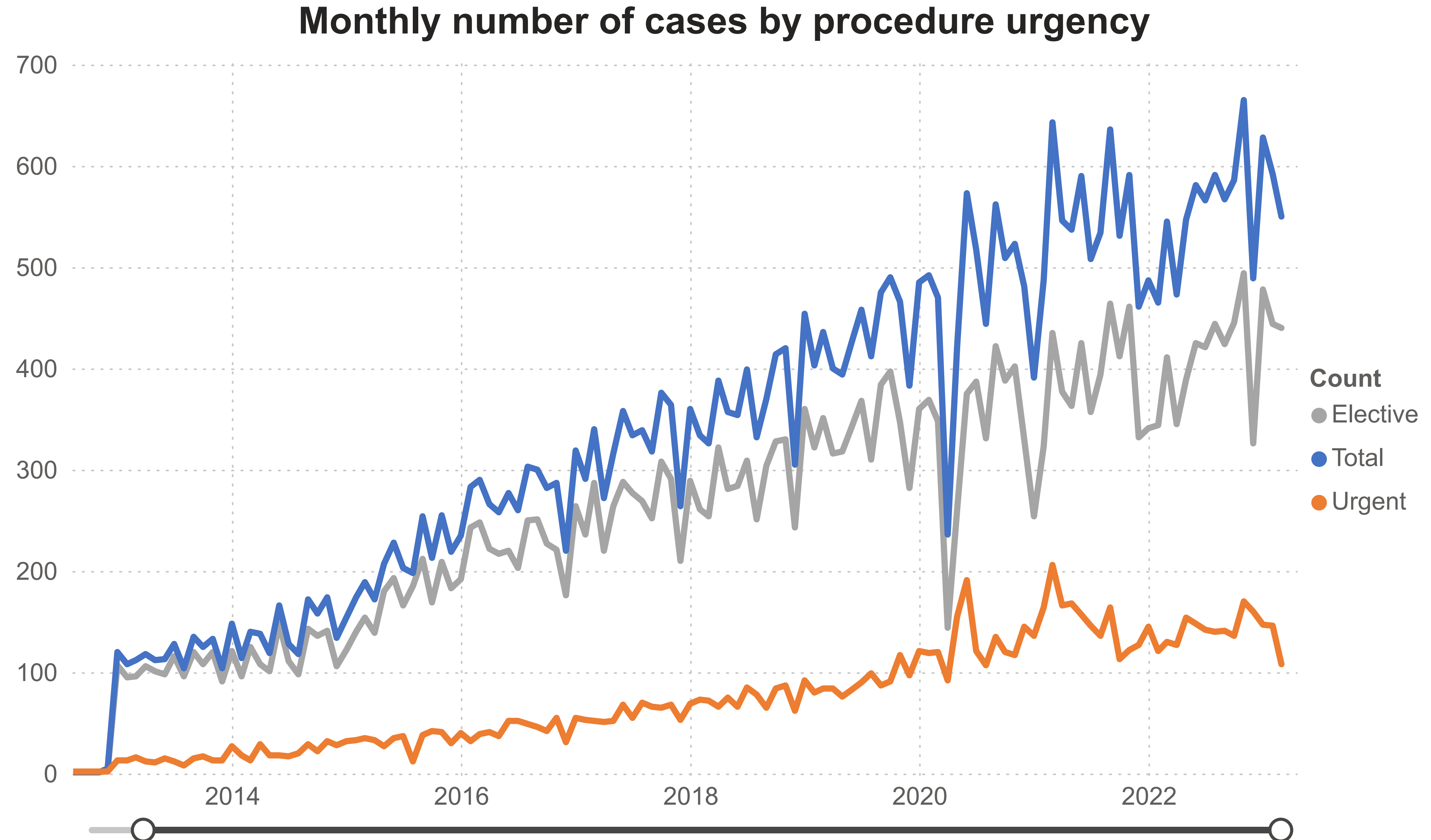


The number of monthly TAVI cases was dramatically affected by the two waves of the COVID-19 pandemic.

There were sharp drops in the volume of elective cases and two spikes in the number of urgent procedures.

Since then, monthly urgent case numbers have remained broadly stable at a rate slightly higher than before the pandemic.

The number of elective cases showed slightly more volatility in 2022/23, ranging between 323 and 490 cases per month.



TAVI has enabled more patients with aortic stenosis to be treated despite fewer surgical procedures



Patients with aortic stenosis, a narrowing of the valve through which blood passes from the major pump of the heart to the body, are treated by either:

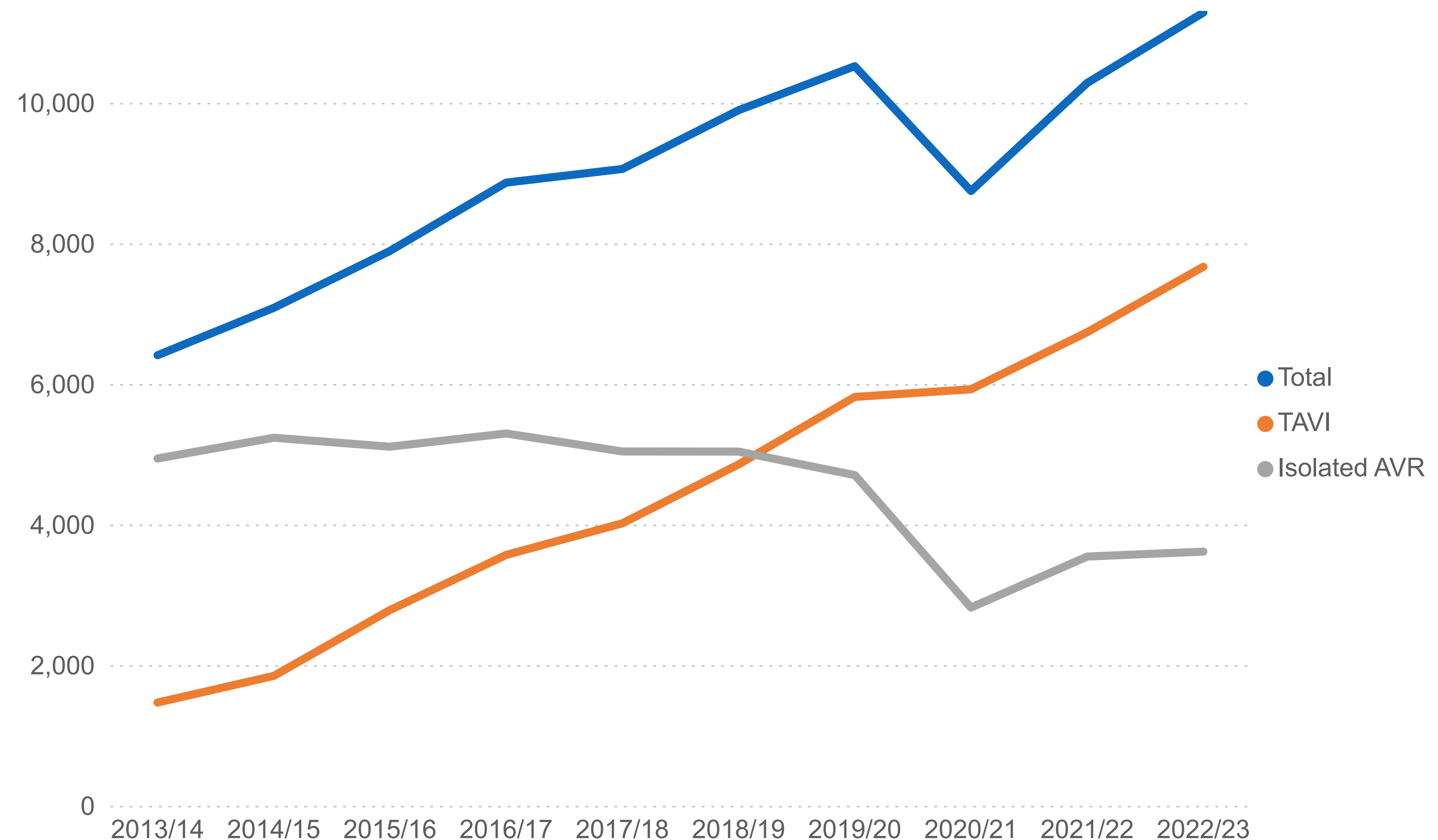
- TAVI
- Surgical aortic valve replacement (AVR)

Isolated AVR procedures are when only the aortic valve is replaced. In other patients, an additional surgical procedure such as coronary artery bypass grafting may be needed. The total number of AVR and TAVI procedures has increased steadily and is now greater than prior to the COVID-19 pandemic.

Since 2018/19, the majority of aortic valve surgery cases involve a TAVI procedure rather than isolated AVR.

The number of isolated AVR cases in 2022/23 was down by a third compared with 2016/17.

Surgical aortic valve cases by type of procedure



Most TAVI centres performed at least 200 procedures in 2022/23



UK hospitals undertook an average of 219 TAVI cases in 2022/23.

Three quarters of hospitals increased the number of TAVI cases they performed.

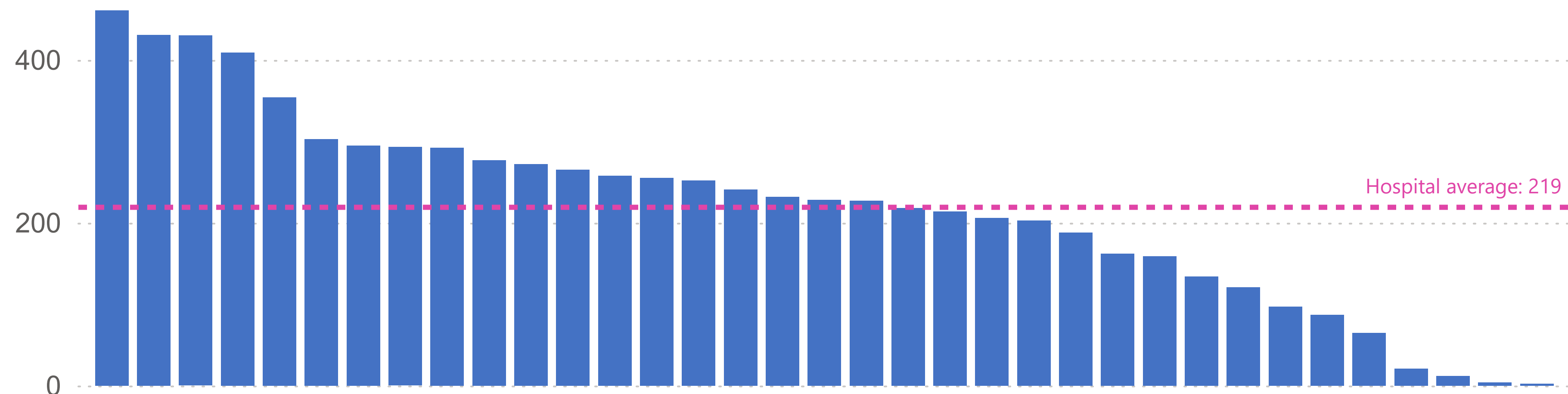
Five UK hospitals performed more than 300 TAVI cases while seven undertook fewer than 100 cases.

Selecting a country/Cardiac Network and/or a hospital below shows the total cases for those selections over time.

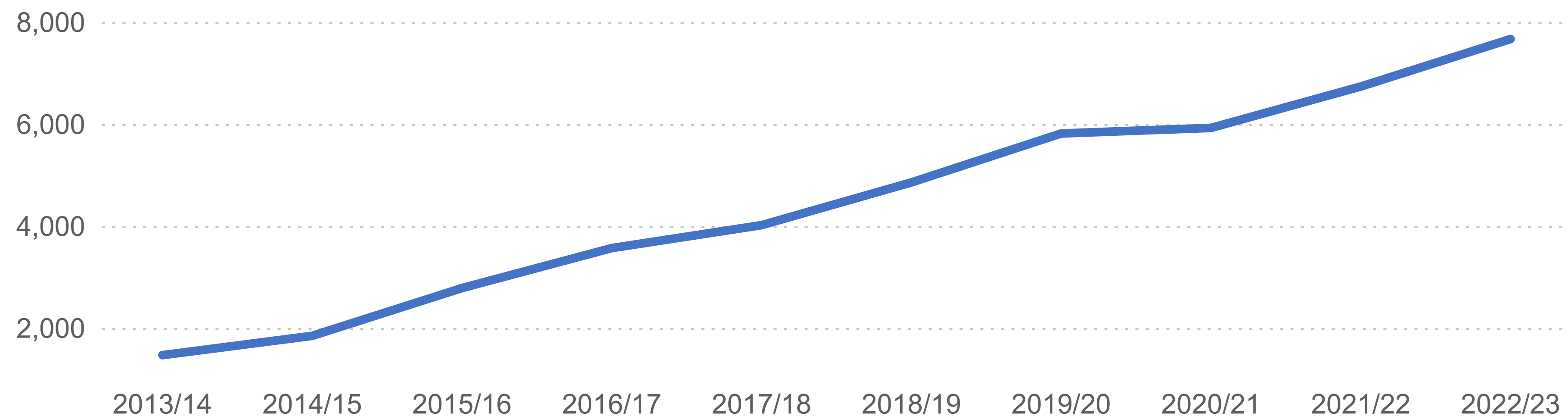
Select country/Cardiac Network

Select hospital

Total TAVI cases by hospital (2022/23)



Total TAVI cases



The rate of TAVI cases per million population in some ICBs/HBs is more than six times that in others



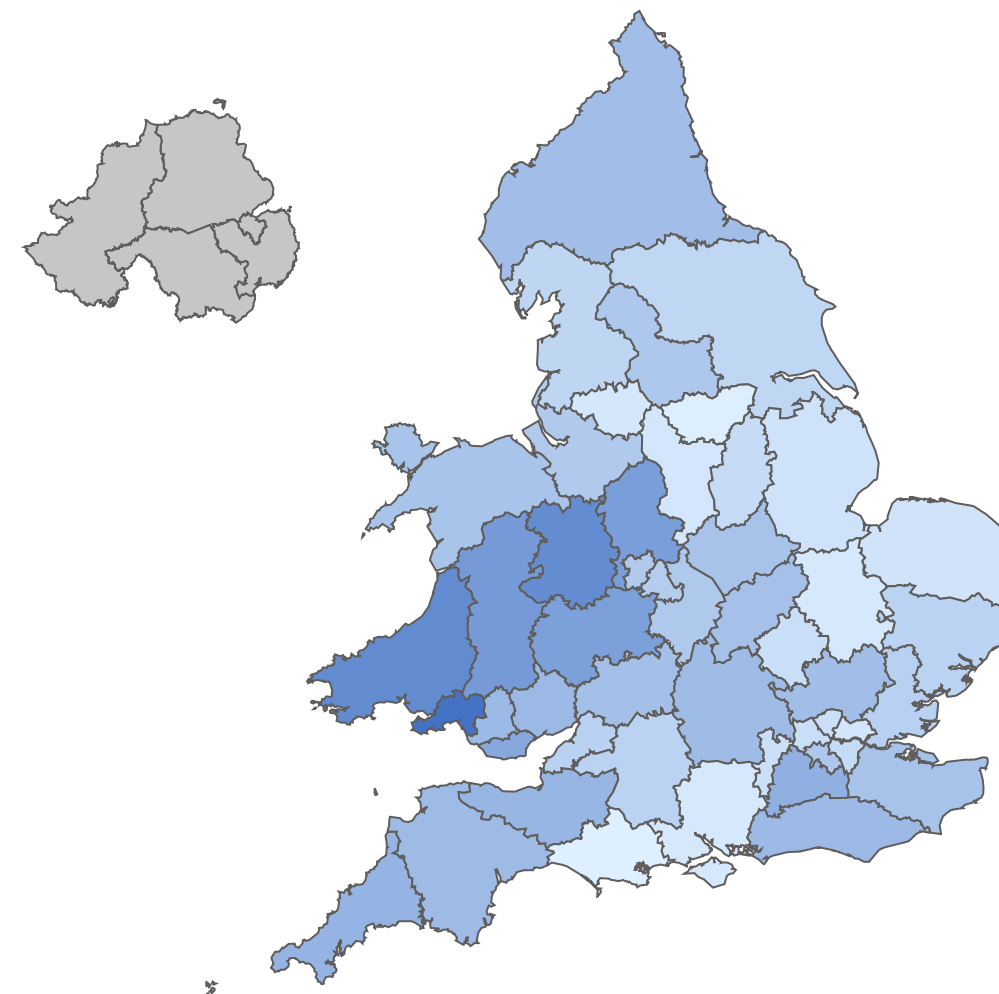
These maps show a wide variation in the 2022/23 rate of TAVI procedures per million population (pmp) across the 42 Integrated Care Boards (ICBs) in England and seven University Health Boards (HBs) in Wales:

- Total procedures varied from 49pmp in Dorset ICB to 295pmp in Swansea Bay University HB.
- Elective procedures varied from 36pmp in Cambridgeshire and Peterborough ICB to 190pmp in Swansea Bay University HB.
- Urgent procedures varied from 1pmp in South Yorkshire ICB to 100pmp in Swansea Bay University HB.

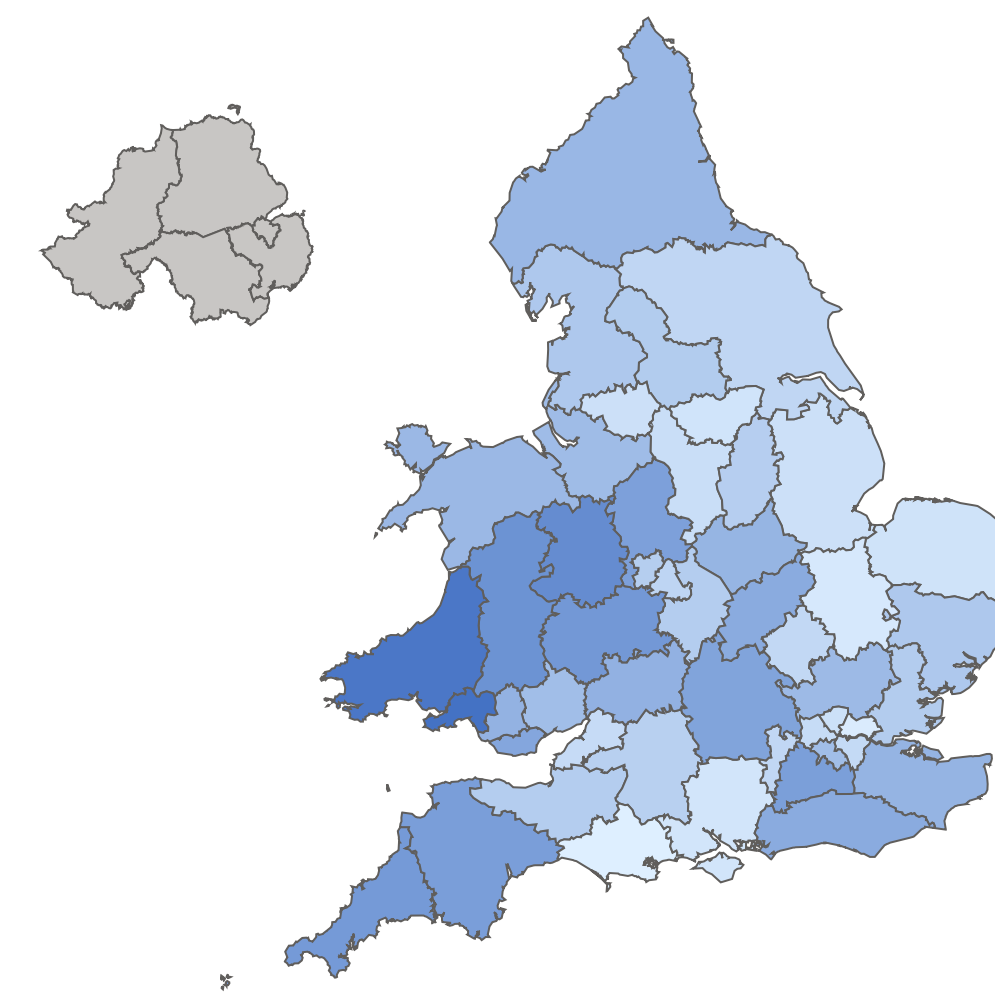
The variation is only partially explained by the length of time individual hospitals have been operating their TAVI programmes. The data are not age-standardised and other factors may influence the results.

Note: Maps based on patient home location. Northern Ireland hospitals do not submit patient home postcode information. Private centres are also excluded.

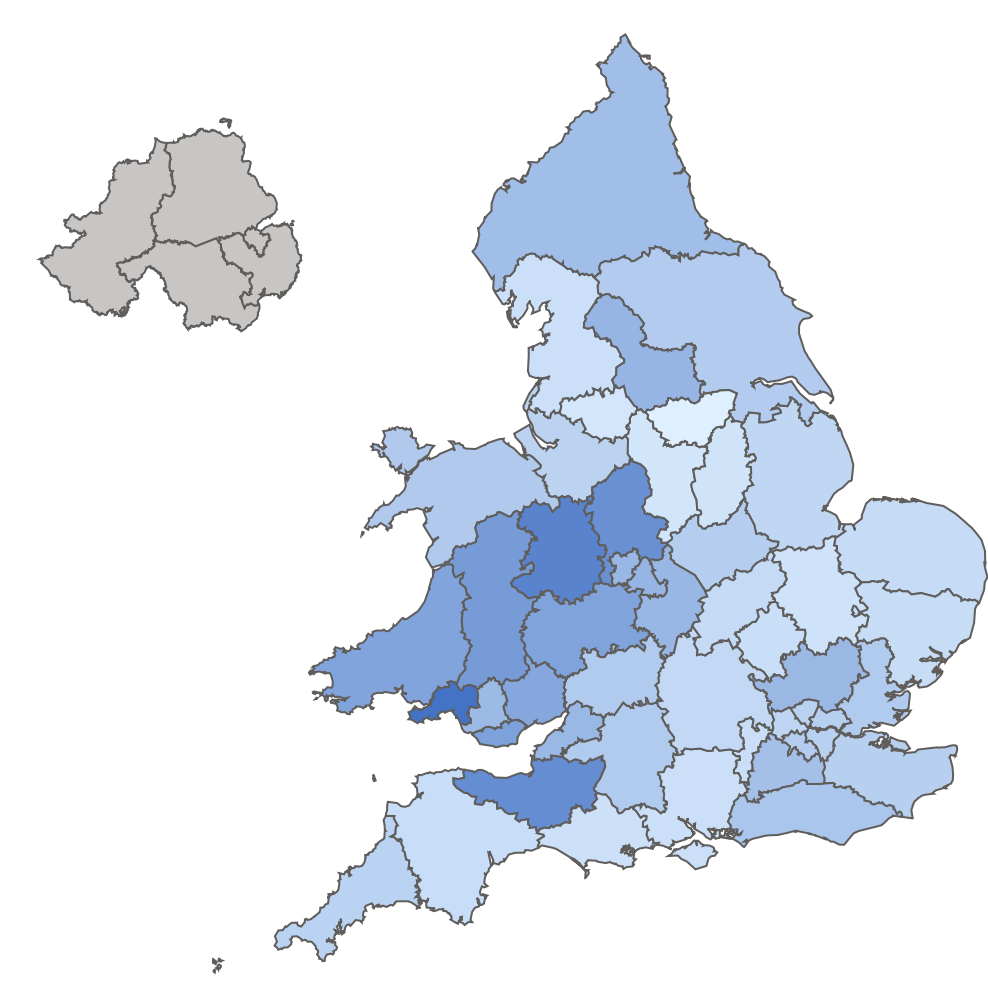
Total TAVI cases per million population by ICB/HB (2022/23)



Elective TAVI cases per million population by ICB/HB (2022/23)



Urgent TAVI cases per million population by ICB/HB (2022/23)



The rate of TAVI cases per million population across Cardiac Networks varies considerably



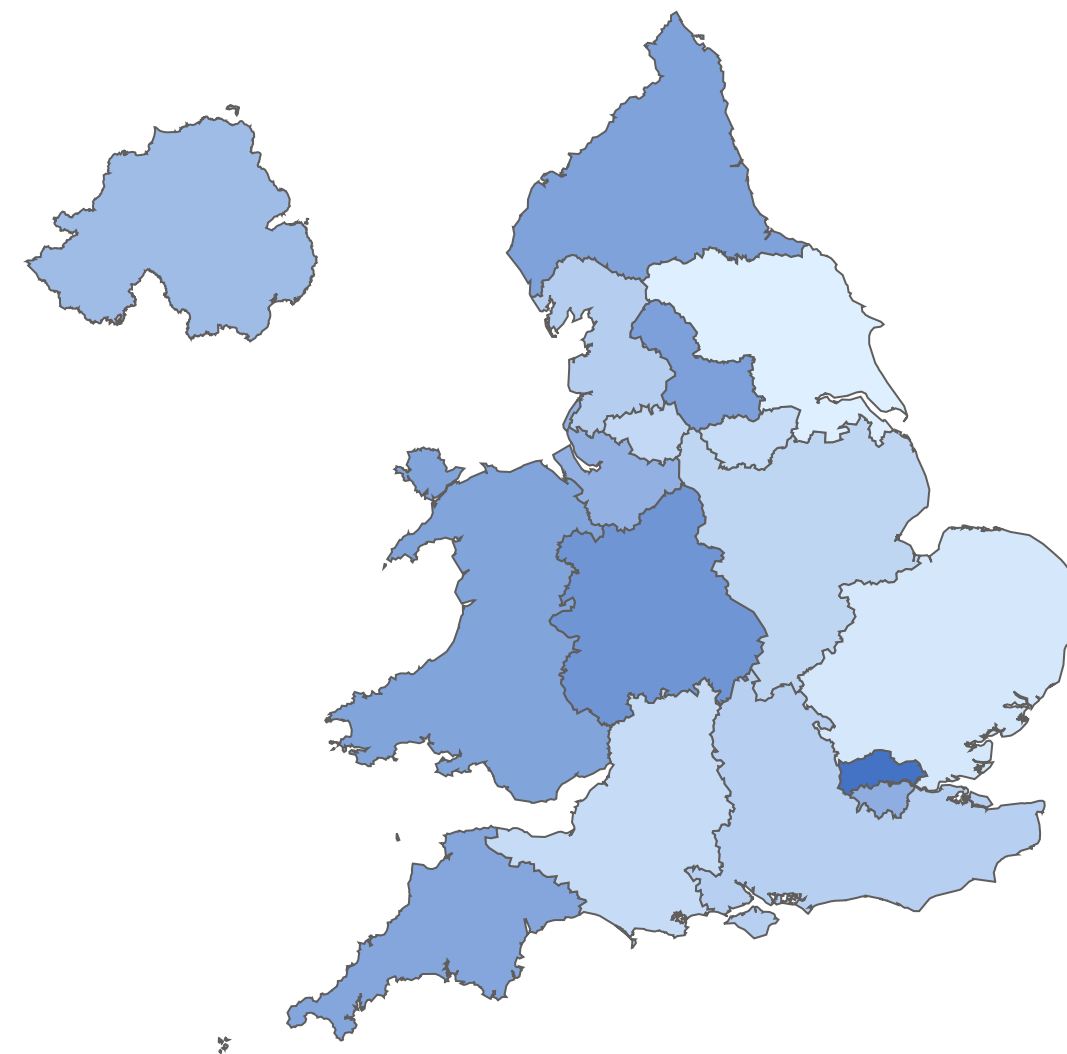
There was a wide variation in the rates of TAVI procedures per million population (pmp) by Cardiac Network across the UK in 2022/23.

Total procedures varied from 34pmp in Humber and North Yorkshire to 173pmp in West Midlands CN

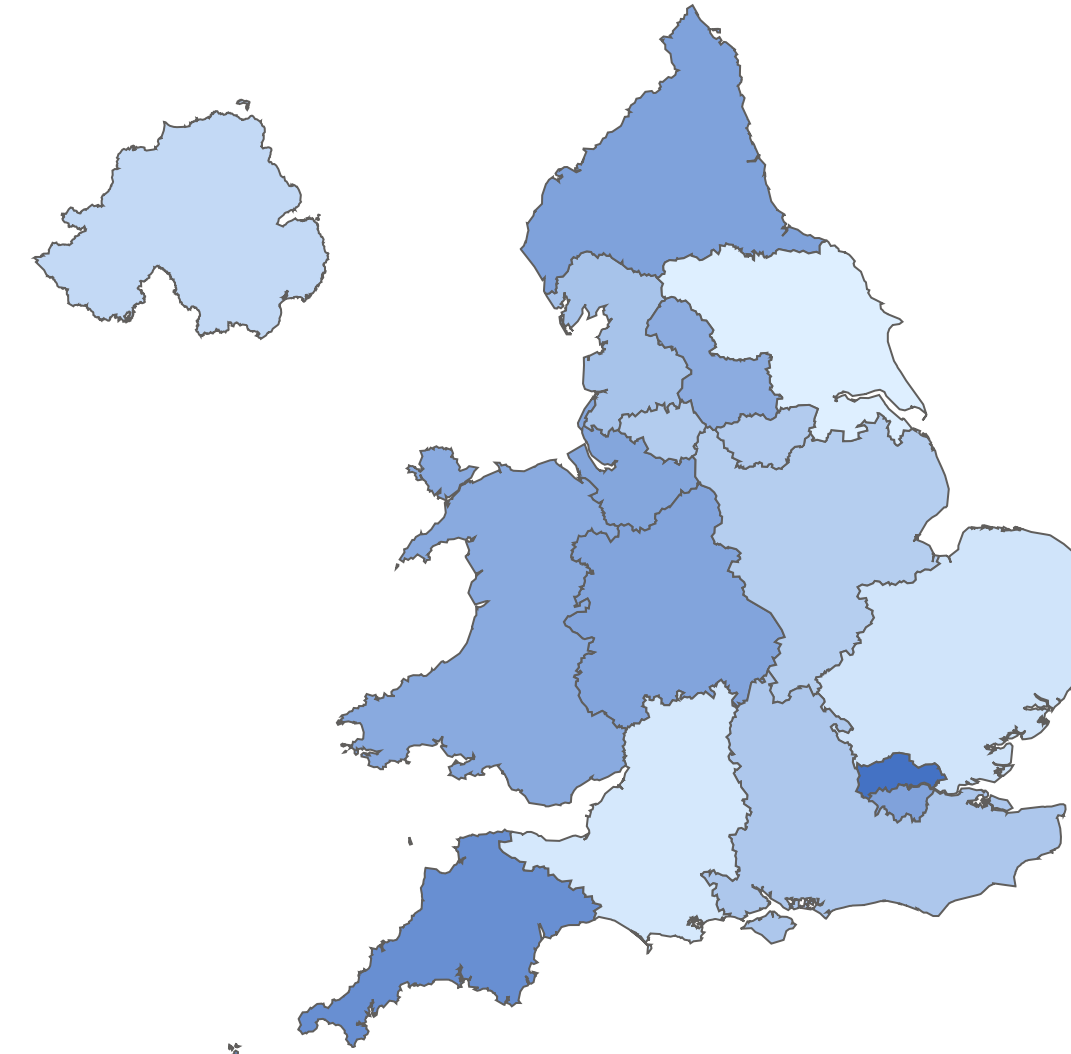
Elective procedures varied from 25pmp in Humber and North Yorkshire CN) to 131pmp in South West (Peninsula)

Urgent procedures varied from 0pmp in South Yorkshire CN to 64pmp in West Midlands

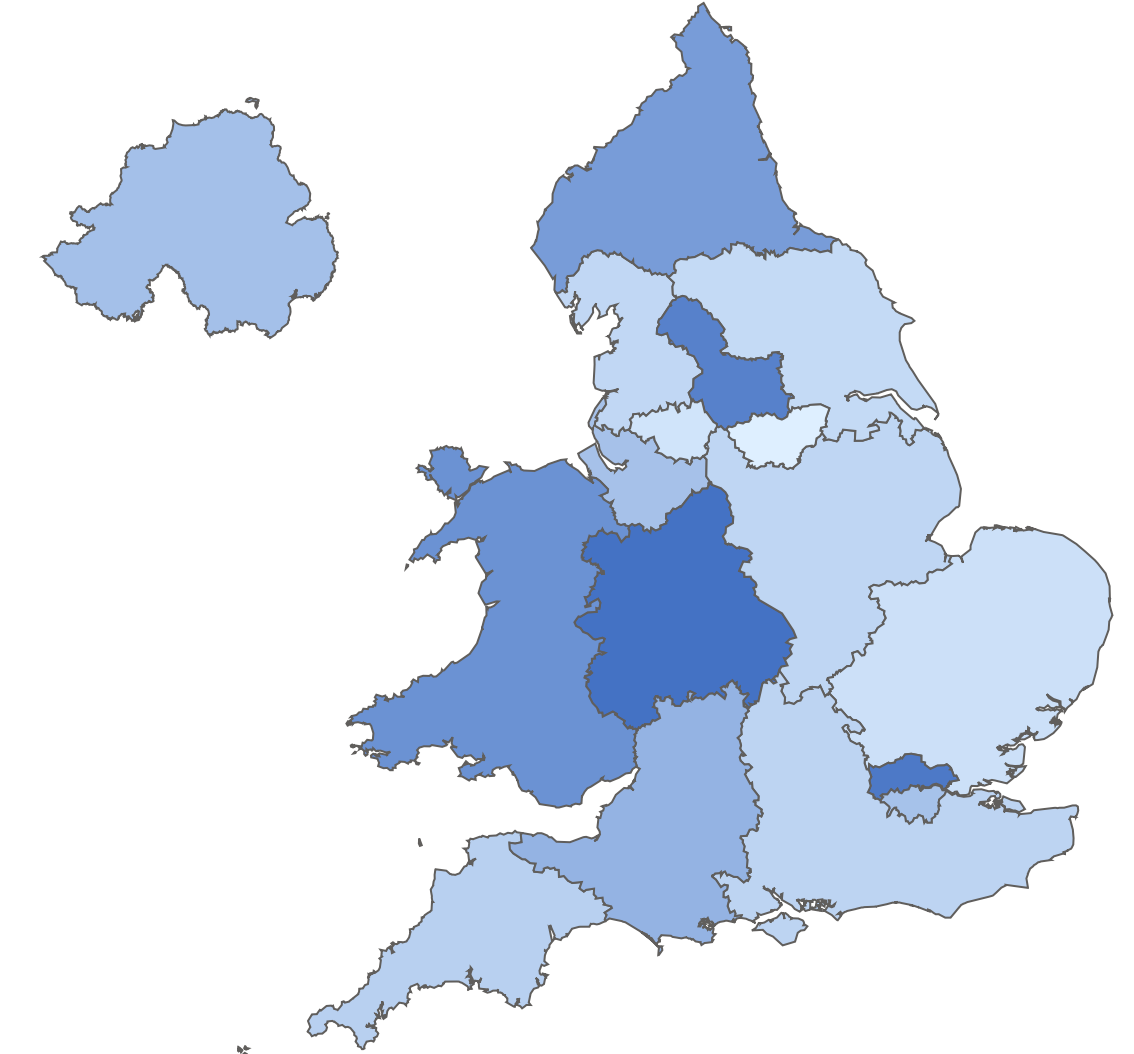
Total TAVI cases per million population by Cardiac Network (2022/23)



Elective TAVI cases per million population by Cardiac Network (2022/23)



Urgent TAVI cases per million population by Cardiac Network (2022/23)



Note: Maps based on location of the hospital performing the procedure.

There is variation in the proportion of urgent cases across TAVI centres



The average proportion of urgent TAVI procedures is 25% across all cases.

In seven hospitals, more than one in three of the case mix is made up of urgent cases, whereas in eight centres, urgent cases accounted for fewer than one in six.

The reasons for these differences are not fully understood and further work is required to explain this variation.

Selecting a country/Cardiac Network and/or a hospital below shows the total cases for those selections over time.

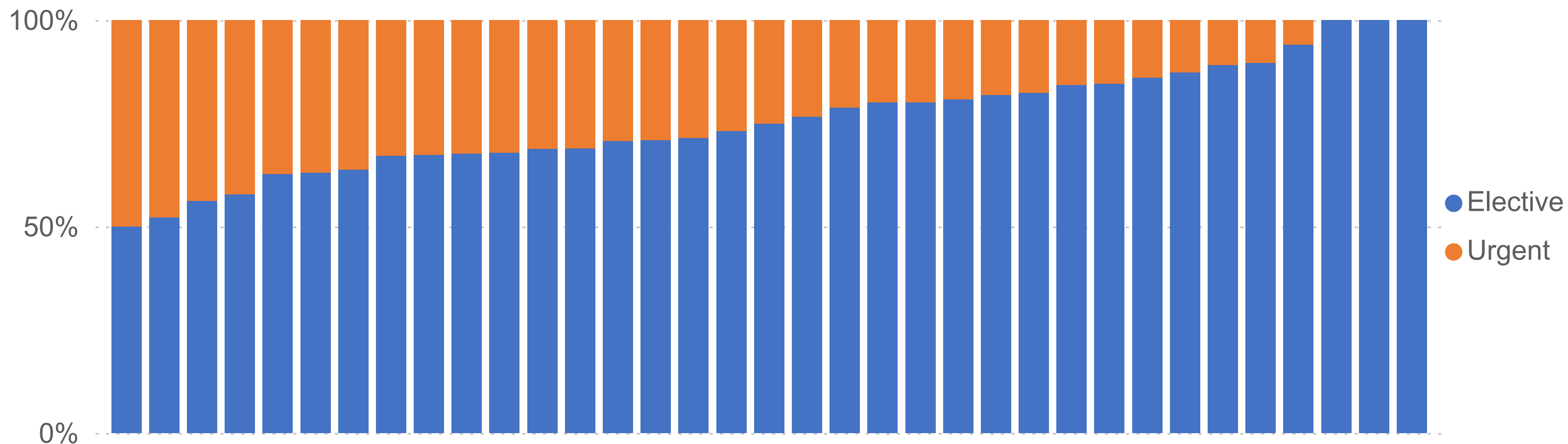
Select country/Cardiac Network

All

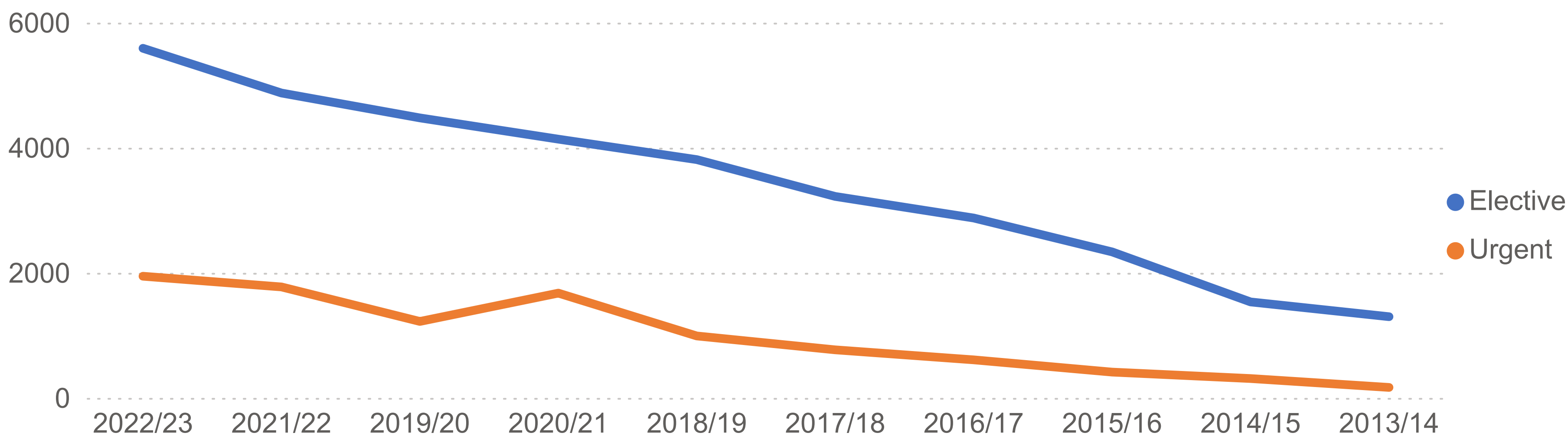
Select hospital

All

Percentage of TAVI procedures by hospital (2022/23)



Number of TAVI cases



Fewer than half of TAVI patients are female



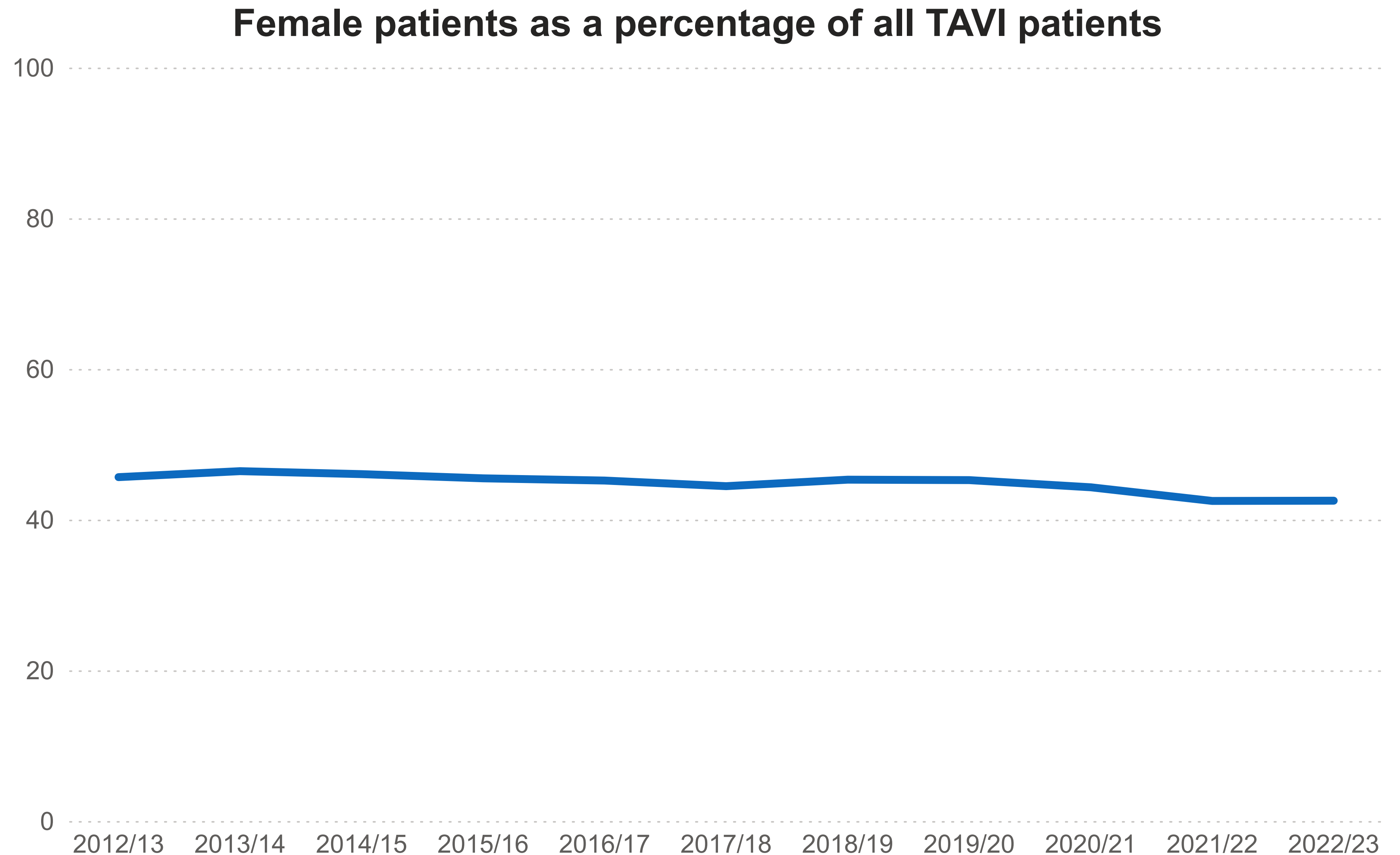
The proportion of females undergoing TAVI in the UK has not changed significantly over time.

Female patients represented 43% of all patients in 2022/23.

The proportion of over-75s who are female is 57% (Census 2021).¹

These data suggest that there may be under-provision of TAVI treatment to female patients.

Further study is needed to confirm this including, for example, of the incidence, presentation and severity of aortic stenosis by sex and age group.

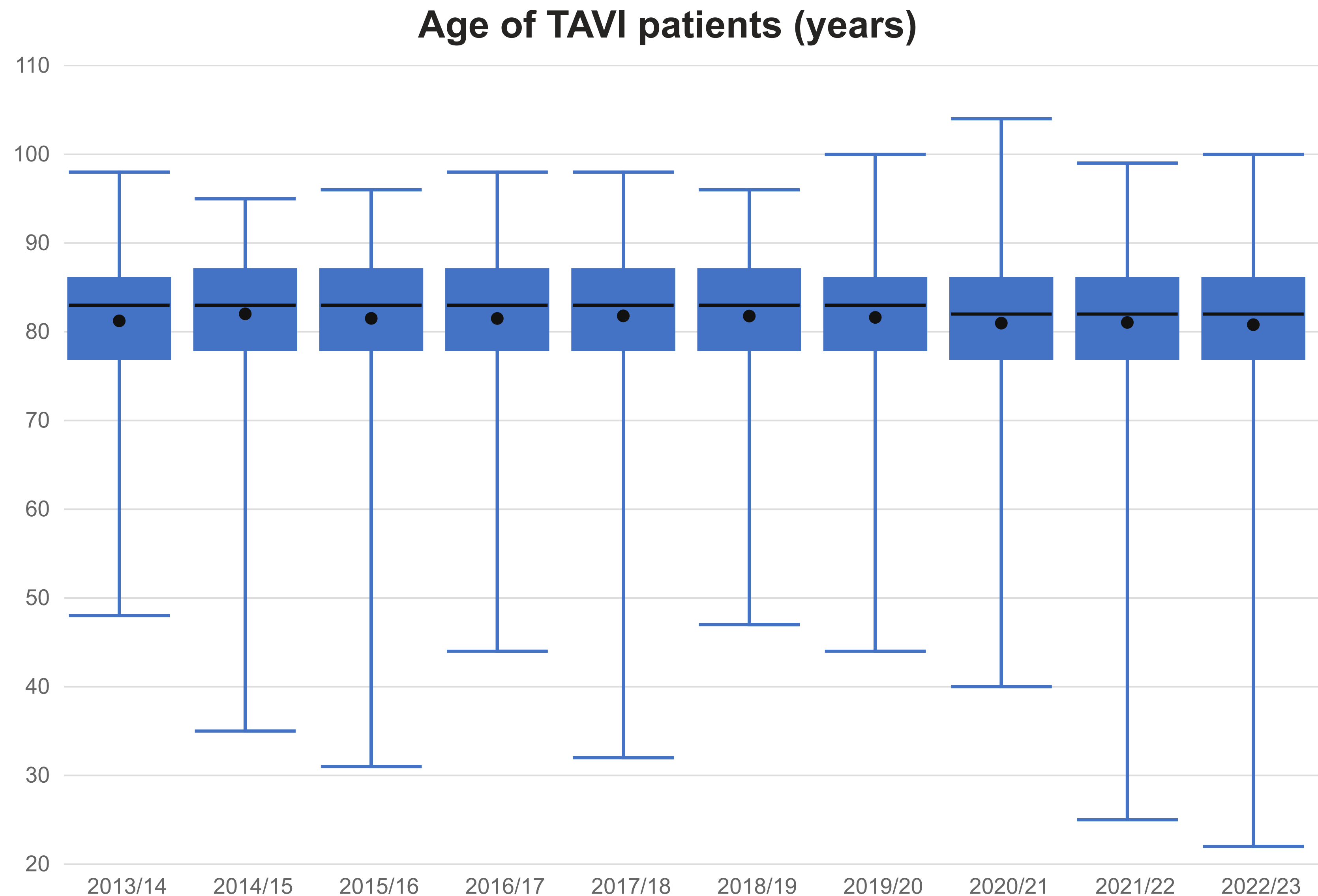
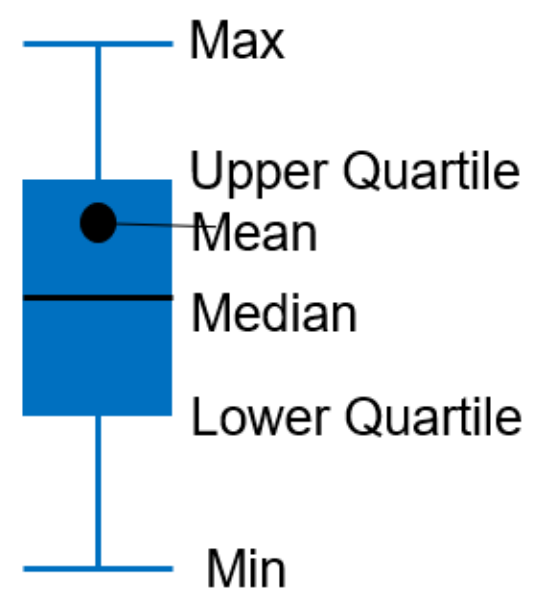


There is no change in the average age of people being treated by TAVI



The median age of patients undergoing TAVI in the UK has not changed over the past decade and remains at 82 years.

Key to reading
the box and
whisker chart

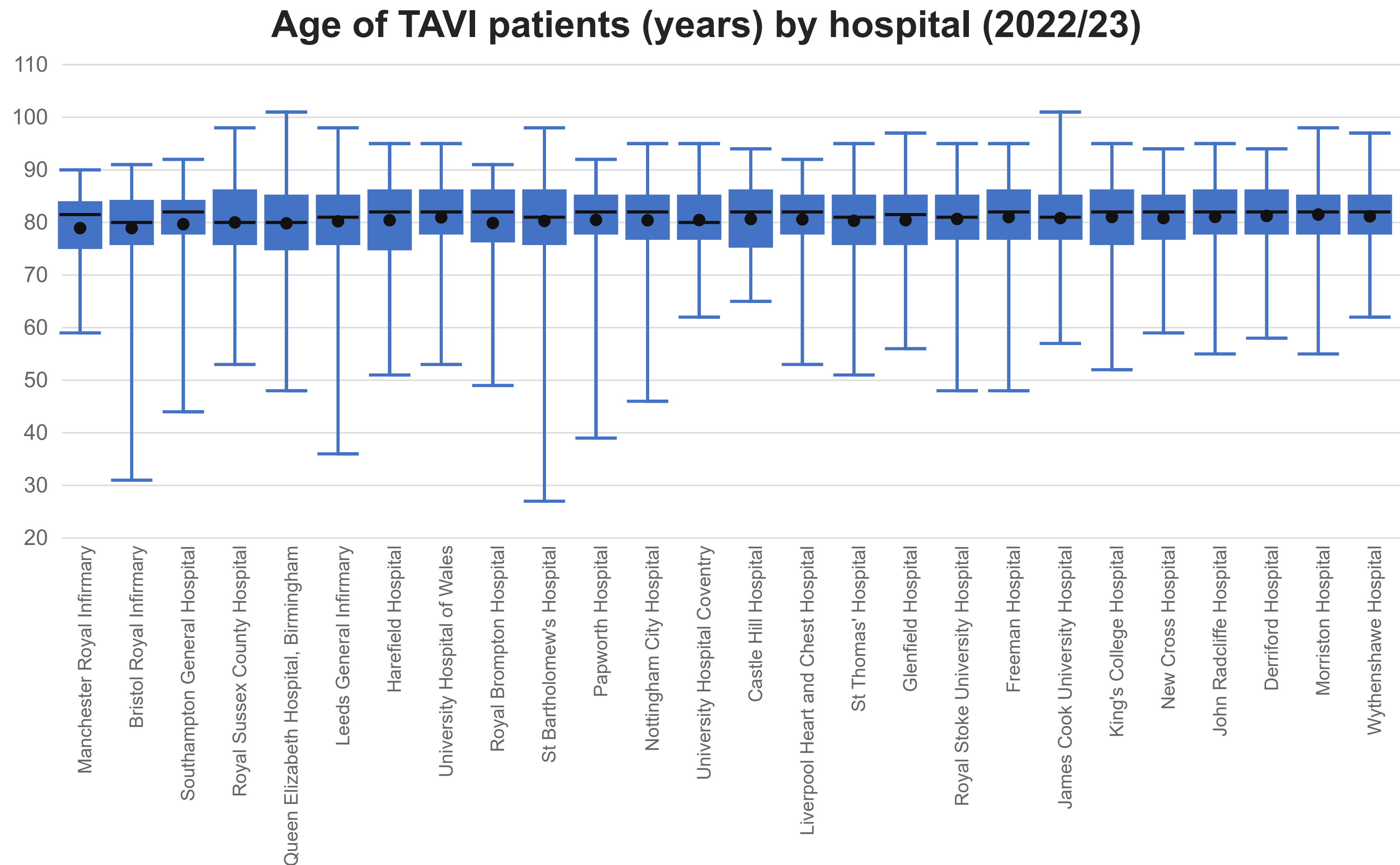
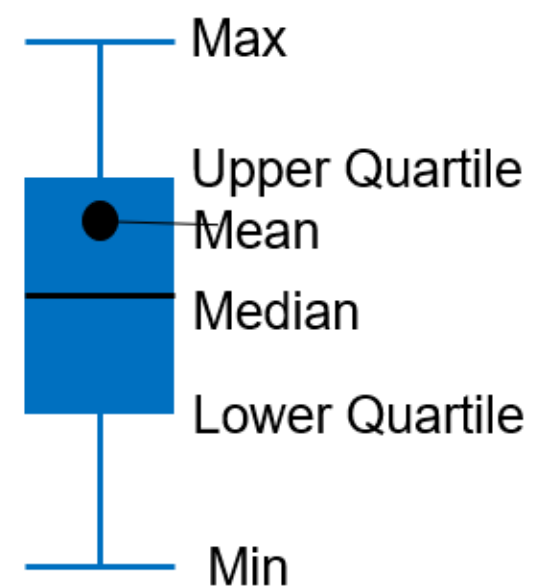


The median age of TAVI patients is consistent across hospitals



There is no significant variation in the median age of TAVI patients across hospitals.

Key to reading the box and whisker chart



There is a fall in the proportion of people aged over 85 undergoing TAVI whilst the proportion of those aged 76-85 years has increased over the last 3 years



Percentage of TAVI cases by patient age group

The proportion of people having TAVI who are aged 75 years or under has remained largely unchanged over time at just below 20%.

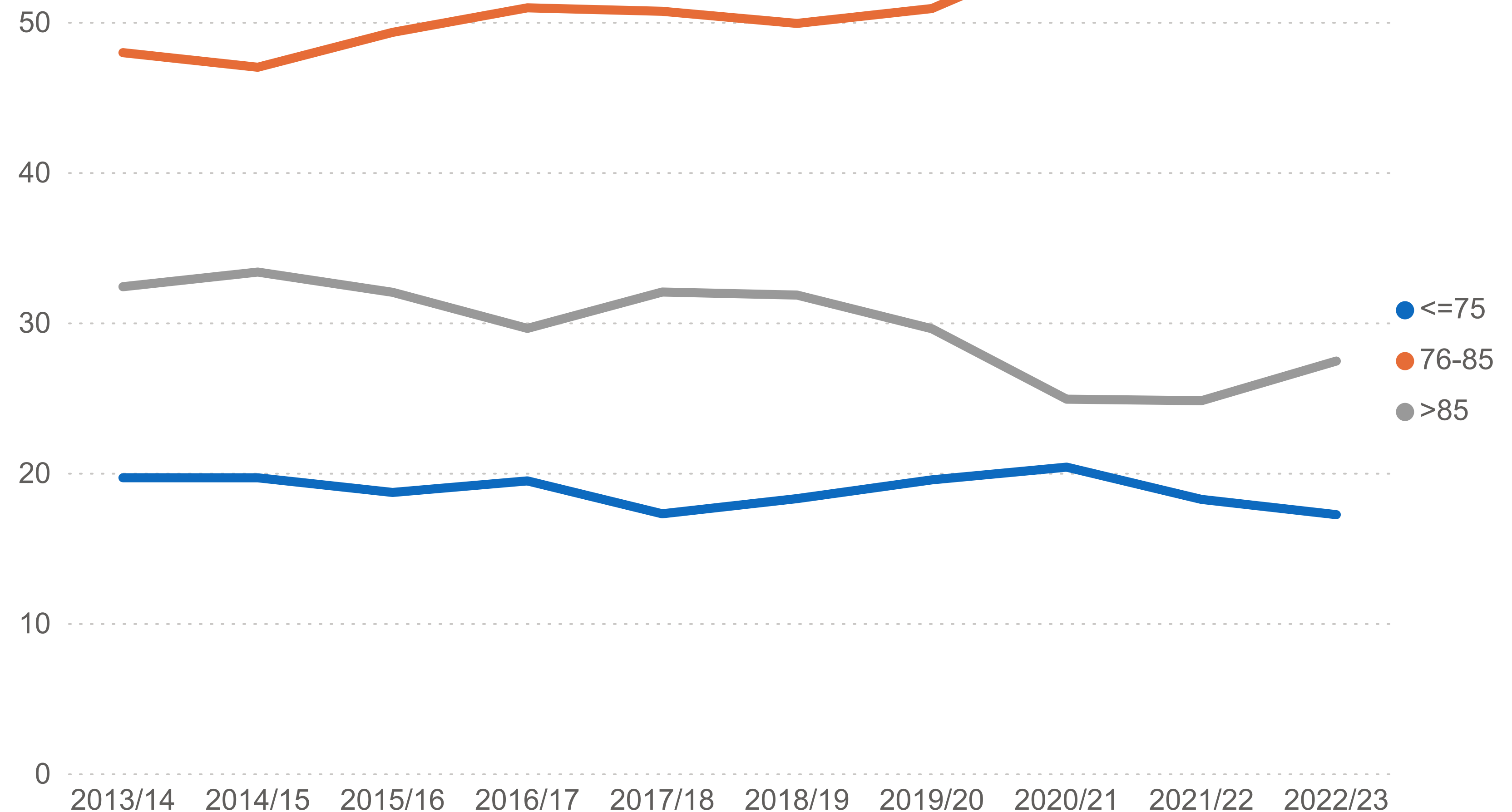
Those aged 76-85 years represented 57% of all cases in 2022/23, up from 50% in 2018/19.

Over the last 10 years, the proportion of TAVI patients over the age of 85 has fallen from 32% to 27%, although the absolute number has increased in line with the overall growth in TAVI cases.

Selecting a country/Cardiac Network and/or a hospital below shows the total cases for those selections over time.

Select country/Cardiac Network

Select hospital

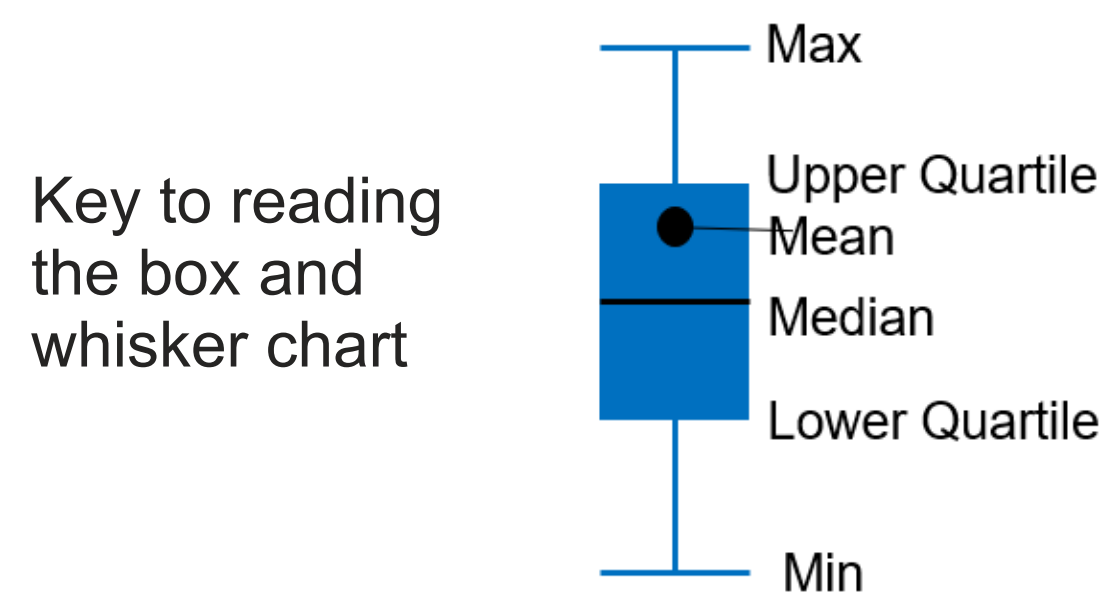


Female TAVI patients are very slightly older than males

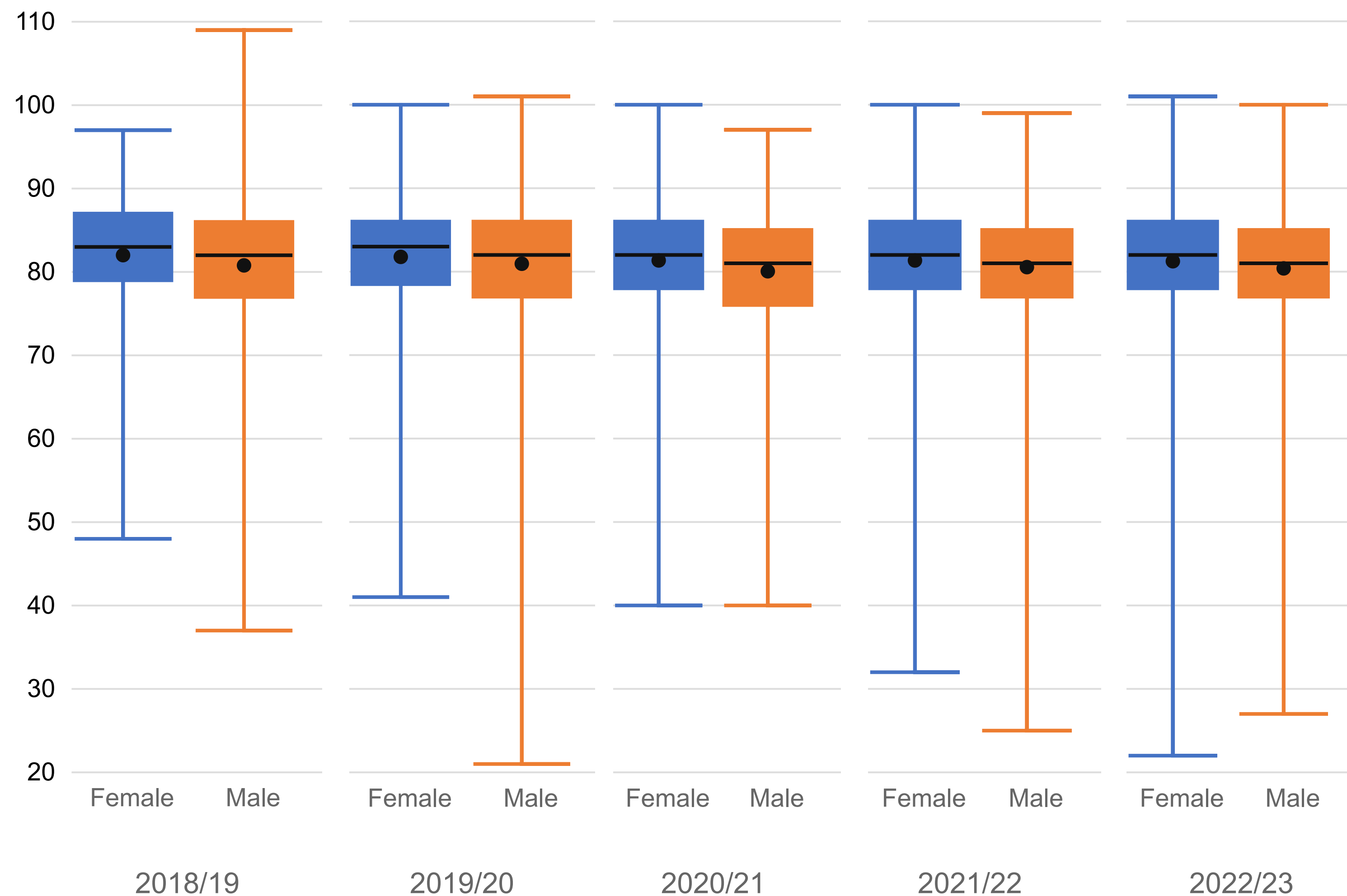


In 2022/23 the median age of males undergoing TAVI was 81 years, and the median age for females was 82 years.

These figures have been consistent across the last five years.



Age of TAVI patients by sex



There is no difference in the proportions of males and females undergoing urgent TAVI

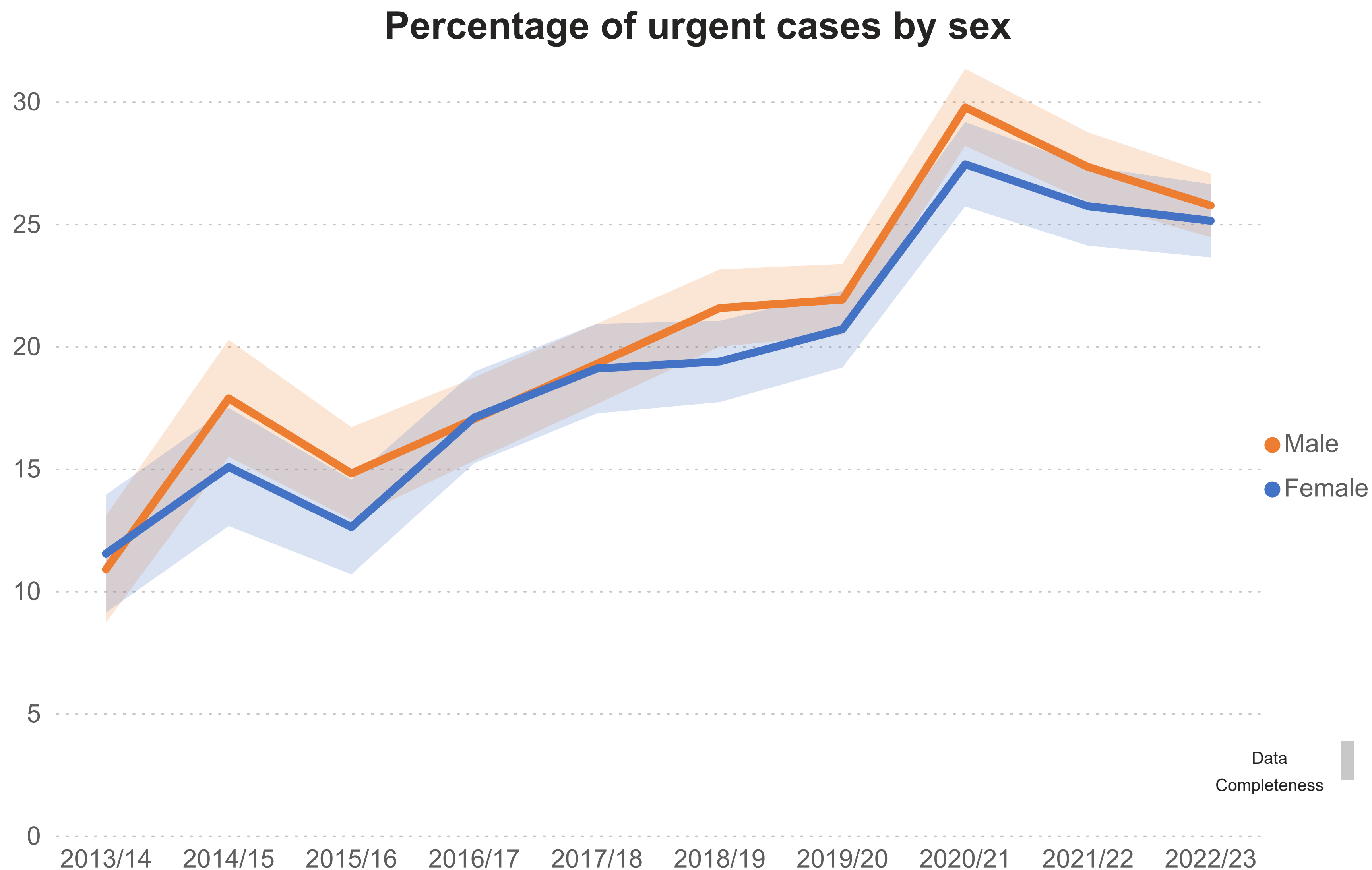


The proportion of urgent TAVI cases in 2020/21 peaked at 30% in males and 27% in females.

This rate has reduced subsequently to 26% in males and 25% in females.

There is no significant difference in these proportions between males and females.

Note: The shaded areas in the graphic represent the 95% confidence interval around the mean line.



Ethnicity of patients is poorly recorded in NICOR TAVI data returns



Ethnicity is reported as 'unknown' or is unrecorded in 23% of cases equating to 1,750 patients. This means that detailed interpretation of ethnicity information is limited.

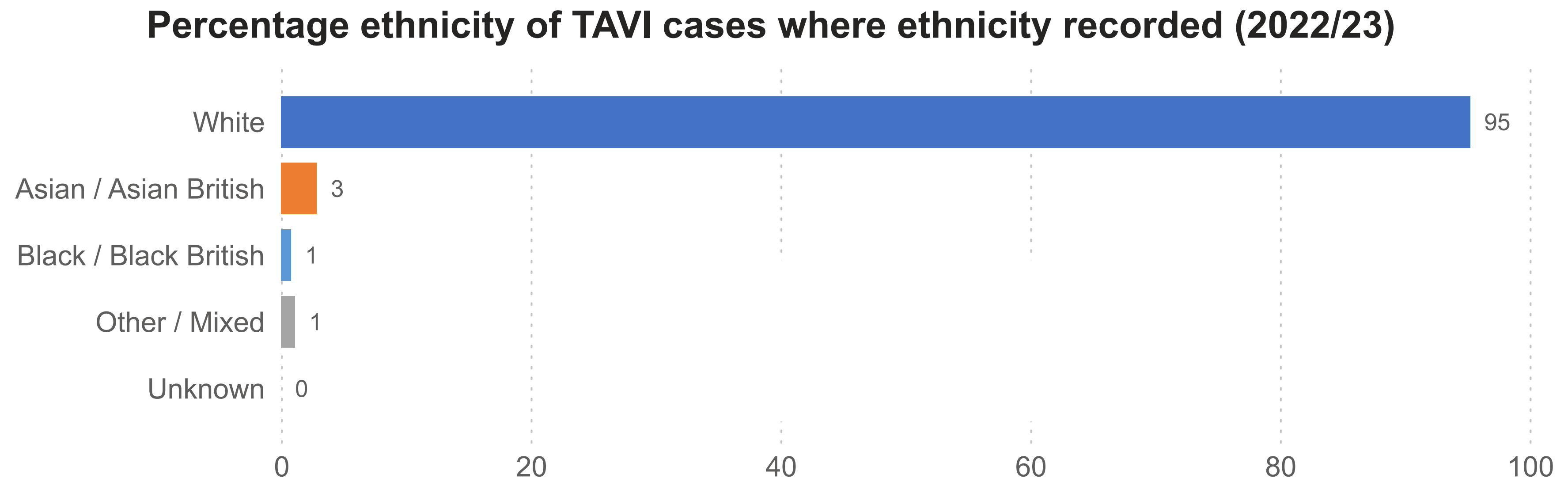
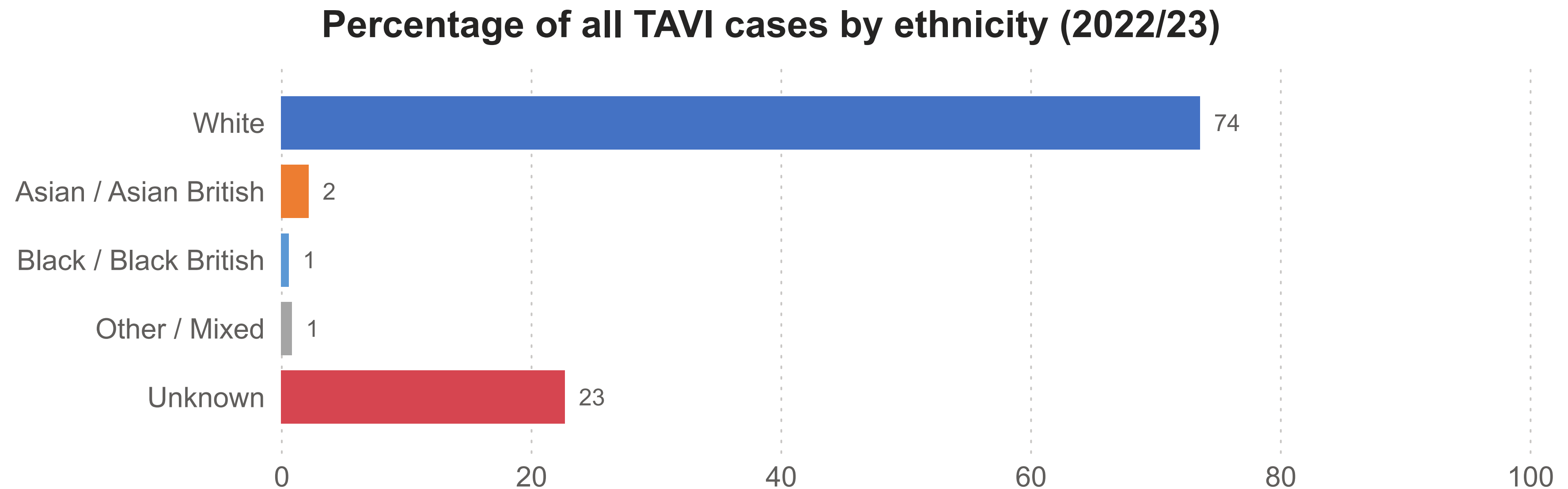
In those cases where ethnicity is reported:

- 95% are White
- 3% are Asian or Asian British
- less than 1% are Black or Black British
- less than 1% are Other or Mixed.

The 70-and-over age group 2021 Census figures are:

- 95% White
- 3% Asian / Asian British
- 1% are Black / Black British
- 1% are Other / Mixed.¹

Based on this, TAVI patients are representative of the national population.



The proportion of TAVI patients who have previously undergone cardiac surgery is falling



The proportion of TAVI patients who have previously had cardiac surgery is decreasing:

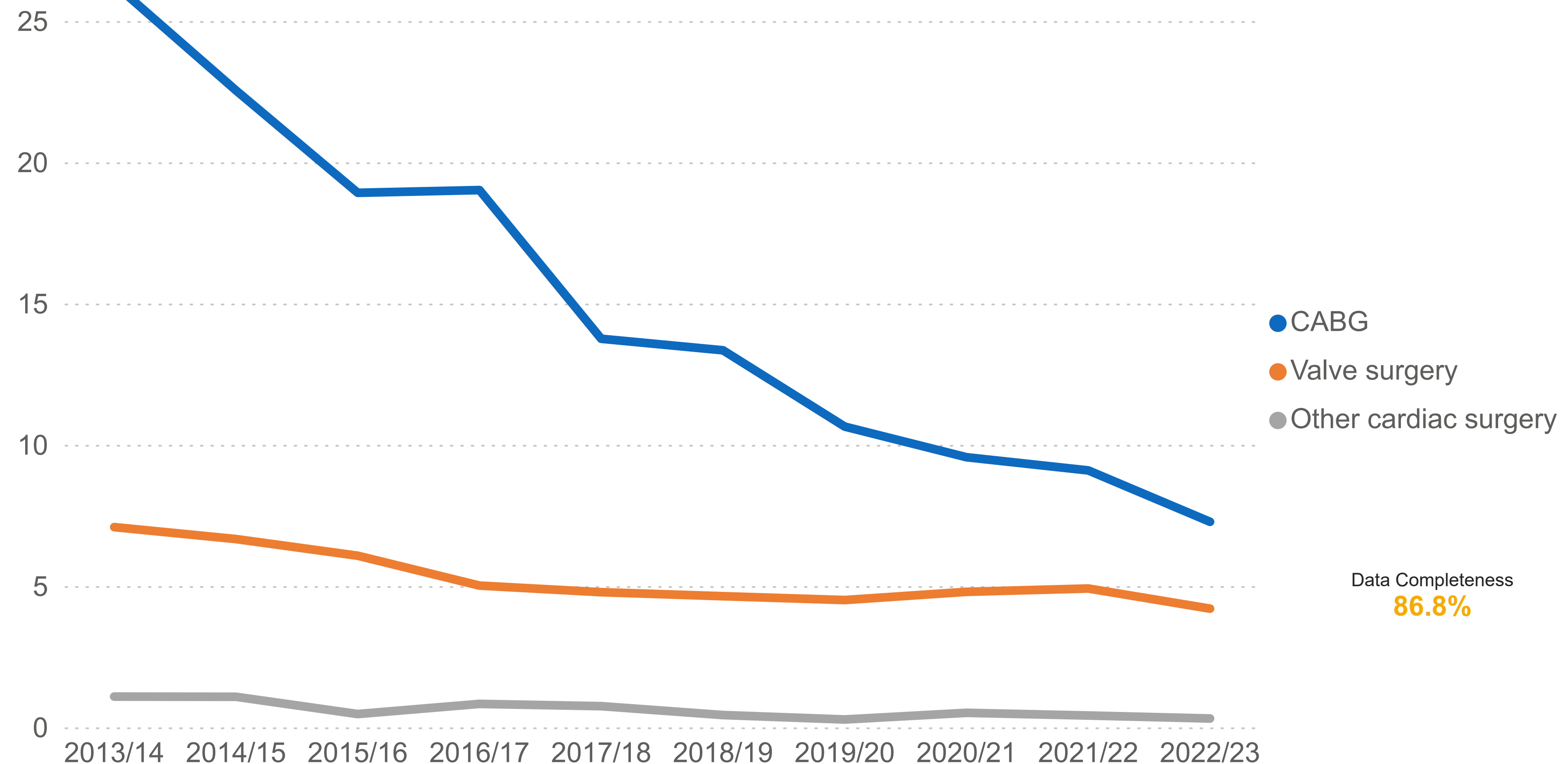
- Those who had prior coronary artery bypass graft (CABG) surgery dropped to 7% of TAVI cases in 2022/23 from 25% in 2013/14
- The proportion who had prior valve surgery was 4% from 7%.

Although these proportions have decreased, the absolute numbers of TAVI patients who have had previously undergone cardiac surgery is increasing slowly because of the overall growth in TAVI cases:

- for CABG, 537 TAVI patients in 2022/23 (386 in 2013/14)
- for valve surgery, 304 in 2022/23 from 104.

Note: data completeness for this field is relatively low and should be taken into account when interpreting this information.

Percentage of TAVI patients who have previously undergone cardiac surgery by type of procedure



More people with failing surgical bioprosthetic valves are being treated with TAVI

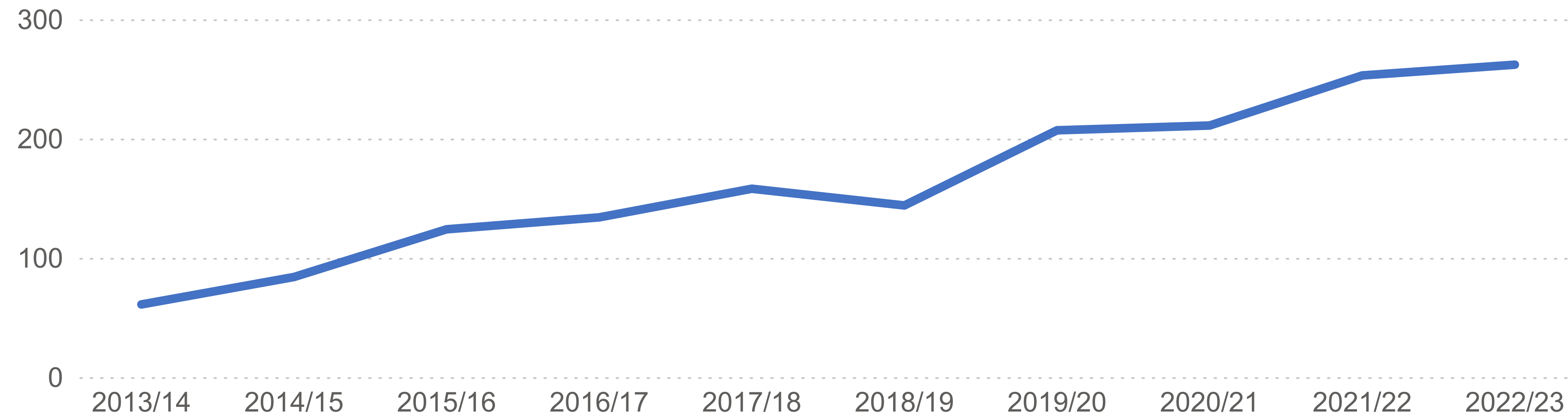


The proportion of people undergoing TAVI who have previously had a bioprosthetic valve has remained stable over the past 5 years at just over 3%.

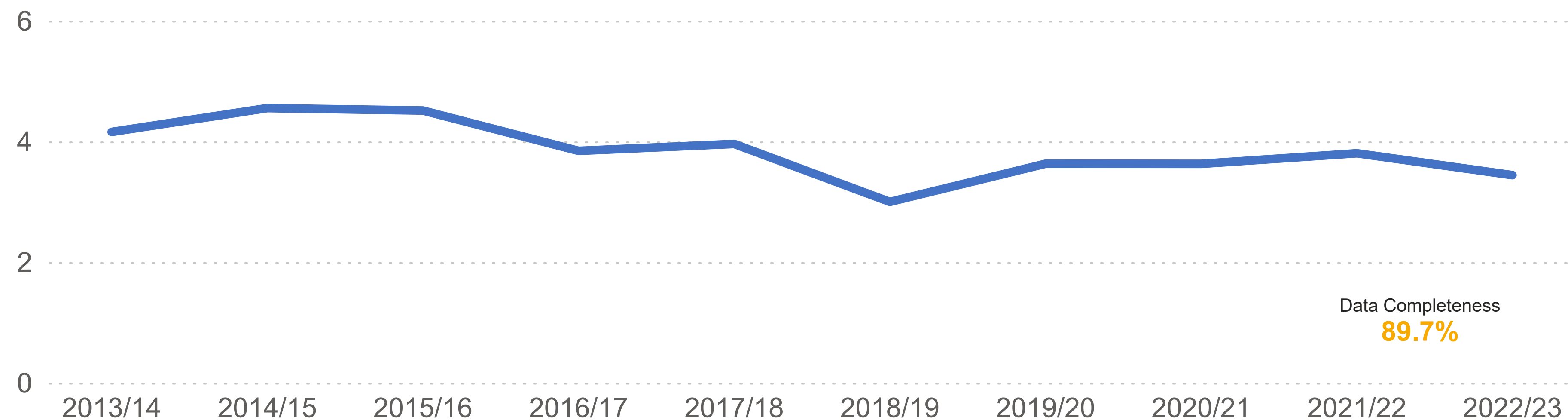
The absolute number continues to increase, reflecting the overall increase in TAVI procedure numbers.

Note: Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Number of people undergoing TAVI with an aortic bioprosthetic valve



Percentage of people undergoing TAVI with an aortic bioprosthetic valve

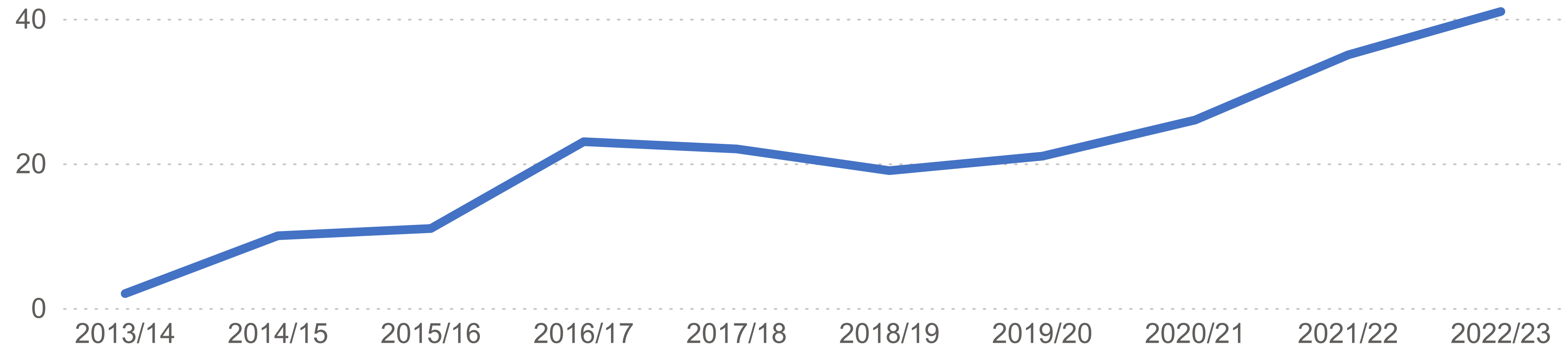


Data Completeness
89.7%

There is a small number of people who require a second TAVI, but the proportion is stable and low at 0.5% of all cases



Number of TAVI patients who had previously undergone TAVI

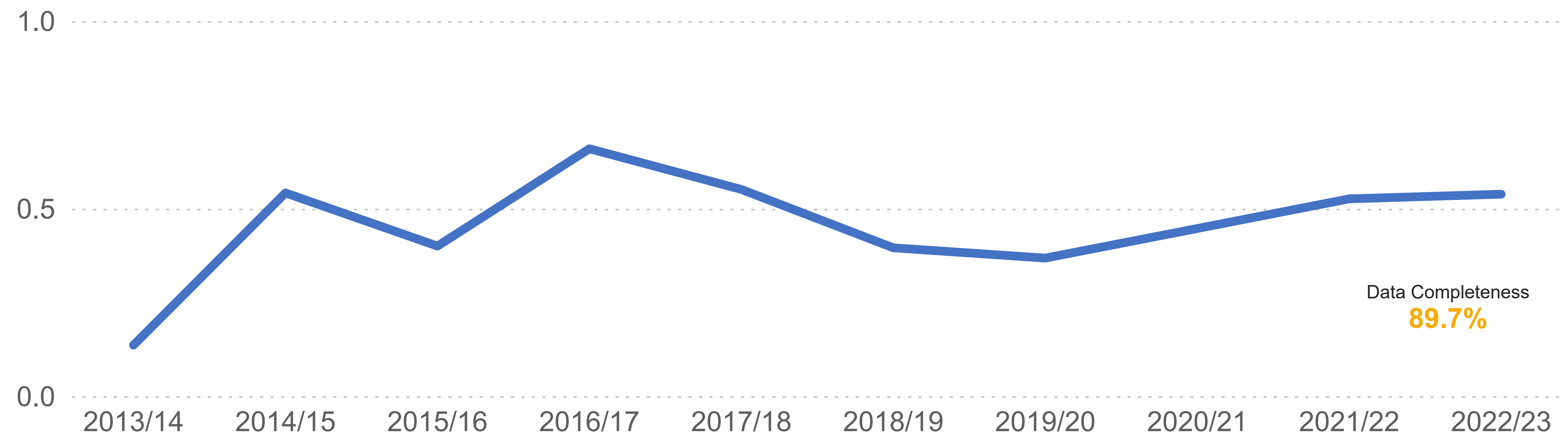


The number of TAVI patients who have previously had a TAVI has slowly increased over time. There were 39 cases in 2022/23.

As a proportion of the total number of TAVI procedures, this has remained stable since 2014/15 at around 0.5%.

These numbers are likely to increase in the future as the population of people with TAVI increases.

Percentage of TAVI patients who who had previously undergone TAVI



Data Completeness
89.7%

Nearly all TAVI procedures are now performed using conscious sedation, with a very small number requiring general anaesthetic



When TAVI was first developed as a treatment, all cases were performed under general anaesthetic.

Now the vast majority (94%) of cases are undertaken using conscious sedation. This allows a more rapid recovery after the procedure.

In 28 centres, more than 90% of cases are undertaken using conscious sedation.

Seven centres performed less than 90% of cases with conscious sedation.

Selecting a country/Cardiac Network and/or a hospital below shows the total cases for those selections over time.

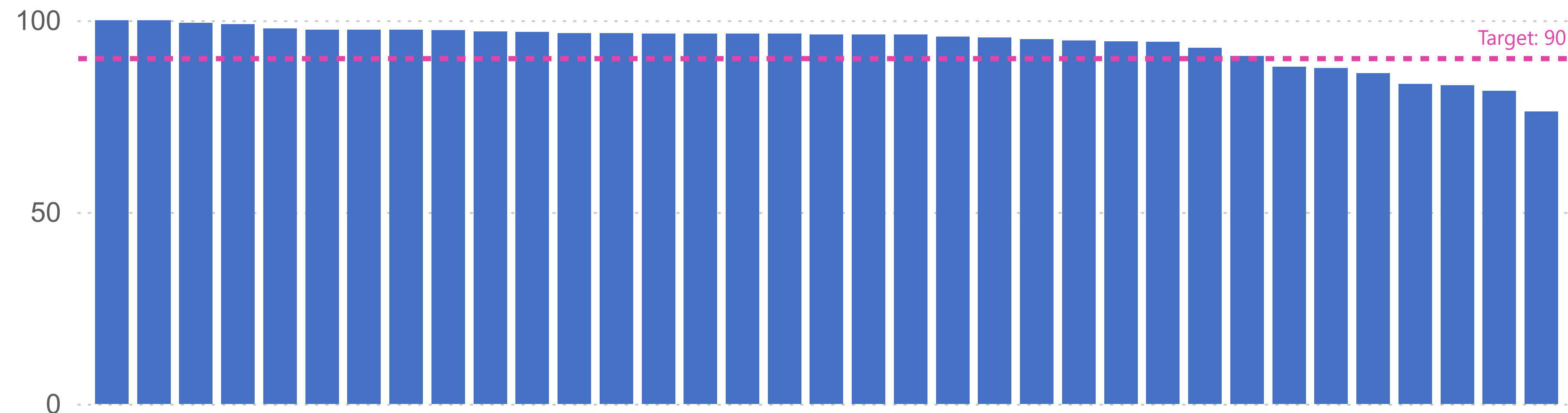
Select country/Cardiac Network

All

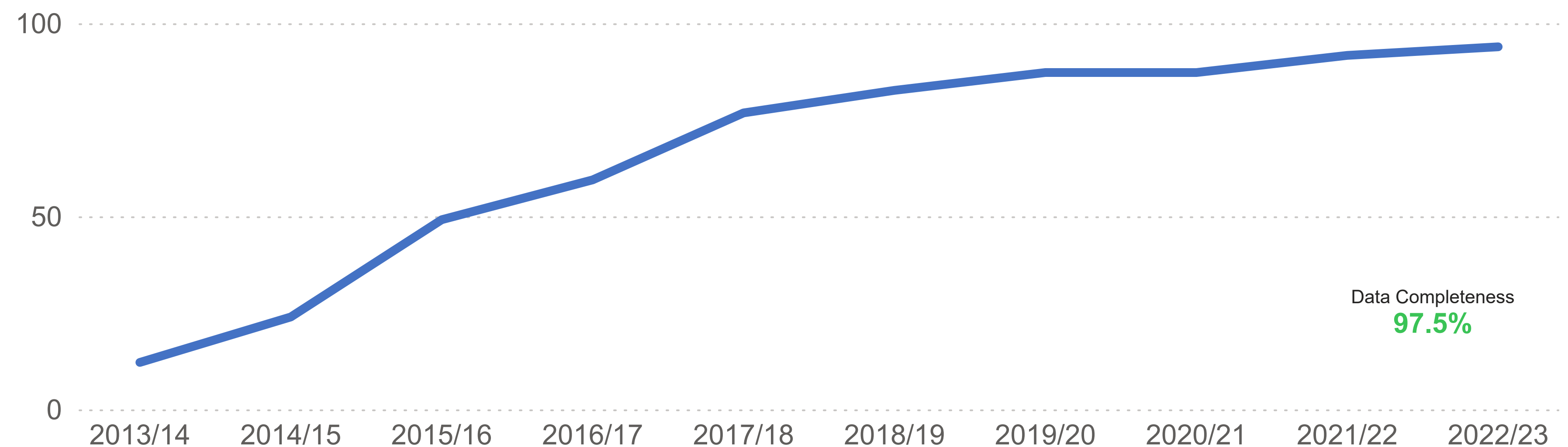
Select hospital

All

Percentage of TAVI procedures using conscious sedation by hospital (2022/23)



Percentage of TAVI procedures performed using conscious sedation



Data Completeness
97.5%

The majority of TAVI procedures use the percutaneous transfemoral approach for device delivery but other methods are required in a few cases



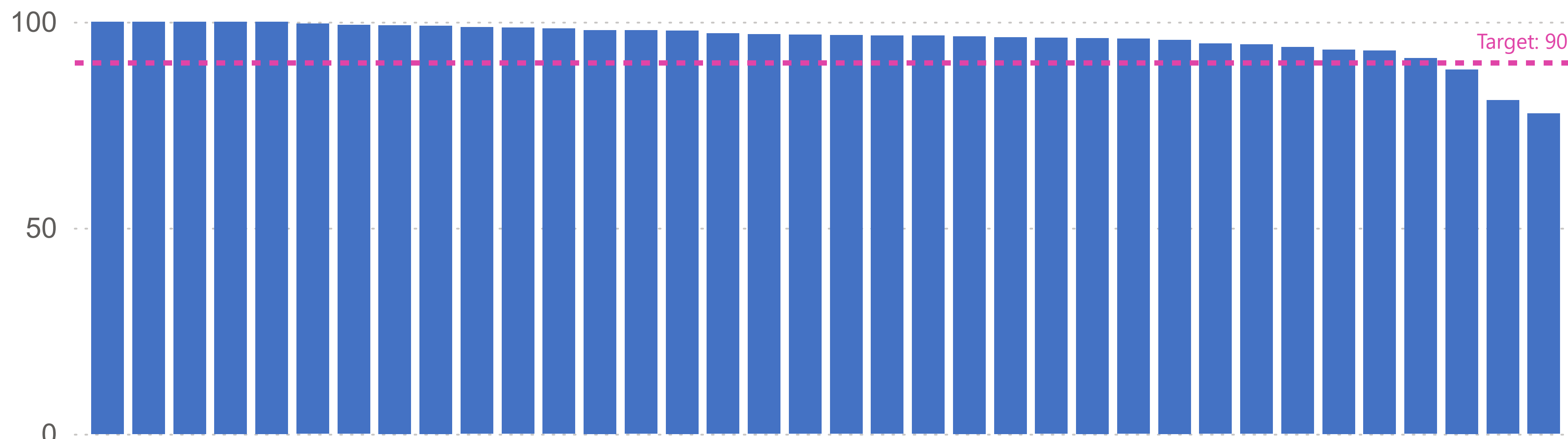
The proportion of TAVI cases undertaken with the percutaneous transfemoral approach has continued to increase and was 96% in 2022/23.

In 29 centres more than 90% of cases were undertaken using percutaneous femoral access (three centres were below this level).

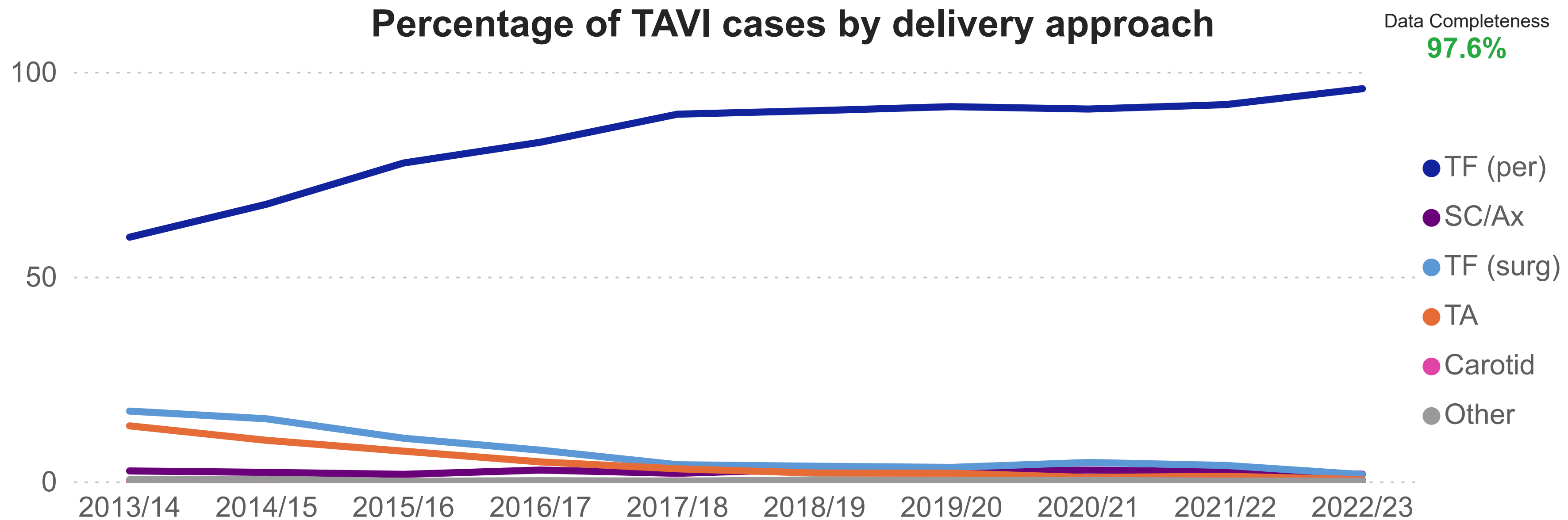
Selecting a country/Cardiac Network and/or a hospital below shows the total cases for those selections over time.

Key:
TF (per) Percutaneous transfemoral access
SC/Ax Subclavian or axillary artery access
TF (surg) Surgical transfemoral access
TA Transapical access
Carotid Carotid artery access
Other Other methods of access

Percentage of TAVI cases using percutaneous transfemoral delivery (2022/23)



Percentage of TAVI cases by delivery approach



Data Completeness
97.6%

Select country/Cardiac Network

All

Select hospital

All

Subclavian, axillary and surgical transfemoral procedures have largely replaced the transapical approach as an alternative to percutaneous transfemoral access



With the increased use of the percutaneous transfemoral access route for TAVI procedures, the proportion of cases using alternative approaches has fallen, but they are still required in some cases.

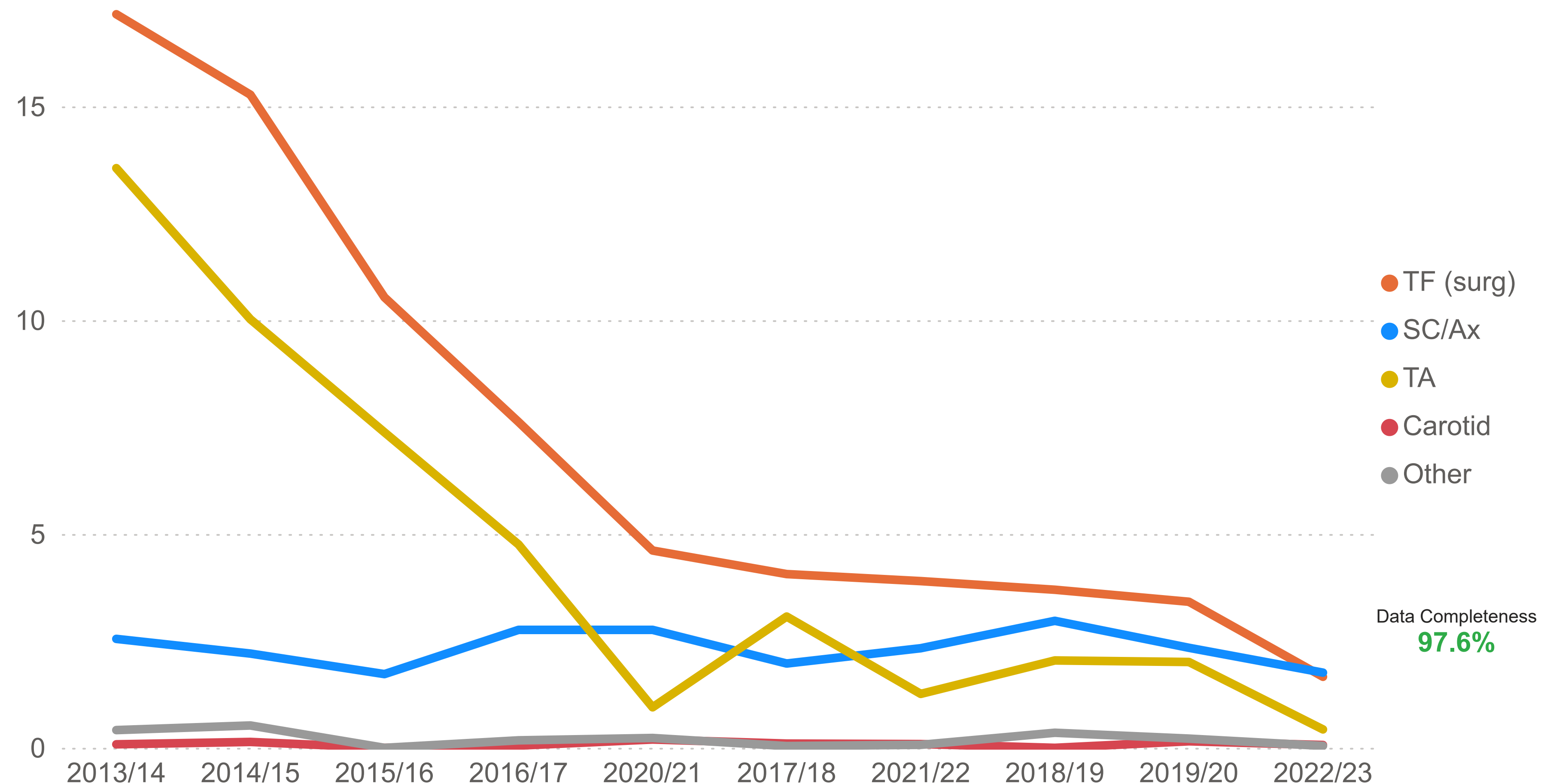
Alternative access was used in 7.8% of TAVI cases in 2022/23.

There has been a significant fall in the number of surgical trans-apical cases since 2014/15 (0.4% in 2022/23).

The most frequently used alternatives are via subclavian/axillary artery access (1.8%) or surgical transfemoral procedures (1.7%).

Key:
SC/Ax Subclavian or axillary artery access
TF (surg) Surgical transfemoral access
TA Transapical access
Carotid Carotid artery access
Other Other methods of access

Percentage of TAVI cases performed using access other than the percutaneous transfemoral route



Cerebral embolic protection devices are used in just over 10% of TAVI procedures



There has been a growing interest in whether complications of TAVI can be reduced.

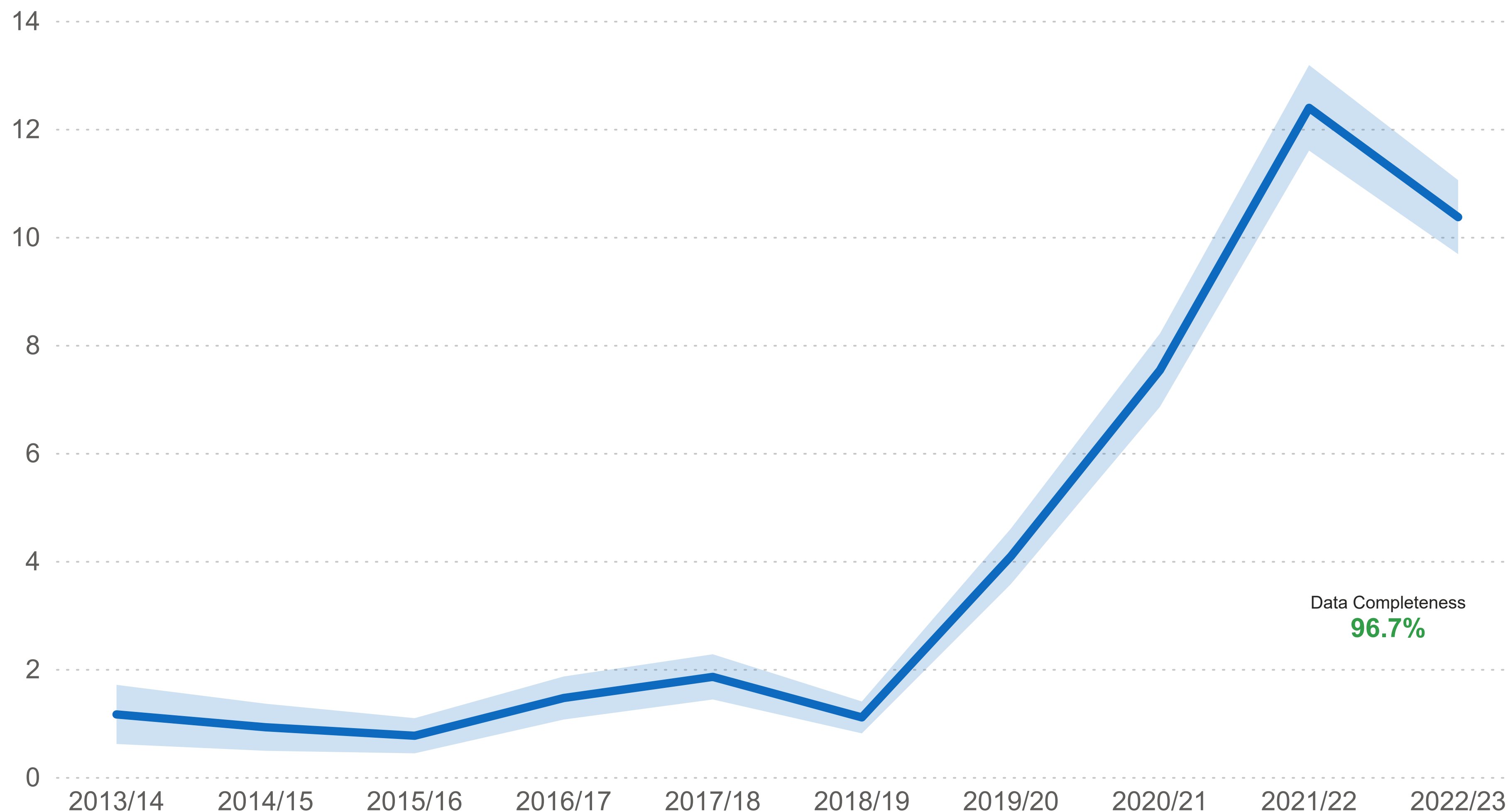
An example of this is stroke, which may be reduced by the use of cerebral embolic protection devices.

There has been a significant rise in the proportion of TAVI procedures undertaken with cerebral embolic protection over the last few years, although there was a slight dip to just over 10% in 2022/23.

This in part relates to many hospitals in the UK taking part in a large trial to determine the value of such protection.

The future rates of their use will be determined by the results of that and other ongoing trials.

Percentage of TAVI procedures where cerebral embolic protection was used



Data Completeness
96.7%

Key:
Shaded areas represent the 95% confidence interval of the mean line

The median length of stay for elective TAVI patients is three days



The median length of stay (LOS) for elective TAVI cases in 2022/23 was three days.

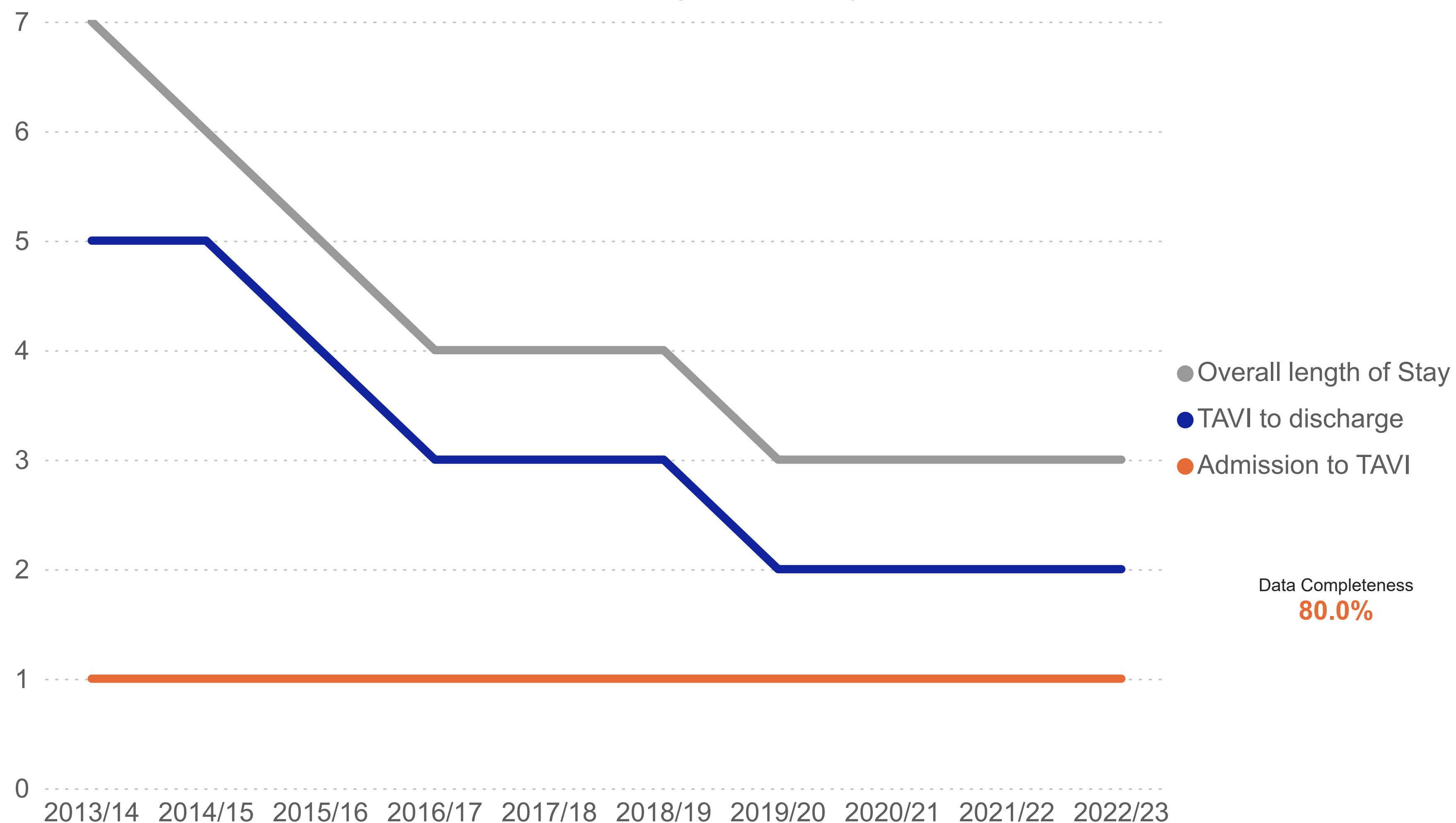
This length of stay is made up of:

- Time from admission to the TAVI
- Time from TAVI to discharge.

The median time from admission to TAVI is one day.

Following the TAVI procedure, the median time to discharge is two days, suggesting that most people are being discharged early after TAVI.

Median time (days) from admission to TAVI, TAVI to discharge and overall length of stay



The median length of stay for elective TAVI cases varies between hospitals

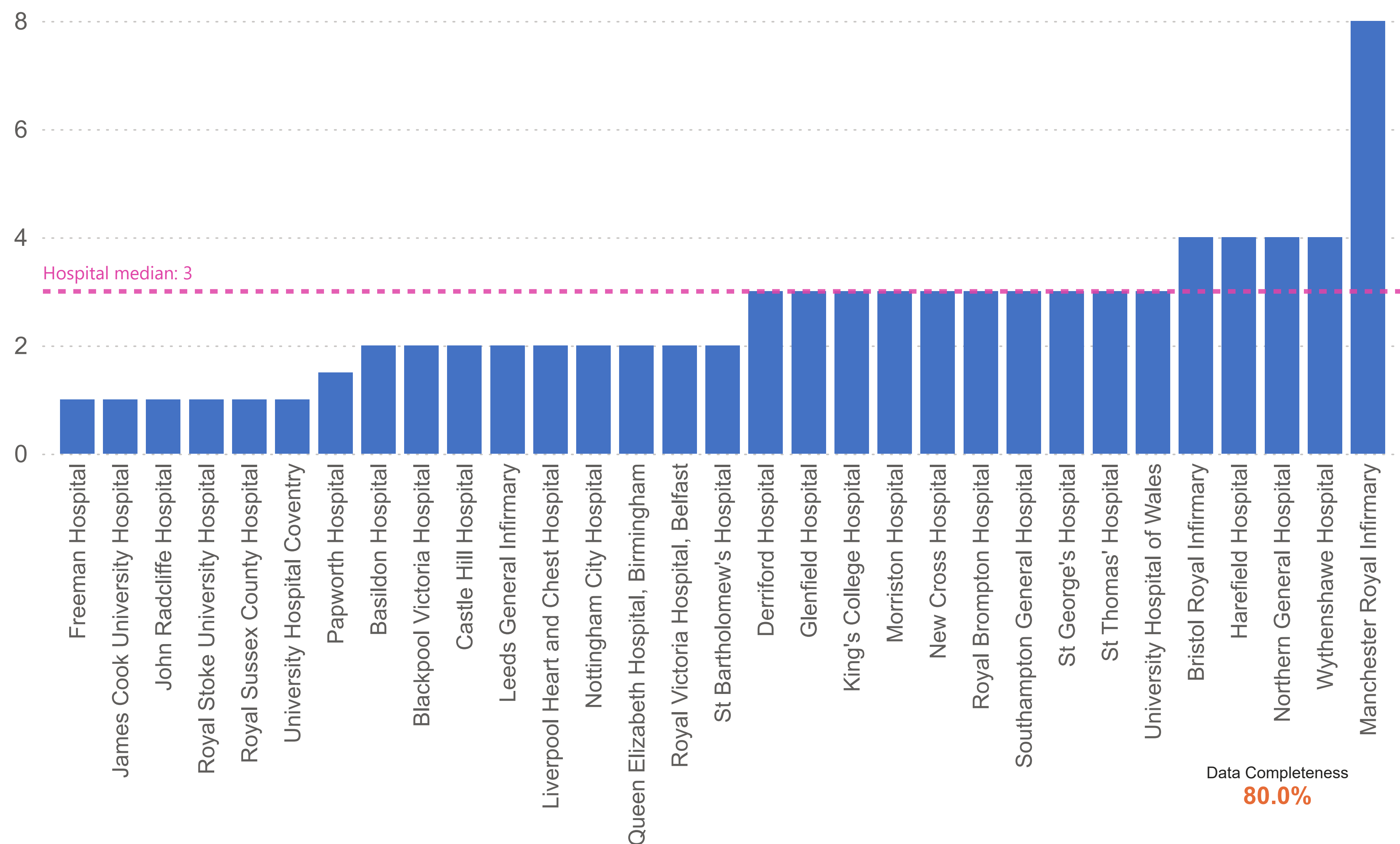


Length of stay (days) for elective TAVI procedures by hospital (2022/23)

There is a variation in median length of stay for elective TAVI between hospitals.

Six hospitals had a median stay of one day, but one hospital (Manchester Royal Infirmary) had a median length of stay of eight days.

Length of stay reflects a number of factors, for example case complexity and access route used.



Data Completeness
80.0%

Some people require a longer stay after elective TAVI, but there is variation between hospitals



Most hospitals discharge the majority of people undergoing TAVI early after an elective procedure but there is significant variation in length of stay (LOS).

The graphic shows the proportion of people undergoing TAVI discharged at each time point after admission is shown.

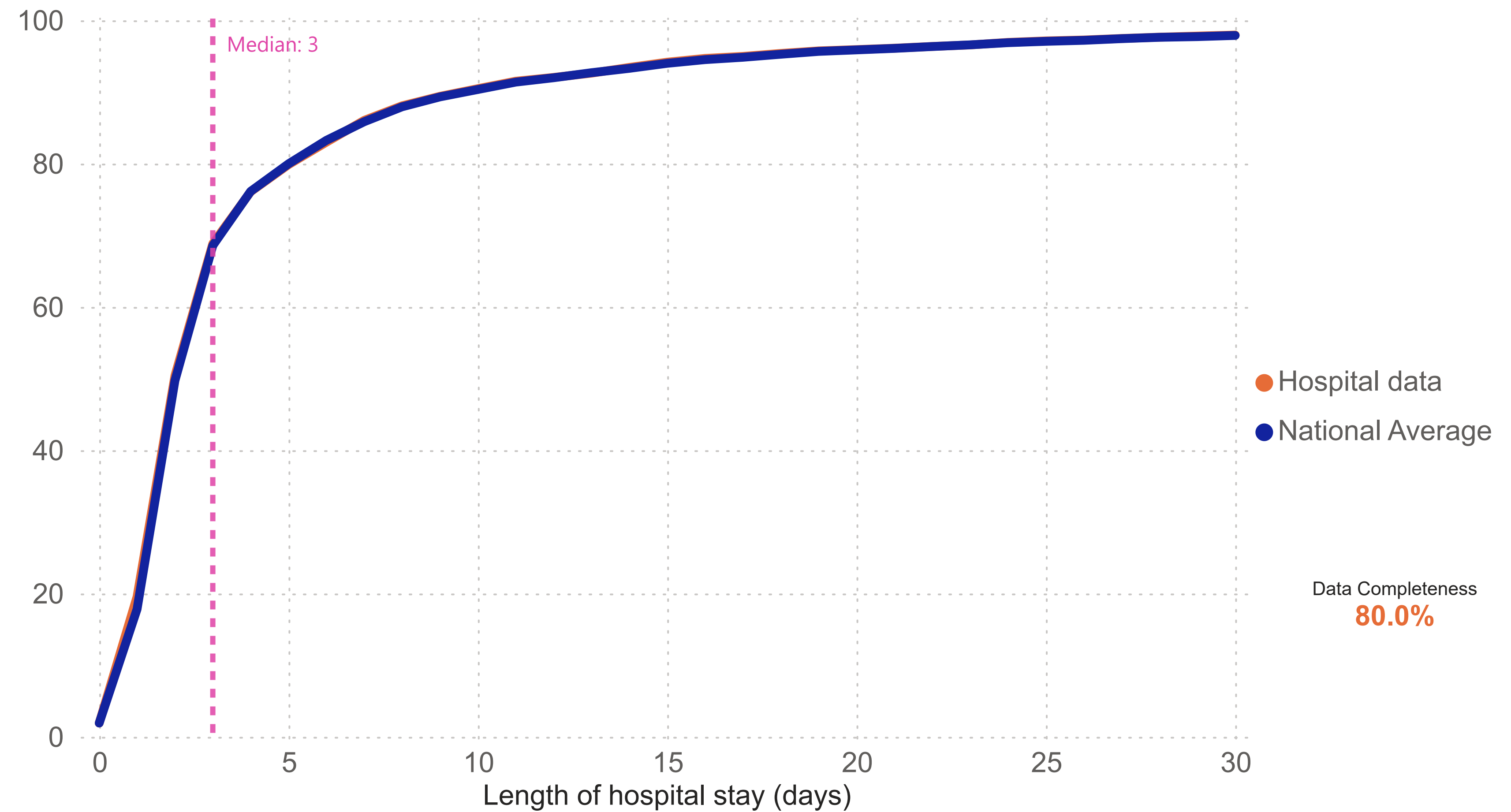
Nationally, 18% of people are discharged within one day of TAVI and 69% by day three. One in ten elective TAVI patients remain in hospital for more than 10 days.

Selecting a hospital below shows the total cases for those selections over time.

Note: Hospitals with data for fewer than 20 cases are excluded. Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Select hospital

Cumulative percentage of elective TAVI patients with different length of stay (days)



The median length of stay for urgent TAVI cases is 15 days



In 2022/23, the median length of stay (LOS) for urgent TAVI cases was 15 days.

This time is made up of the time from admission from the first hospital the person is admitted to, to the day of their TAVI, and then the time from TAVI to discharge.

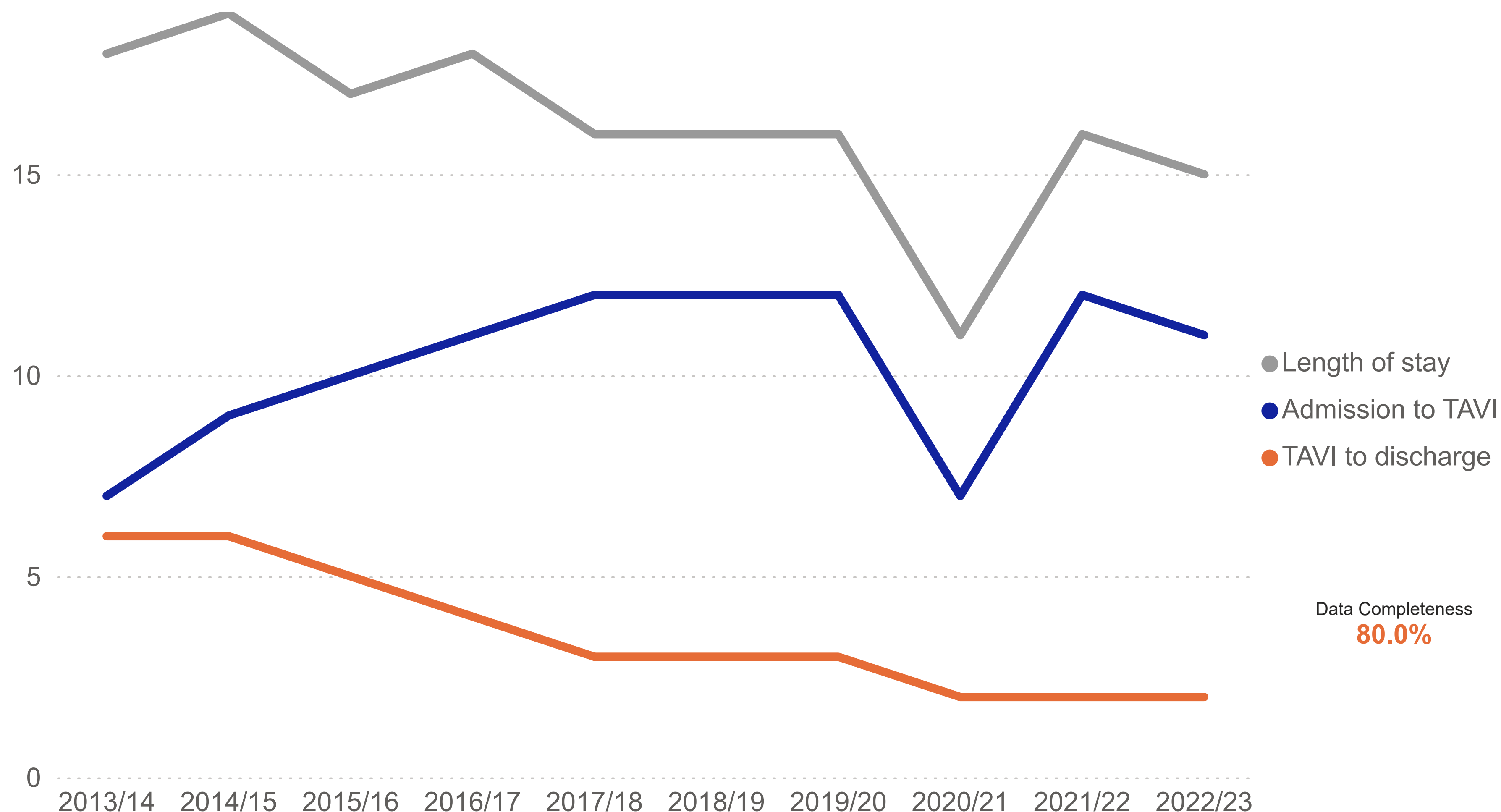
In 2022/23, the median time from admission to TAVI was 11 days. This has been rising over the last 10 years.

Following TAVI, the median time to discharge was two days. This figure has been falling steadily.

During the COVID-19 pandemic, because of reductions in elective work, more people were treated urgently. The median length of stay remains higher than during the COVID-19 pandemic.

Note: Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Median time (days) for urgent cases from admission to TAVI, from TAVI to discharge and overall length of stay



The length of stay in hospital for people requiring urgent TAVI varies very substantially between hospitals



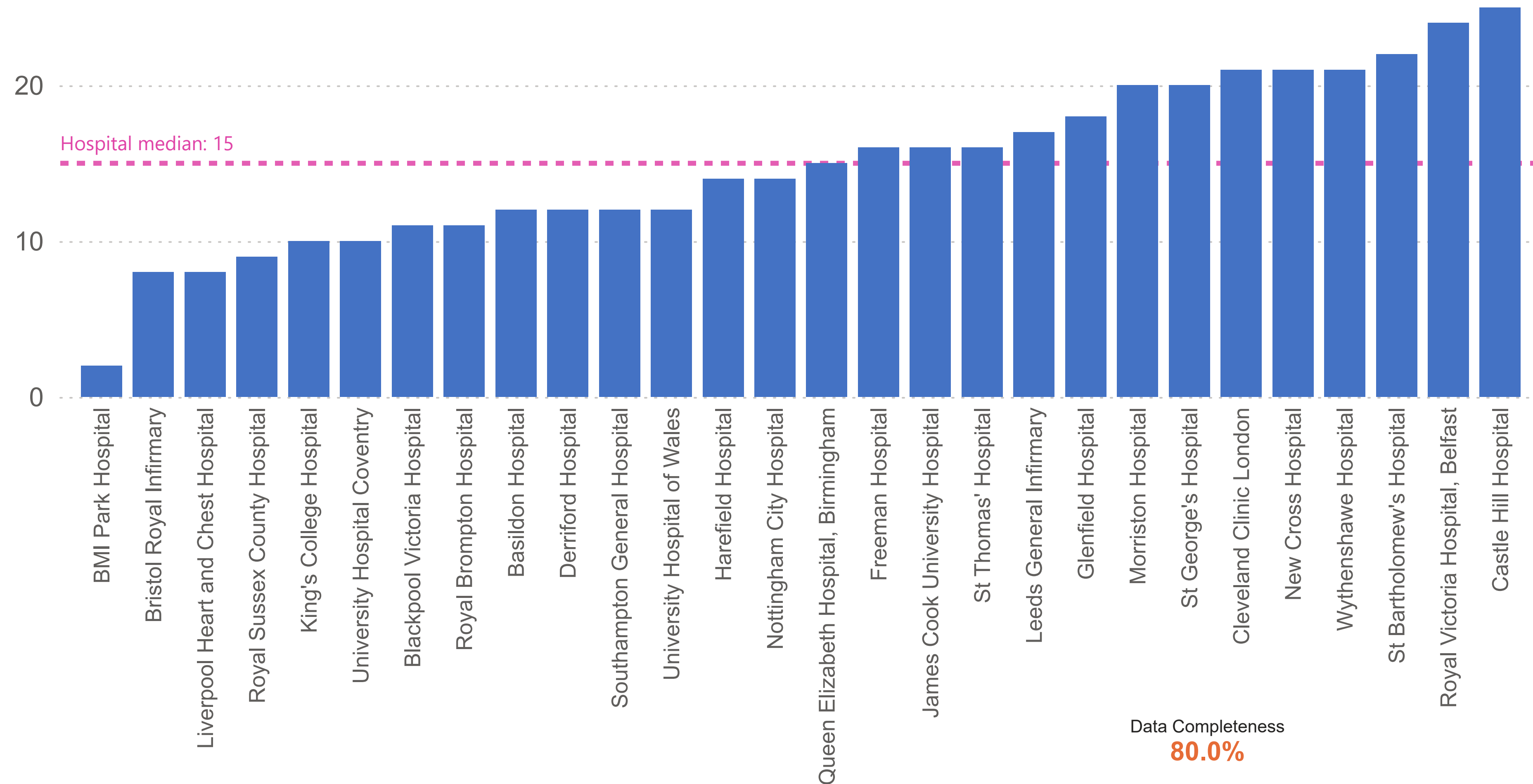
The overall length of stay (LOS) for urgent TAVI patients varies from two to 25 days across individual hospitals.

There will be many factors influencing this variation, including the total number of people requiring urgent TAVI, the reasons for needing this and the severity of the condition.

Nevertheless, the variation suggests that those centres with long lengths of stay could seek to learn from and get closer to the LOS achieved by those with shorter times.

Note: Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Length of stay (days) for people undergoing urgent TAVI



Length of stay for people needing urgent TAVI is longer than for elective TAVI, varies between hospitals, with some patients requiring an extended stay



Across all cases, half of people undergoing urgent TAVI are in hospital for 15 days or more.

Nationally, 21% of patients are discharged within five days of TAVI and 18% are still in hospital after 30 days.

This analysis shows the proportion of urgent TAVI patients discharged at each time point after admission.

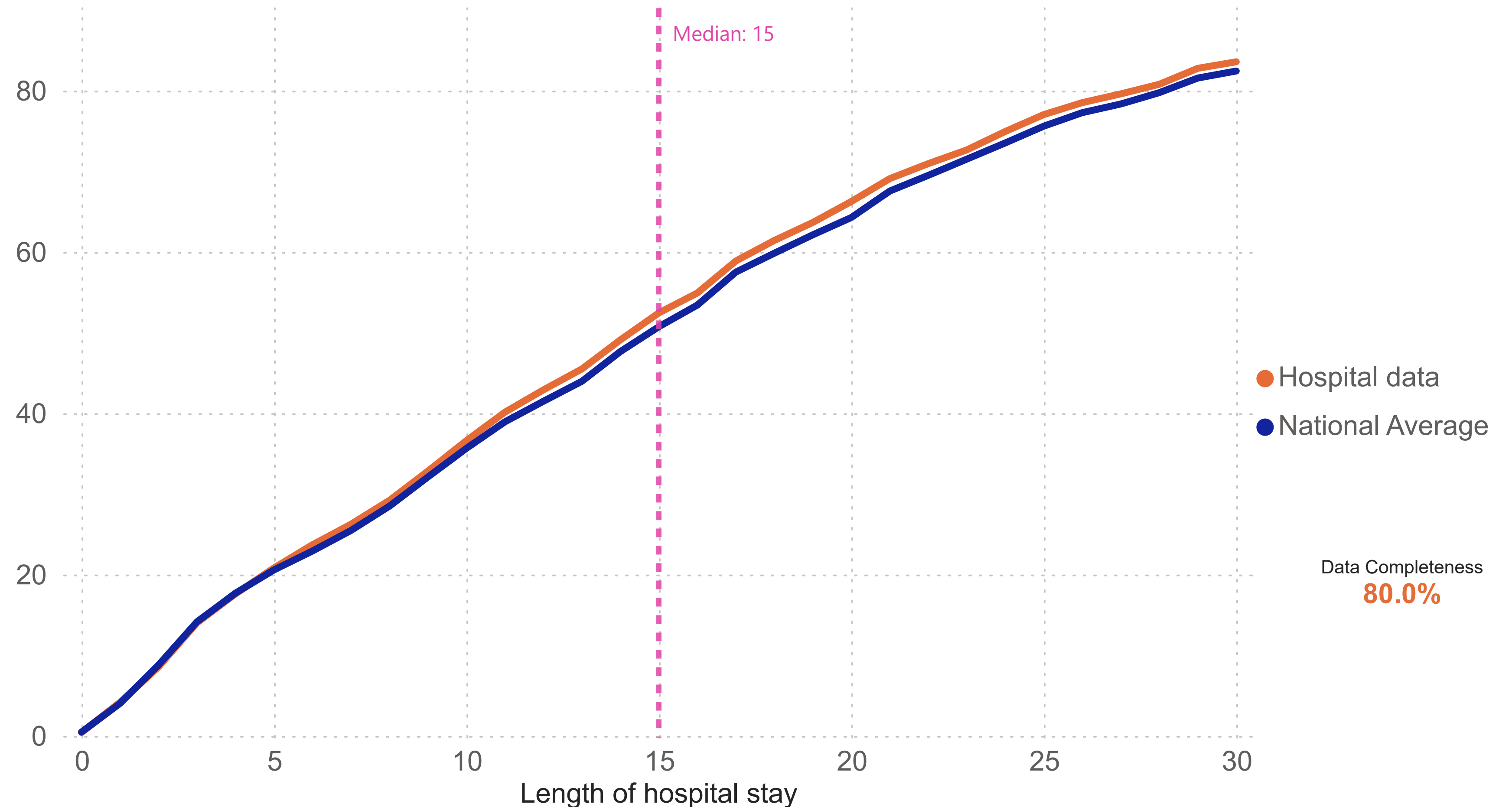
Selecting a hospital below shows the total cases for those selections over time.

Note: Hospitals with data for fewer than 20 cases are excluded. Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Select hospital

All

Cumulative percentage of urgent TAVI patients with different length of stay (days)



In-hospital mortality following a TAVI procedure has fallen and is now 0.6% for elective and 1.5% for urgent procedures



The overall in-hospital mortality rate following TAVI procedures in 2022/23 was 0.8%.

This comprised:

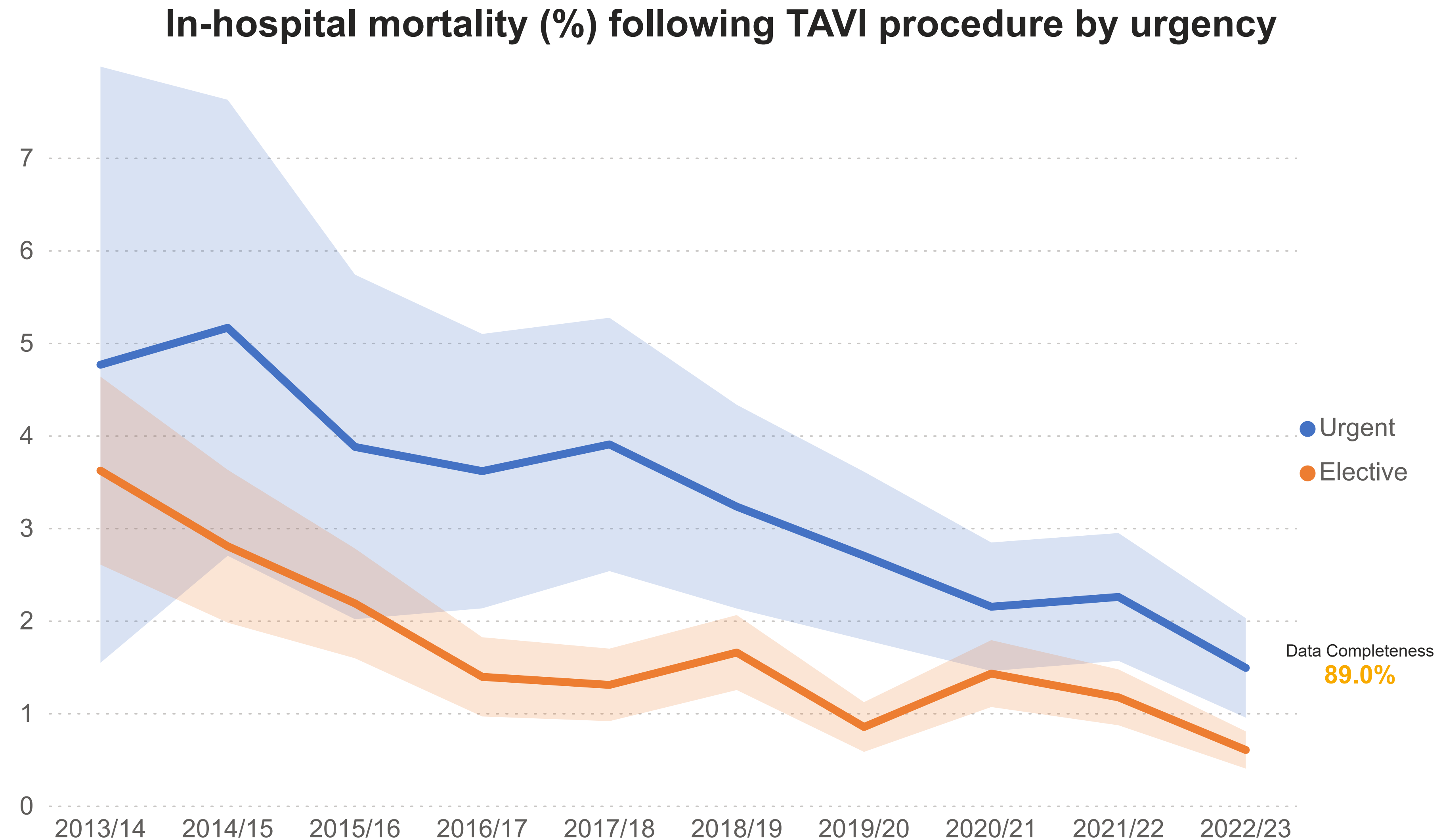
- 0.6% for elective cases
- 1.5 % for urgent cases.

The need for an urgent procedure is well-recognised as a factor contributing to worse outcomes and may reflect a number of important factors.

The survival rates have continued to improve over time.

Note: In-hospital mortality is self-reported by hospitals. Data completeness for this field is relatively low and should be taken into account when interpreting this information. The shaded areas around the lines represent the 95% confidence interval of the mean.

Key:
Shaded areas represent the 95% confidence interval of the mean line



30-day mortality rates following TAVI procedures have fallen over time but there still remains a risk of death shortly after hospital discharge



Survival rates following TAVI procedures have continued to improve over time.

In 2022/23, the 30-day mortality rate for elective cases was 1.3%, a significant improvement from the previous year.

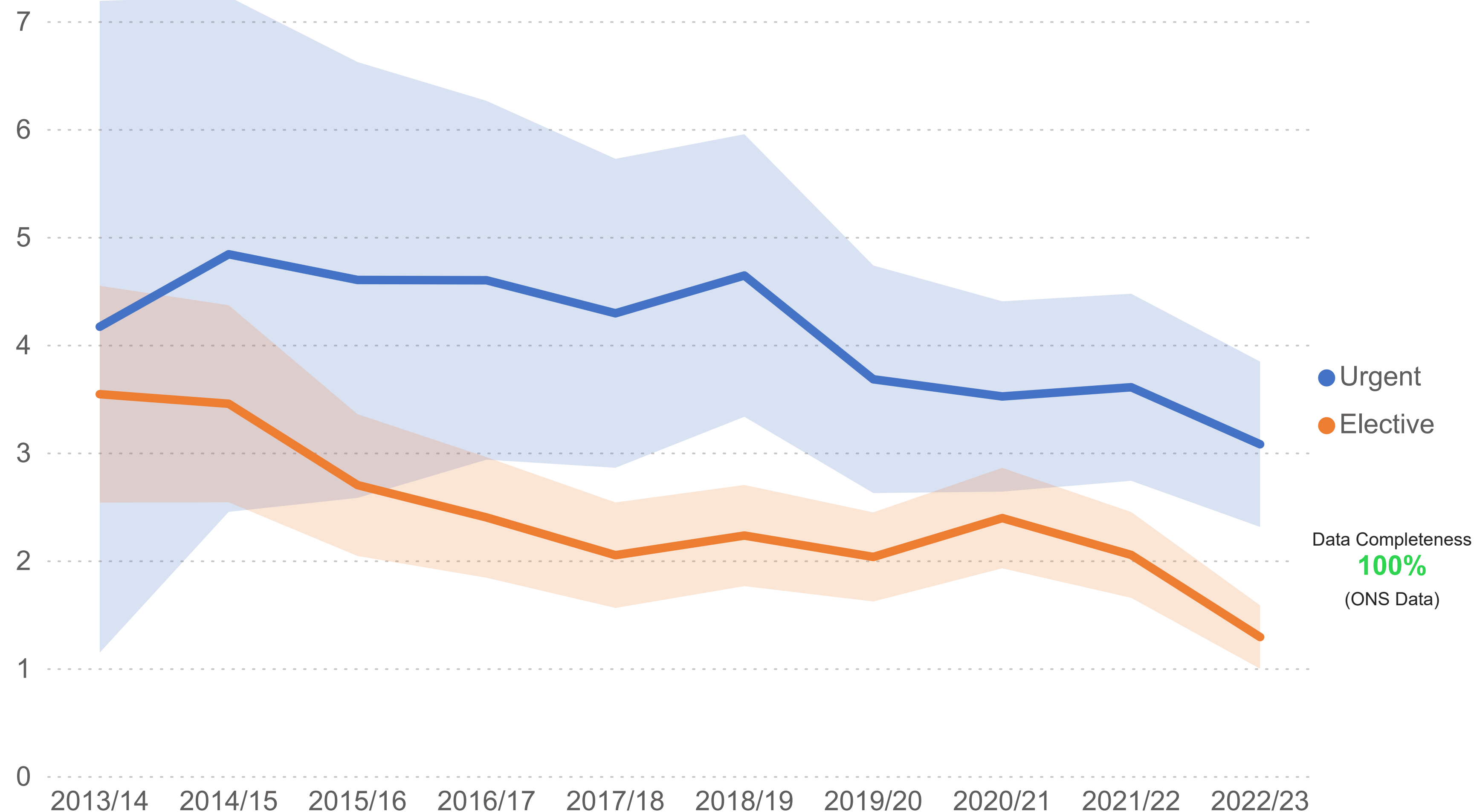
As in-hospital mortality for these cases is 0.6%, there are a similar proportion of deaths after hospital discharge. The reasons for these early deaths need further assessment.

In 2022/23, the 30-day mortality for urgent cases was 3.1%. Again, around half the deaths are after hospital discharge. The reasons behind these early deaths need to be explored.

Note: The 30-day mortality rate following TAVI procedures is obtained from the Office of National Statistics (ONS). Data completeness for this field is externally validated through ONS.

Key:
Shaded areas represent the 95% confidence interval of the mean line

30-day mortality (%) following TAVI procedure by urgency



The percentage of patients suffering an in-hospital stroke after a TAVI procedure has halved over the last 10 years

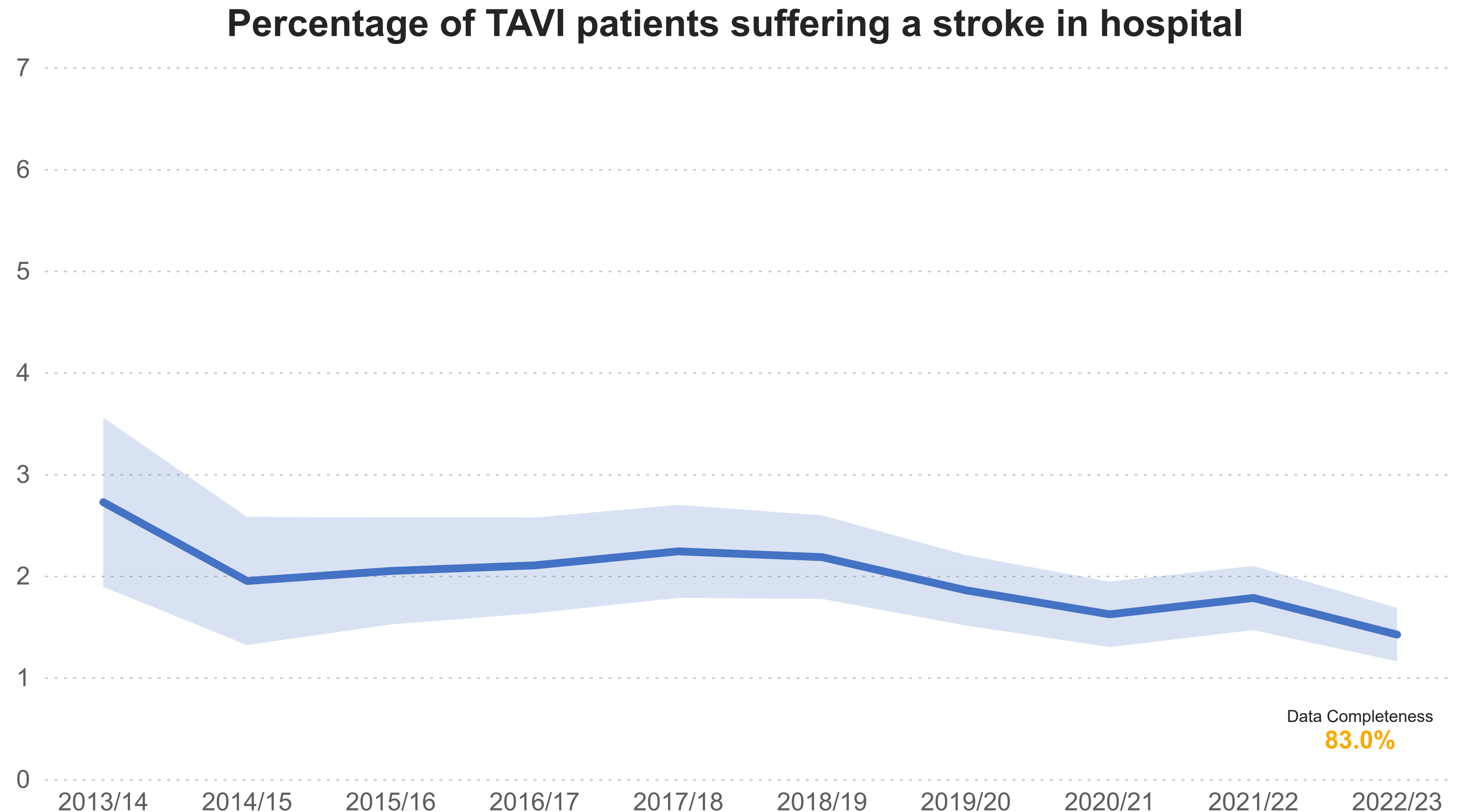


The incidence of stroke as a complication after a TAVI procedure was 1.4% in 2022/23.

This figure has halved over the last decade, from 2.7% in 2013/14.

Note: In-hospital stroke rates are self-reported by hospitals. Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Key:
Shaded areas represent the 95% confidence interval of the mean line



Data Completeness
83.0%

The rate of major bleeding after a TAVI procedure has fallen to 1% in 2022/23

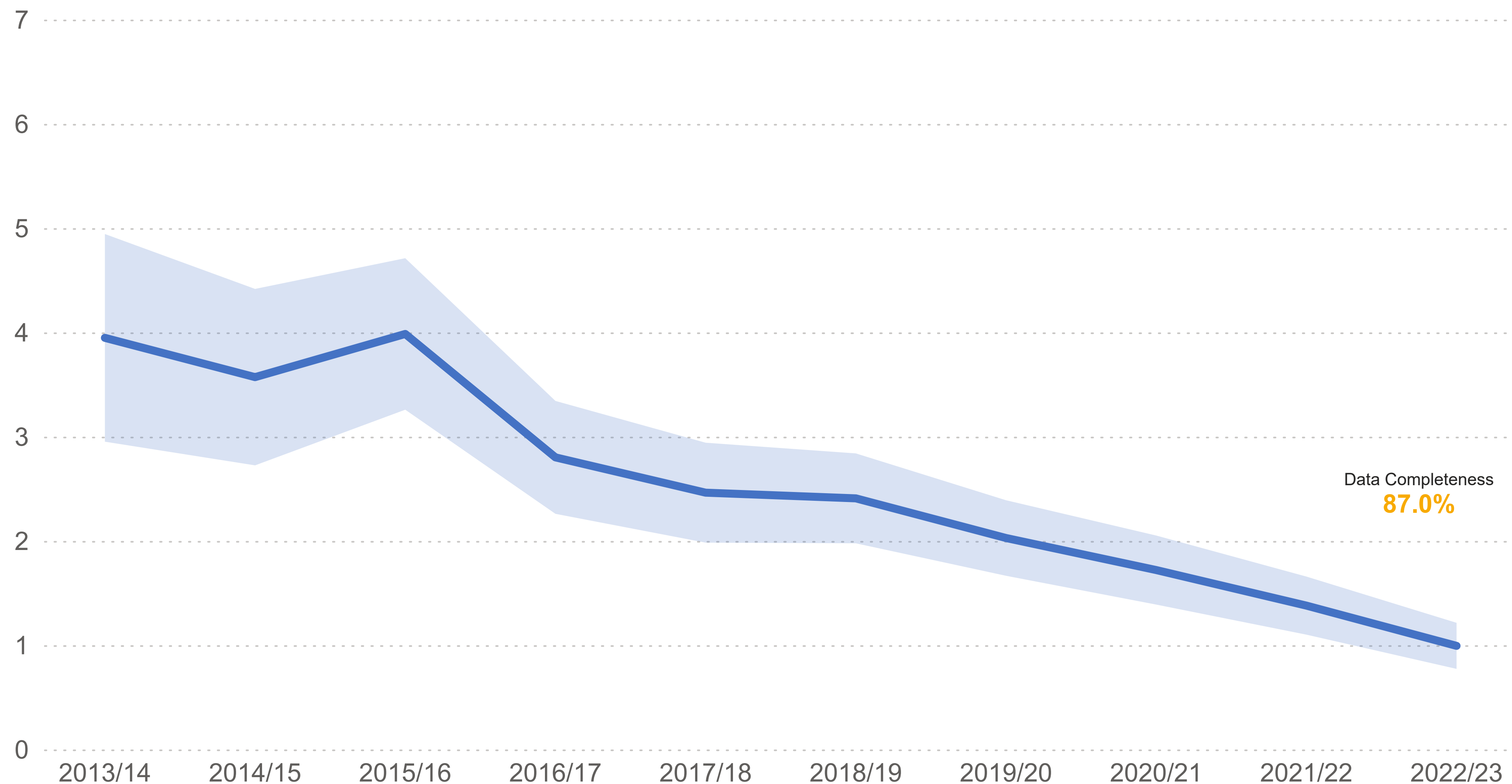


Percentage of TAVI patients suffering major bleeding

The rate of major bleeding occurring in hospital after a TAVI procedure continues to fall and was 1% in 2022/23.

Note: Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Key:
Shaded areas represent the 95% confidence interval of the mean line



Major vascular access complications after TAVI are reducing and occurred in 1.4% of procedures in 2022/23

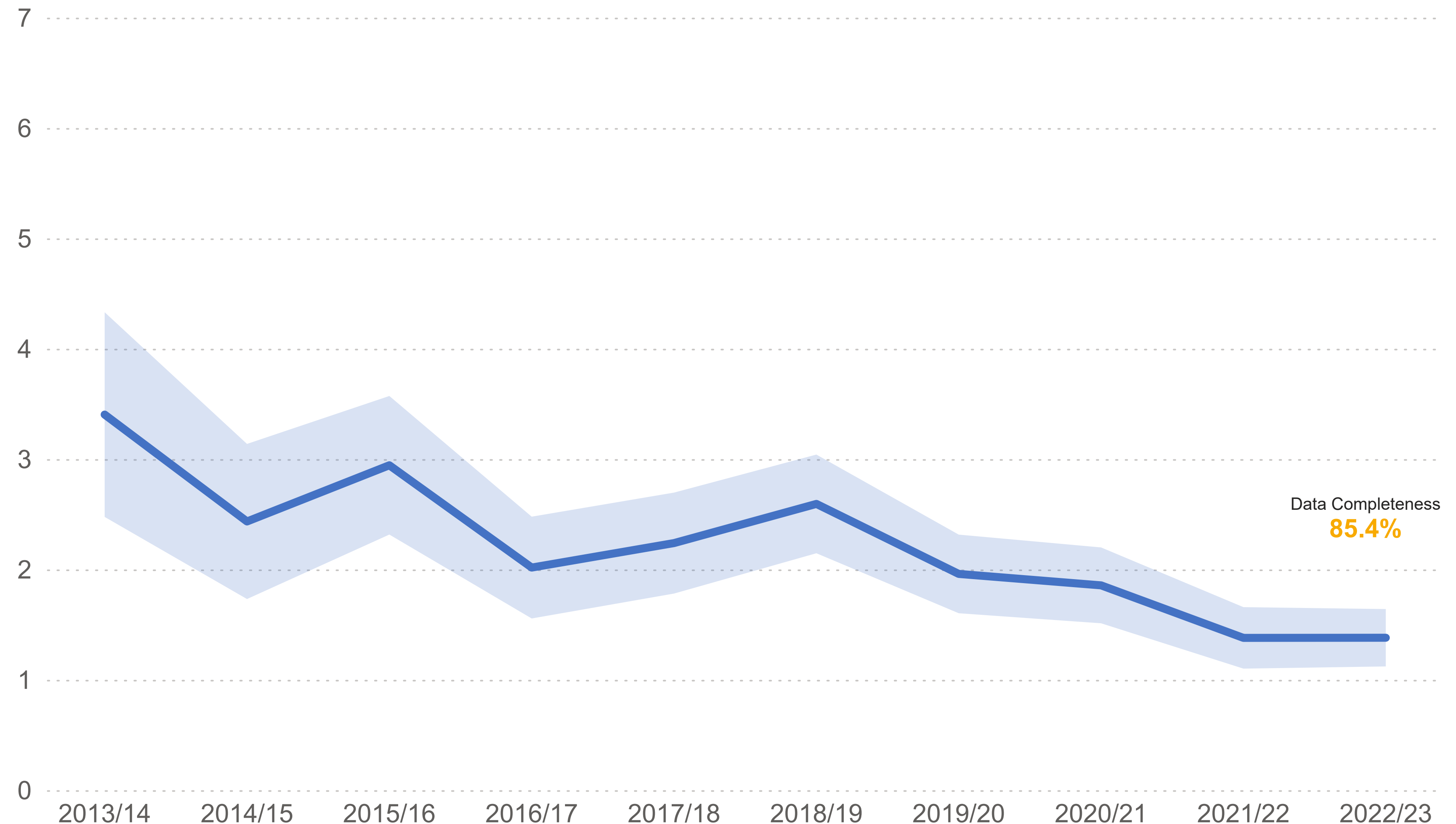


The rate of major vascular access complications occurring in hospital was 1.4% in 2022/23, continuing a drop in this figure over the last 10 years.

Note: Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Key:
Shaded areas represent the 95% confidence interval of the mean line

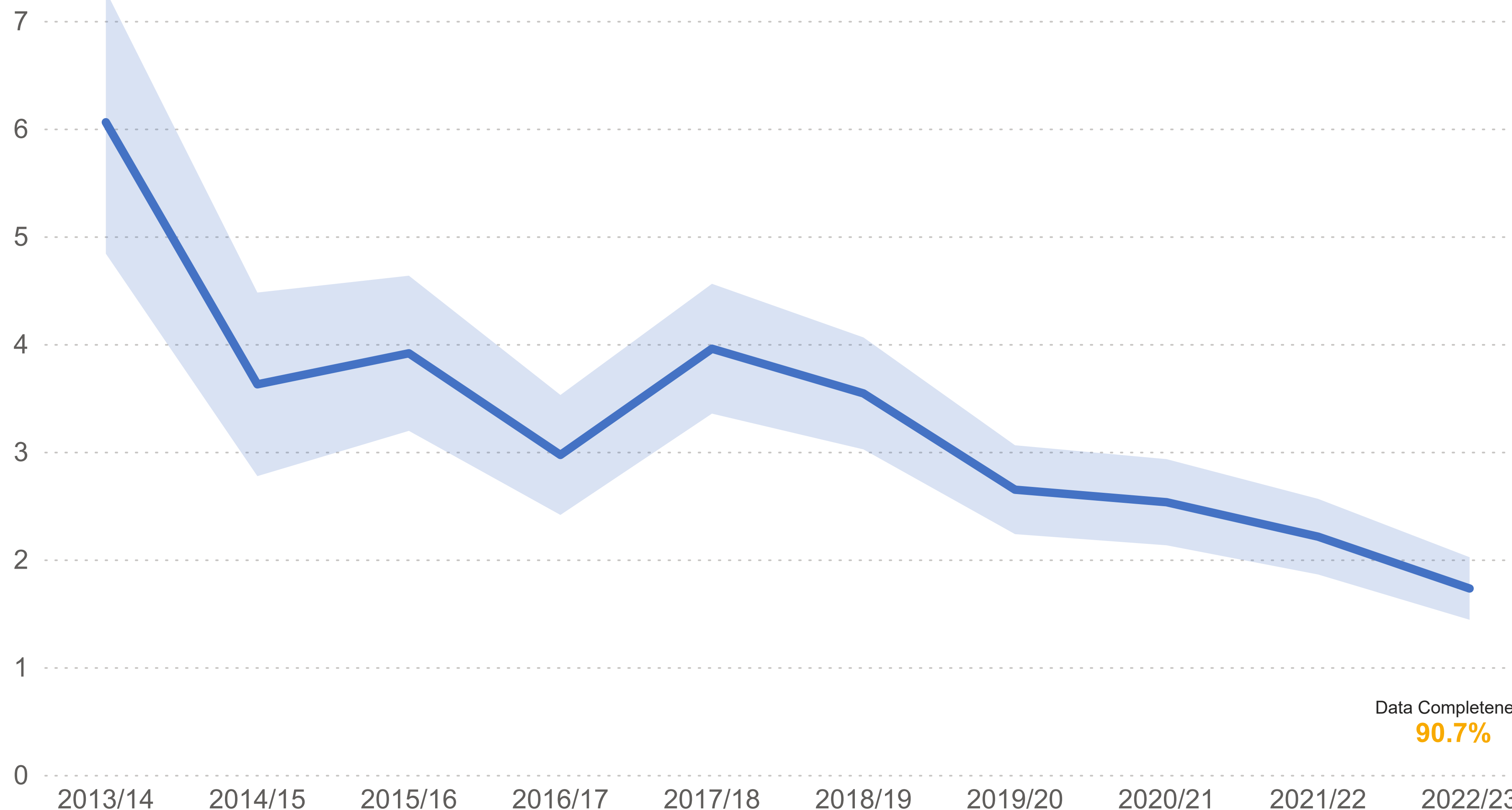
Percentage of TAVI patients suffering major vascular access complications



The incidence of moderate or severe aortic regurgitation after TAVI procedures has fallen to 1.8%



Percentage of TAVI patients suffering moderate or severe aortic regurgitation



The proportion of TAVI patients with moderate to severe aortic regurgitation reduced to 1.8% in 2022/23.

Note: Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Key:
Shaded areas represent the 95% confidence interval of the mean line

Data Completeness
90.7%

The proportion of TAVI patients being treated with a permanent pacemaker before, during or after TAVI has fallen to 7.8% in 2022/23



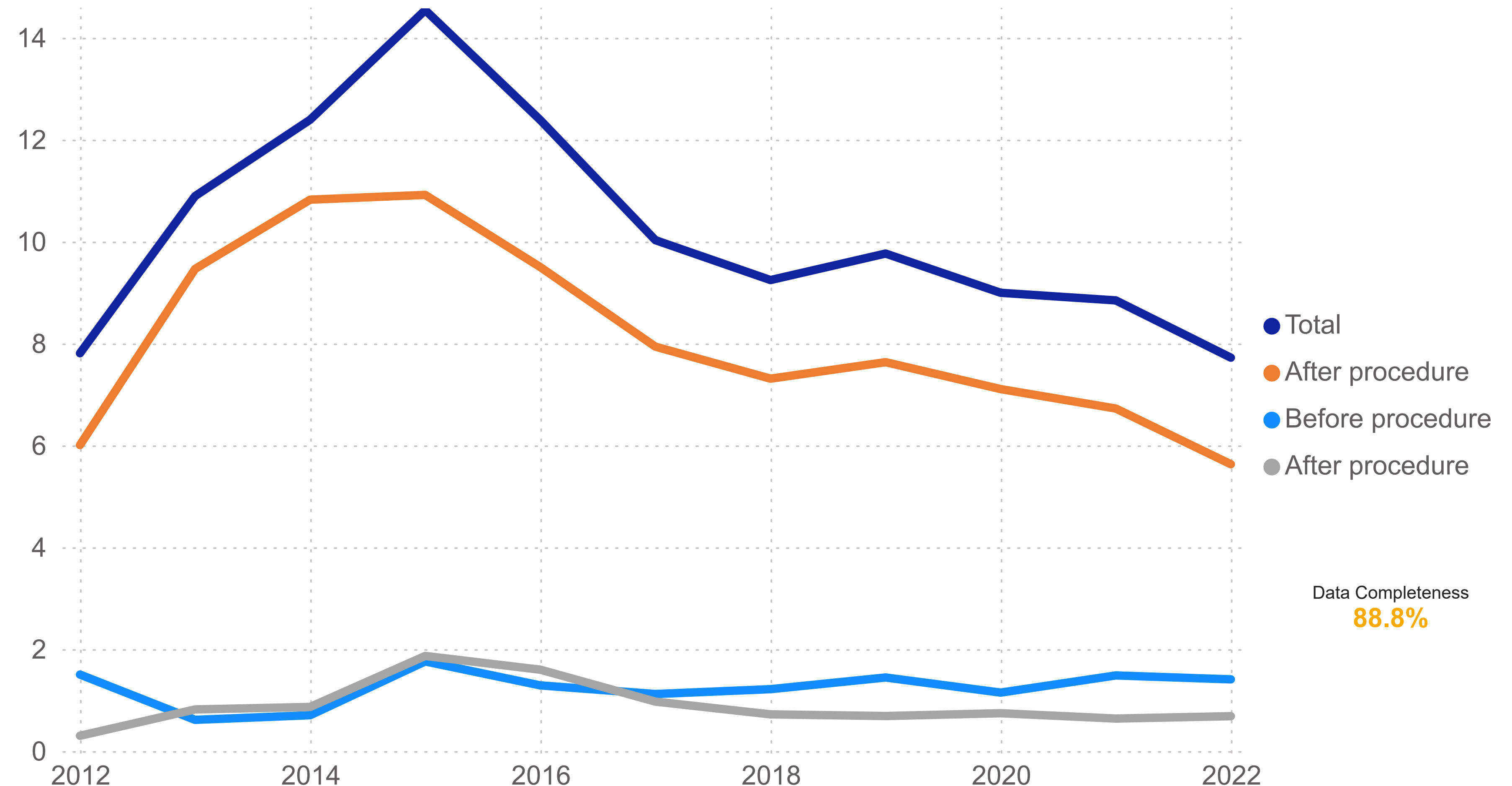
In 2022/23, the proportion of patients treated with a permanent pacemaker (PPM) in relation to their TAVI treatment was 7.8%.

This comprised:

- 1.4% of people treated with a PPM prior to the TAVI procedure
- 0.7% receiving a PPM during the TAVI procedure
- 5.7% having a PPM inserted after the TAVI procedure.

Note: Data completeness for this field is relatively low and should be taken into account when interpreting this information.

Percentage of TAVI patients requiring a permanent pacemaker (before, during and after a TAVI procedure)



Data Completeness
88.8%