

Getting to the heart of care for patients with structural heart disease in England

Executive overview

This report was produced by HSJ Information and supported by an educational grant from Edwards Lifesciences. HSJ Information maintained full editorial independence and control over the report's content and conclusions.

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October 2026



British Heart Valve Society
Improving Care for Patients with Heart Valve Disease



**British Society
of Echocardiography**



**Primary Care
Cardiovascular
Society**

Empowering primary care to deliver
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Introduction



Introduction

We created a State of the Nation report to describe the current condition of care for structural heart disease (SHD) in England.¹

We aimed to:

- identify challenges, inefficiencies and inequalities where the system is failing its patients with SHD
- highlight areas of good practice introduced to streamline services and make best use of available resources to improve patient outcomes and experience

in order to:

- provide evidence to encourage and support integrated care boards (ICBs), cardiac networks and other relevant bodies to identify challenges in management of SHD nationally and locally

so they can:

- take meaningful action and direct resources to where they are needed most.

The broad range of SHD means that a vast amount of information is available, and we therefore needed to narrow our scope for the purposes of our report. We chose to focus on valvular heart disease (VHD) – one component under the umbrella of SHD – and, for some sections of the report, we focused further on aortic valve disease, which includes aortic stenosis (AS), the most common and serious form of VHD, and aortic regurgitation (AR).

To develop our report, we used a combination of sources.

Relevant data from the literature including national guidance and policy



- To form a picture of good practice in the management of SHD. *For this, we focused on VHD and further on aortic valve disease.*

Interviews with key stakeholders



- To provide insights from people working at the frontline of the NHS on the current management of SHD.

Analysis of Hospital Episode Statistics (HES) data



- To demonstrate how patients with VHD are being managed in real-world clinical practice.

Our large-scale population-based observational study reports figures from the HES database,² across the VHD patient pathway from diagnosis, clinical assessment through to intervention, focusing on transcatheter aortic valve implantation (TAVI) and surgical aortic valve replacement (SAVR), for patients treated in NHS hospitals in England from 1 April 2022 to 31 March 2025.

Detailed study methods are provided in our full report.

This document provides an overview of the findings of our report and our recommendations to improve care for patients with SHD and VHD.

“There are problems along the whole [SHD] pathway, including detection and diagnosis, imaging, clinic review and intervention.”

“The underlying issue is lack of capacity.”

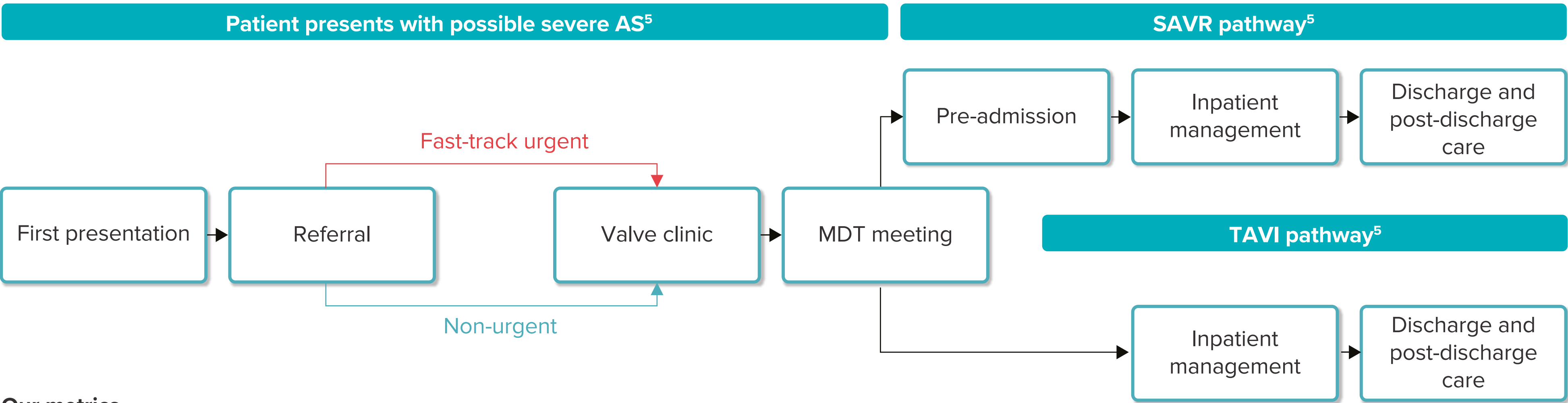
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Data mapped against GIRFT’s aortic valve disease pathway in England

We used the GIRFT 8-week pathway⁵ to identify metrics available in the HES dataset,² used under licence from NHS England, that would complement existing audit data.^{6–8}

We used the data to gain insights into the burden of aortic valve disease on the NHS and the capacity and workforce in the NHS to meet that demand. We also looked for inequalities throughout the pathway, where appropriate data were available.

GIRFT 8-week pathway



Our metrics

Incidence/prevalence	Diagnosis		Intervention				
<ul style="list-style-type: none">Incidence/prevalence of severe symptomatic ASProjected incidence/prevalence	Cardiology outpatient attendance		<ul style="list-style-type: none">Valve procedures<ul style="list-style-type: none">Counts		<ul style="list-style-type: none">TAVI/SAVR<ul style="list-style-type: none">CountsWait timesLength of stay		
	<ul style="list-style-type: none">Initial hospital attendance<ul style="list-style-type: none">CountsWait timesReferral source	<ul style="list-style-type: none">Echocardiography first attendance<ul style="list-style-type: none">CountsWait timesReferral source	Age	Gender	Deprivation	Ethnicity	Rural/urban

In 2019, the NHS Long Term Plan (LTP) committed to greater access to echocardiography in primary care to improve investigation of patients with breathlessness and early detection of heart failure and valve disease.³

However, 2 years later in 2021, Getting It Right First Time (GIRFT) acknowledged that the number of patients referred for cardiological diagnostic tests was rising but capacity was not keeping pace with this growth in demand.⁴

GIRFT guidance

GIRFT has published an 8-week pathway for managing severe AS.⁵

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What we know about VHD



In 2015, 1.5 million people aged ≥65 years in the UK had moderate or severe VHD⁹

Structural heart disease (SHD) is a term that includes all conditions that affect the heart valves, muscles, chambers or walls.^{10–16}

- **VHD is the most common form of SHD**, with an overall prevalence of 2.5% in high-income countries.¹⁰
- VHD results from **damage or defects in one of the heart valves**, most often due to degeneration or thickening of heart valves.^{10,17,18}
- VHD may be **asymptomatic in the early stages**, and patients often **present only when VHD is severe**.^{10,19}
- Aortic stenosis (AS) has the worst mortality of VHD.²⁰
 - **half of patients with untreated severe AS die within two years of symptom onset.**
 - **Three quarters die within three years.**

Early detection and treatment can help patients live longer healthier lives.³

- Most VHD is identified through a stethoscope.¹⁷
- Imaging is key to confirming diagnosis of VHD and guiding management.²¹

Prognosis depends on type of VHD and disease progression.^{23–25}

- Some patients may be monitored for years before intervention is needed.^{17,19}
- VHD causing significant symptoms or heart changes requires intervention.¹⁷
- Type of intervention depends on the affected valve, severity of valve impairment, and patient’s surgical risk.^{17,21}

Detecting and treating VHD earlier, and keeping patients on optimal care pathways, improves outcomes while reducing unplanned care and the system costs that come with it.

A 2026 report published by Heart Valve Voice found that managing a severe symptomatic AS patient on an ideal journey rather than a typical one could cut overall system costs by 51.7%, resulting in a potential saving of £35,062 per patient through fewer emergency admissions and shorter hospital stays.²²

“Long wait times are a particular problem for aortic stenosis (AS), given it is a time-sensitive condition, often with a prognosis worse than cancers but with less political clout.”

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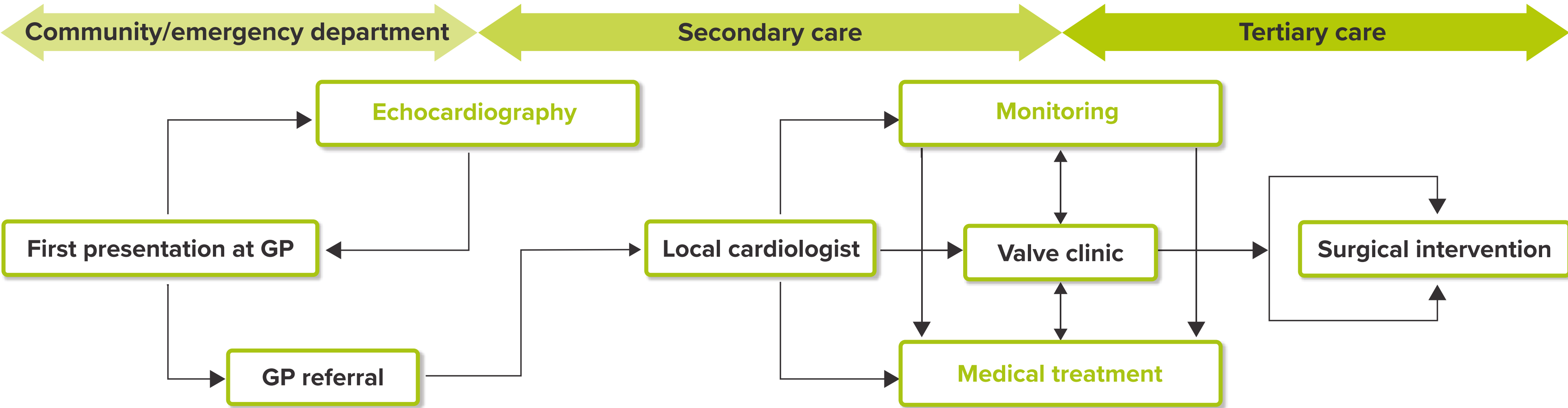
Patient pathway for VHD requires an integrated approach between primary, secondary and tertiary care settings

The pathway for a patient with VHD begins at first presentation with symptoms – typically this is in primary or community care, but, in some cases, patients may present for the first time at the emergency department.

Once a patient is suspected to have VHD, they are referred for echocardiography.

If VHD is confirmed, they are then referred to cardiology at their local hospital for assessment and management. This may involve monitoring, medical treatment where appropriate, or, for those with more severe disease, intervention through surgery or minimally invasive procedures.

If intervention is required, the patient will need to be managed at a tertiary centre experienced in specialist valve care.



“An acute shortage of echocardiographers means patients can’t get their diagnosis to then get seen by a specialist and then get treated. These workforce challenges are having a profound impact down the line on how quickly we can treat patients.”

NICE guidance

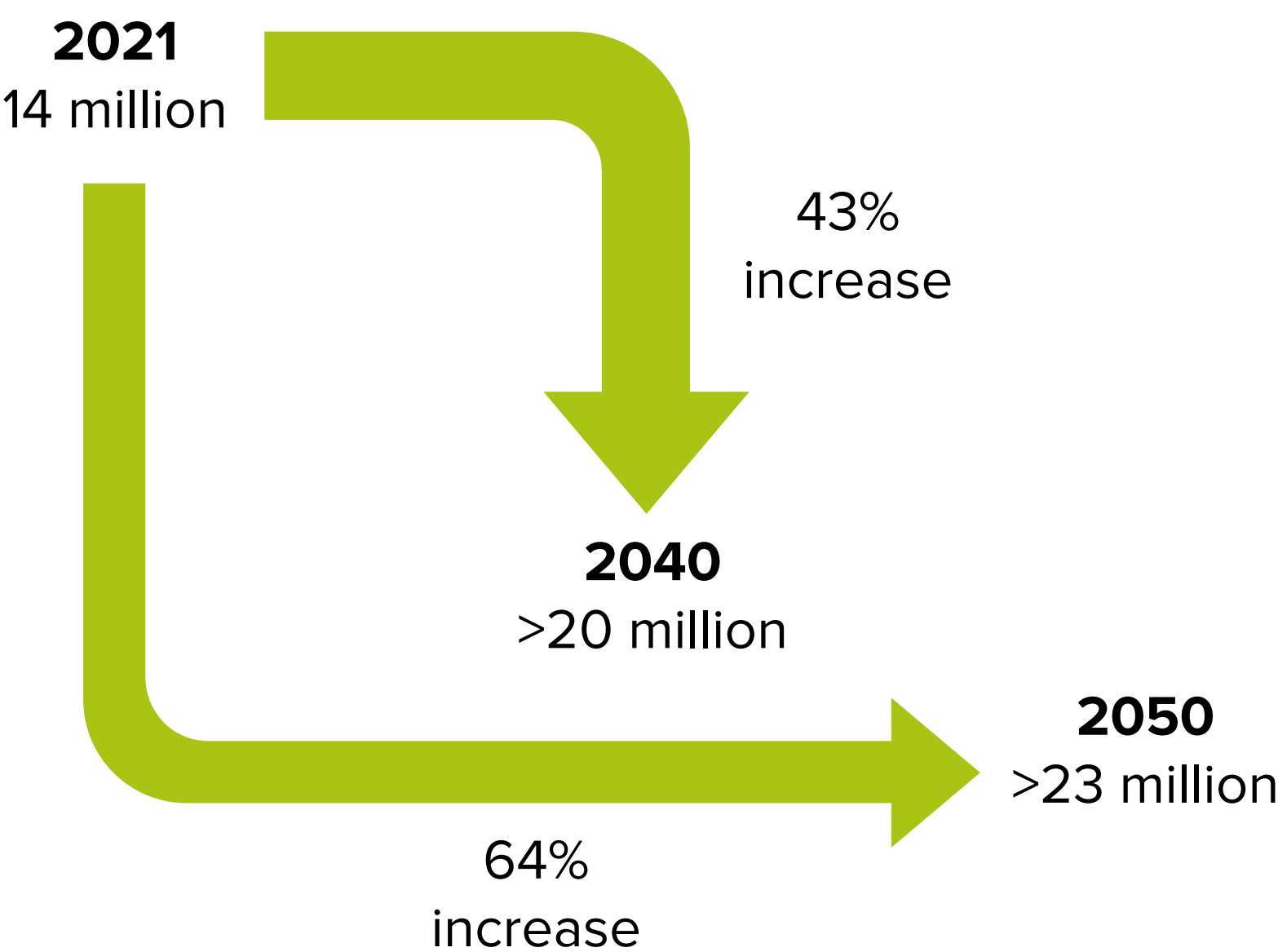
NICE has published guidance on diagnosis and management of adults with suspected VHD.¹⁹

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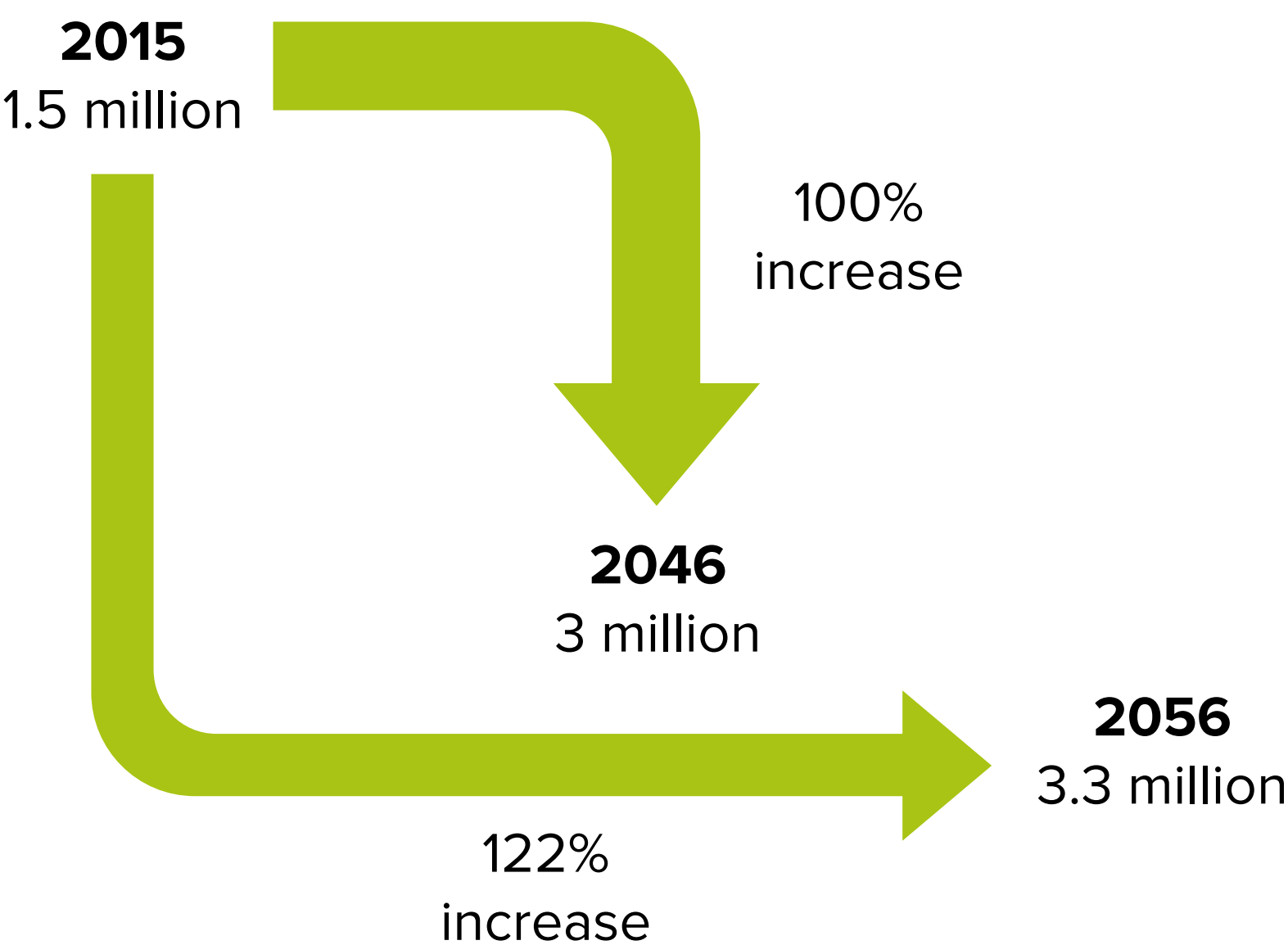
Substantial increases in VHD are expected over the next 30 years^{9,16,19,26,27}

Substantial increases in VHD are expected due to the rapidly expanding elderly population.^{9,16,19,26,27} This will have widespread implications for clinicians and healthcare resources in the UK and beyond.^{9,16,26}

Prevalence of SHD in Europe^{16,26}



Number of people aged ≥65 years with moderate or severe VHD in the UK⁹



“Valve disease is the next cardiac pandemic, one in 10 people above 65 have moderate to severe heart valve disease.”

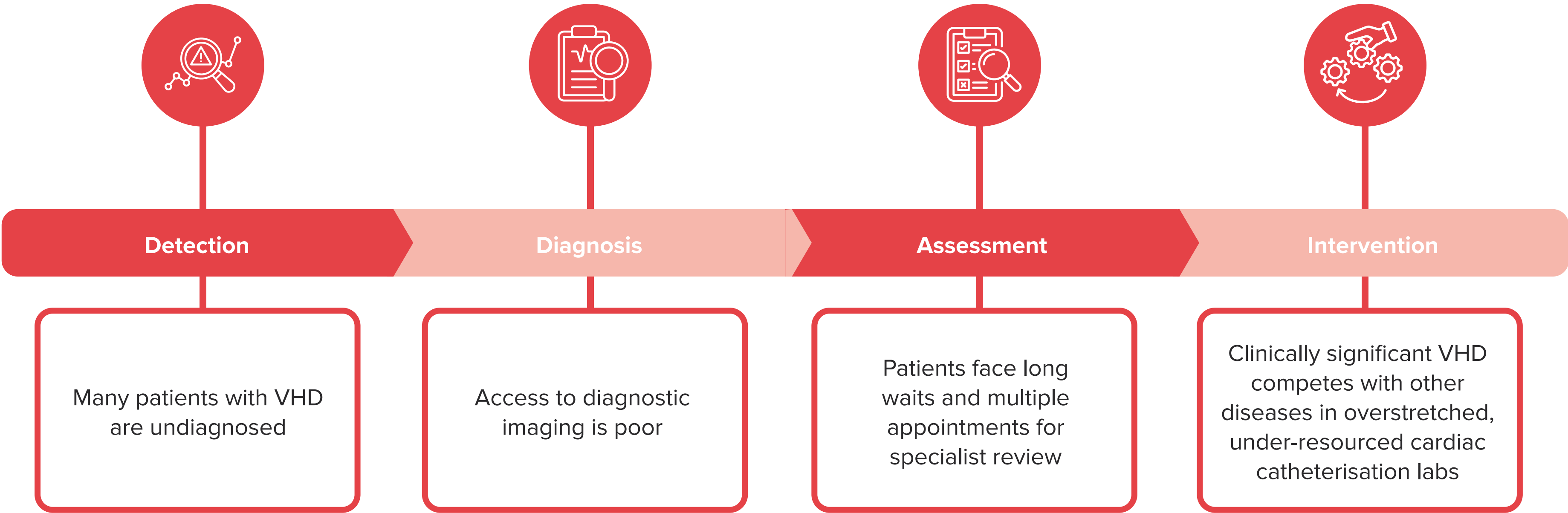
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**What our
report shows**



Key insights

Multiple issues across the VHD pathway result in poor patient experience and unnecessary deaths



Traditional pathway for patients with SHD is fragmented and convoluted.

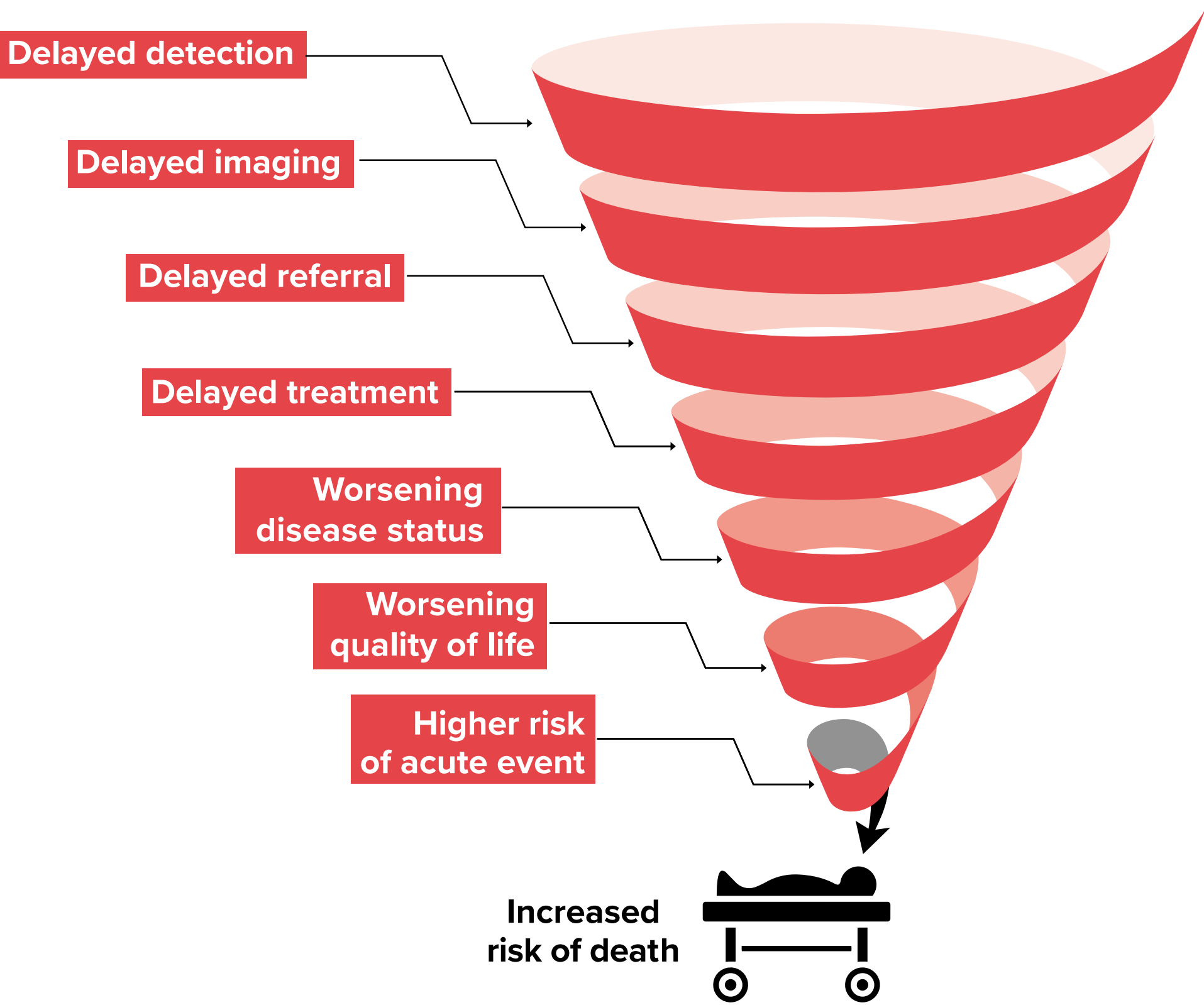
The prevalence gap of patients with undetected murmurs and cardiomyopathy is one challenge in optimising management of SHD.

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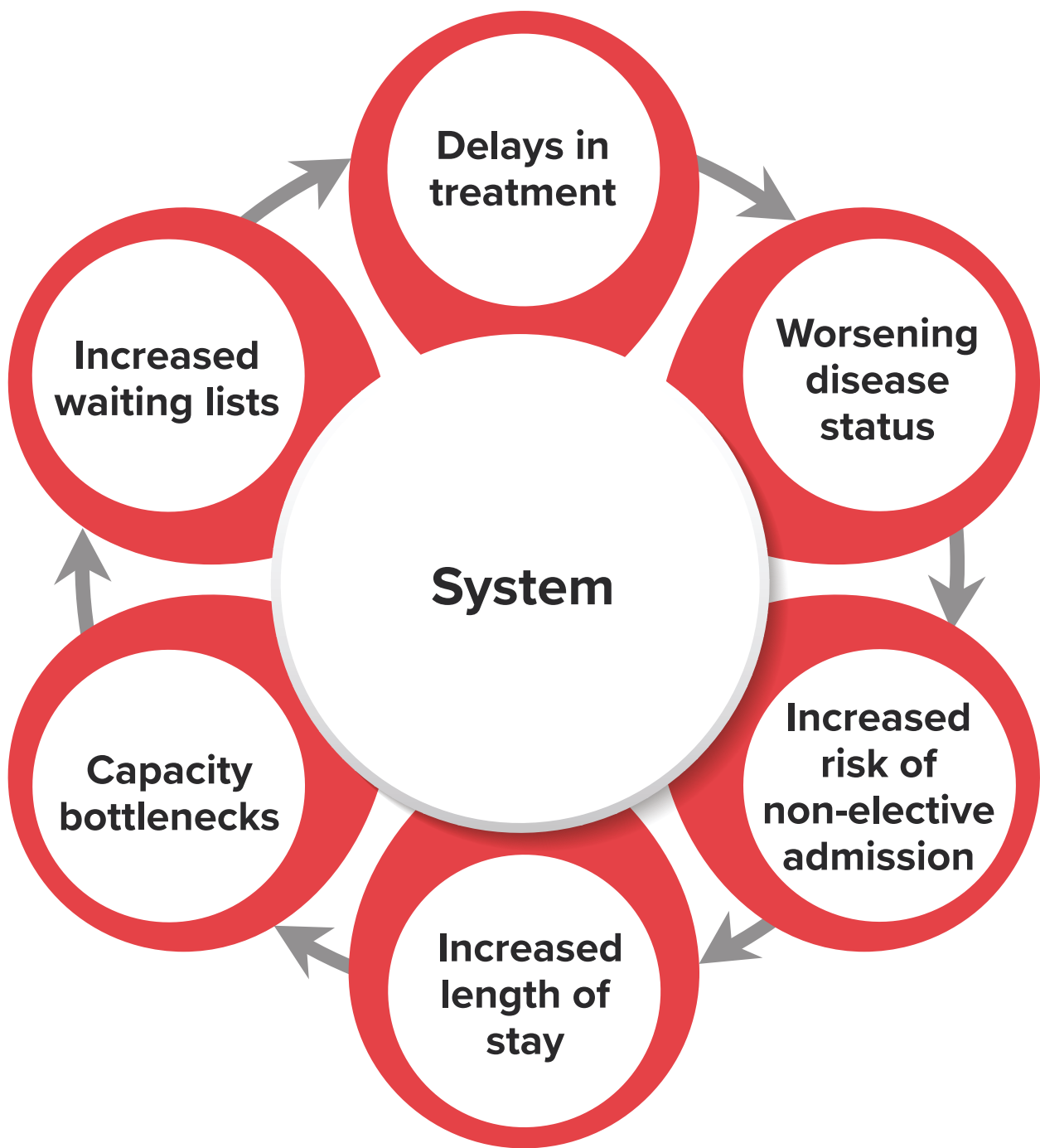
Key insights

Problems begin with detection and diagnosis...
...and end with patients deteriorating, and some dying, while waiting for treatment

Impact on patient – a downward spiral



Impact on system – a vicious circle



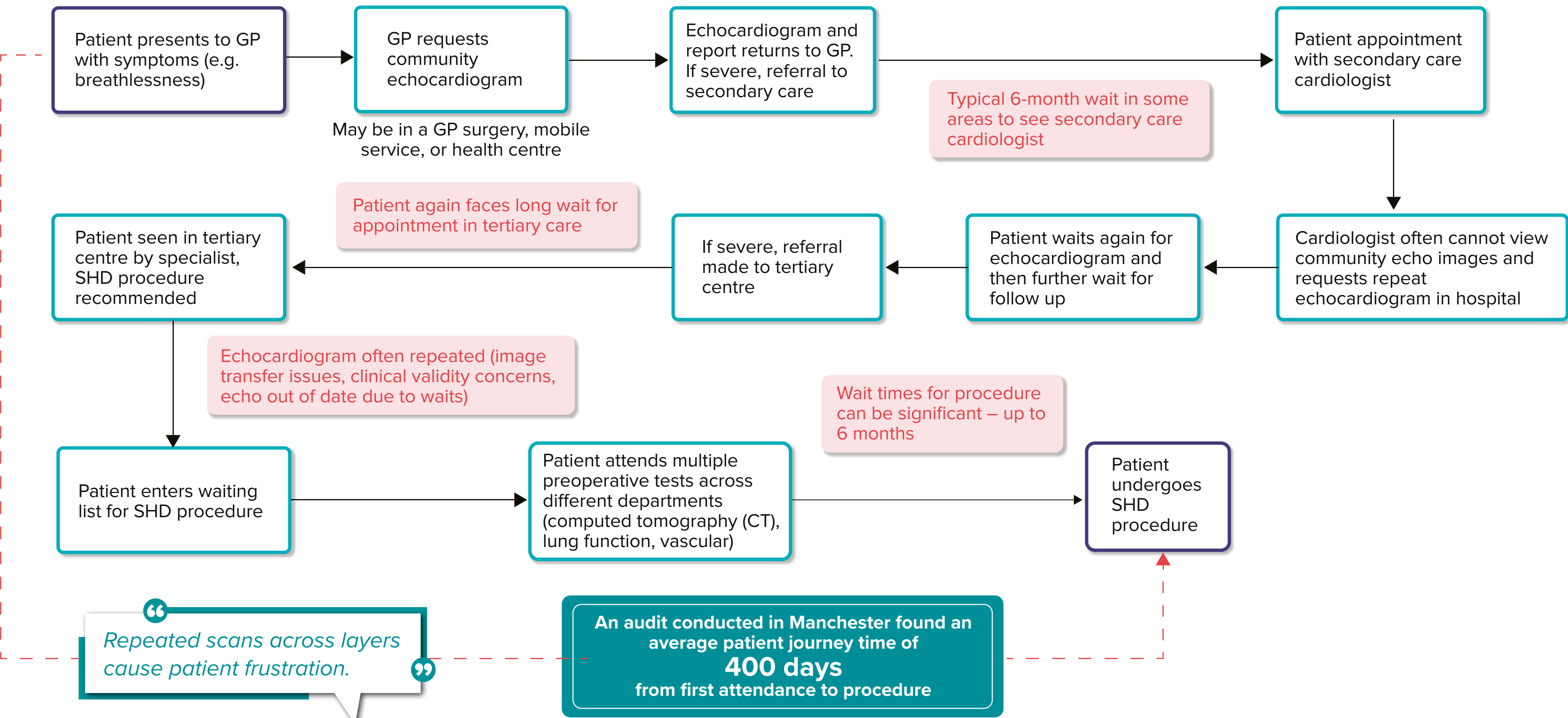
Despite pressures, the UK VHD community remains strong, collaborative and patient-centred.

But without significant funding reform, and a reorganisation of services to be more efficiently delivered using best practice examples, the UK risks falling behind global standards of care delivery.

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Traditional pathway for patients with SHD is fragmented and convoluted

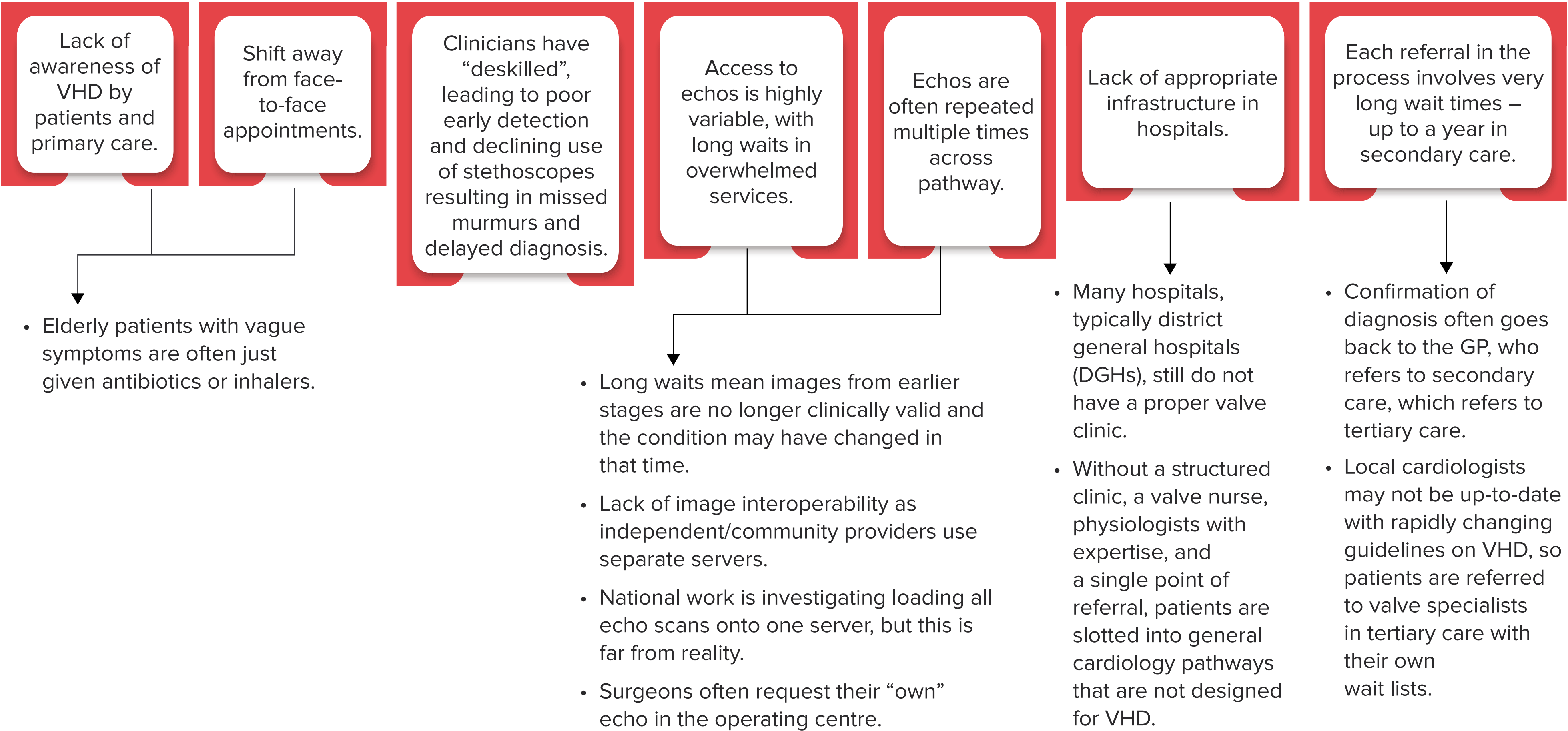
A typical SHD patient journey through the system involves multiple interactions characterised by long waits between each progressive stage.



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Problems with the pathway span the whole patient journey – beginning with detection and diagnosis

What are the issues with diagnosis?

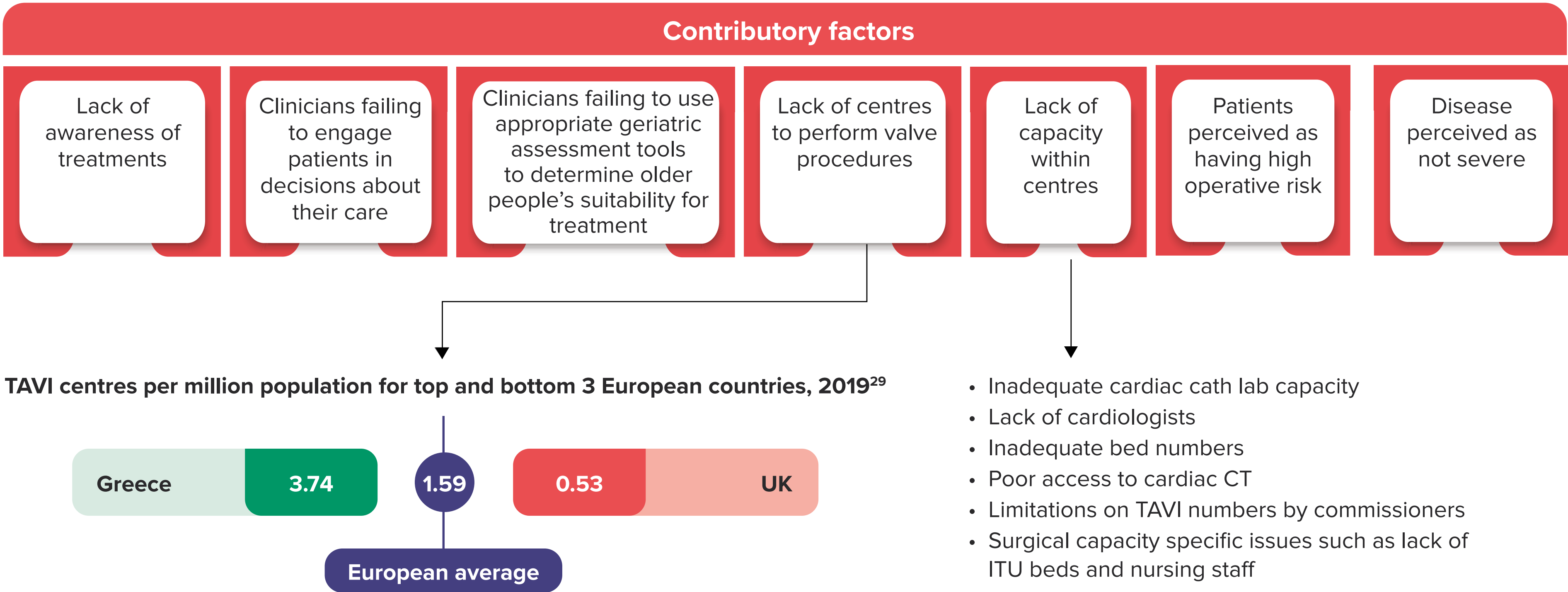


“The underlying issue [for the prevalence gap] is lack of capacity and time in primary care. If a disease is not covered by the primary care contract, it is not a priority to identify affected people, as GPs are under immense pressure and there is simply not time to check for multiple problems and opportunistic detection in 10-minute appointments.”

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Multiple healthcare-related factors contribute to lack of/delayed treatment^{20,28}

Some patients may choose not to undergo treatment, but healthcare-related factors are often involved when patients are not treated



The UK has low penetration of TAVI, with the number of TAVI procedures significantly lower than almost all other European countries and with substantial geographical inequity in access to TAVI^{29,30}

NHS England is cautious and lags behind EU guidelines that recommend TAVI for patients aged >70 years.

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Problems with the pathway span the whole patient journey – ending with patients deteriorating and some dying while waiting for treatment

What are the issues with treatment?

Lack of cardiologists contributes to undertreatment, and the shortfall is likely to worsen as specialists retire in the next 5–10 years.

Lack of cardiac surgeons similarly contributes to undertreatment, with many due to retire in the coming years.

SHD procedural options have increased and grown rapidly, putting enormous strain on hospitals, and with no new cardiac catheterisation labs expected in the near future.

- Some patients are not listed on a waiting list until months after diagnosis.
- After tertiary assessment, patients wait months for procedures due to competition in cardiac catheterisation labs for other interventions.
- Many centres struggle to list patients more than twice a week, and huge regional variations in delivery are observed.

“

The cost of not getting this right is absolutely huge.

Their symptoms deteriorate – breathlessness, fatigue, reduced exercise tolerance, chest pain – and that impacts not just physical health but mental wellbeing too. Their ability to work is affected, and that has a wider impact on society.

We saw after COVID exactly what happens when patients wait too long. The heart muscle deteriorates; scar tissue forms; the long-term benefit of fixing the valves isn’t always seen. Patients had worse outcomes, longer intensive care unit (ICU) stays, more complications, more use of ECMO [extracorporeal membrane oxygenator] machines, and many ended up being admitted repeatedly with heart failure. Early intervention makes a massive difference.

The ultimate price is that patients die – and we do see deaths on the waiting list for a condition that is entirely treatable. There is a real attrition rate: people who were

stable at diagnosis wait months, decompensate into heart failure, end up being admitted, and are in a far worse state than when the problem was first picked up.

Once they decompensate, their procedural risk goes up dramatically – an elective TAVI has a 1–2% risk, but that risk essentially doubles if the patient becomes an inpatient.

And from a system point of view, it’s a disaster: urgent inpatients take 7–8 times the number of bed-days compared with planned cases, at several hundred pounds per day, and that blocks capacity for everyone else.

So, the harm is twofold – patients come to real harm, and the NHS absorbs huge, entirely avoidable cost.

”

“

The biggest bottleneck is post-diagnosis capacity (surgeons/interventionalists).

”

“

The UK is much slower compared to other European countries and the USA. Patients may wait between 2 and 8 months, depending on:

- *where the “referral” clock starts (unclear within NHS RTT rules)*
- *regional capacity differences.*

”

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Multiple issues across the pathway result in poor patient experience and unnecessary deaths

What do VHD pathway issues mean for patients?

Undertreatment of VHD has consequences for patients and healthcare systems, including unnecessary deaths and avoidable resource use.

Significant anxiety and fears about mortality (patients increasingly research online).

Declining quality of life; many arrive “really breathless or worse.”

Loss of independence, especially as most are elderly.

Long waits for diagnosis and treatment exacerbate risks because symptomatic severe AS has prognosis “worse than many cancers.”

ICB policy supports ‘care closer to home’, which aligns with patient preference; but limited VHD centres means geography often dictates care and elderly patients particularly are disadvantaged by travel difficulties.

Older patients often rely on ambulance transport or on family members who must take time off work to accompany them.

Fragmented care across cardiology, vascular, and respiratory services.

- Patients must attend multiple appointments – often on different days and sometimes at distant tertiary centres.
- Tests (e.g., echo, lung function, vascular assessments) cannot be coordinated on the same day, leading to inefficiency and repeated investigations.
- Additional burden for patients and families, including repeated transport arrangements and patients/carers needing to take several days off work.

Limited flexibility in scheduling.

- Patients receive appointments by letter with fixed date/time and find it difficult to reschedule, increasing likelihood of cancellations and multiple journeys.

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“One of the biggest blockers is social care. Patients who are medically ready for discharge get stuck in hospital because there aren’t enough placements to move patients from hospital into social care – and this is more profoundly felt in DGHs than specialist hospitals.

It has a knock-on effect – if we can’t move patients after cardiac surgery to a DGH for further rehabilitation, patients remain in the specialist cardiac centre, but where other patients could use that bed more appropriately. That creates back pressure throughout the whole system and slows down everything else.”

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Key findings from our analyses

Estimated prevalence and incidence of severe symptomatic AS in England are increasing.

Regardless of referral source, patients are waiting 2–3 months for their first appointment in cardiology.

- GPs were the most common referrers to outpatient cardiology for any reason.
- Allied health professionals (AHPs) and accident & emergency departments (A&E) saw the highest growth in referrals.
- GP and AHP referrals have longer waits.

As echocardiography procedures increase year on year, pressure increases on already stretched services, increasing diagnostic delays.

- Wait times decreased for routine echos and secondary care referrals but increased for urgent, 2-week wait, GP and A&E referrals.
- Mean waits for routine and urgent echo referrals were longer than the 6 and 2 weeks, respectively, recommended by GIRFT and NICE.^{5,19}
- Mean waits for echos for secondary care, GP and A&E referrals were longer than the 6 weeks recommended by GIRFT and NICE for non-urgent referrals.^{5,19}

The treatment gap* in 2024/2025 was over 5,300 people.

*Difference between number of patients undergoing intervention and number expected to undergo SAVR or TAVI for severe symptomatic AS.

More than one-quarter of aortic valve replacement (AVR) procedures nationally are performed non-electively.

- Decision to proceed with SAVR is made 2 weeks earlier than for TAVI.
- Equivalent wait time for elective intervention is 7 weeks longer for SAVR.

At a national level, mean length of stay (MLOS) is much longer for non-elective SAVR and TAVI compared with elective SAVR and TAVI.

- Non-elective and elective TAVI procedures have shorter LOS than equivalent SAVR procedures.
- When TAVI is non-elective, overall LOS is longer than for elective SAVR.
- Mean postoperative duration is 1.3–1.6 times longer after non-elective than elective procedures.

Estimated prevalence and incidence of severe symptomatic AS in England are increasing

As part of our analysis of aortic valve disease care, we estimated the prevalence and incidence of severe symptomatic AS in England.

The estimated prevalence and incidence of severe symptomatic AS have increased steadily between 2022 and 2024.

Substantial increases in VHD are expected due to the rapidly expanding elderly population.^{9,16,19,26,27}

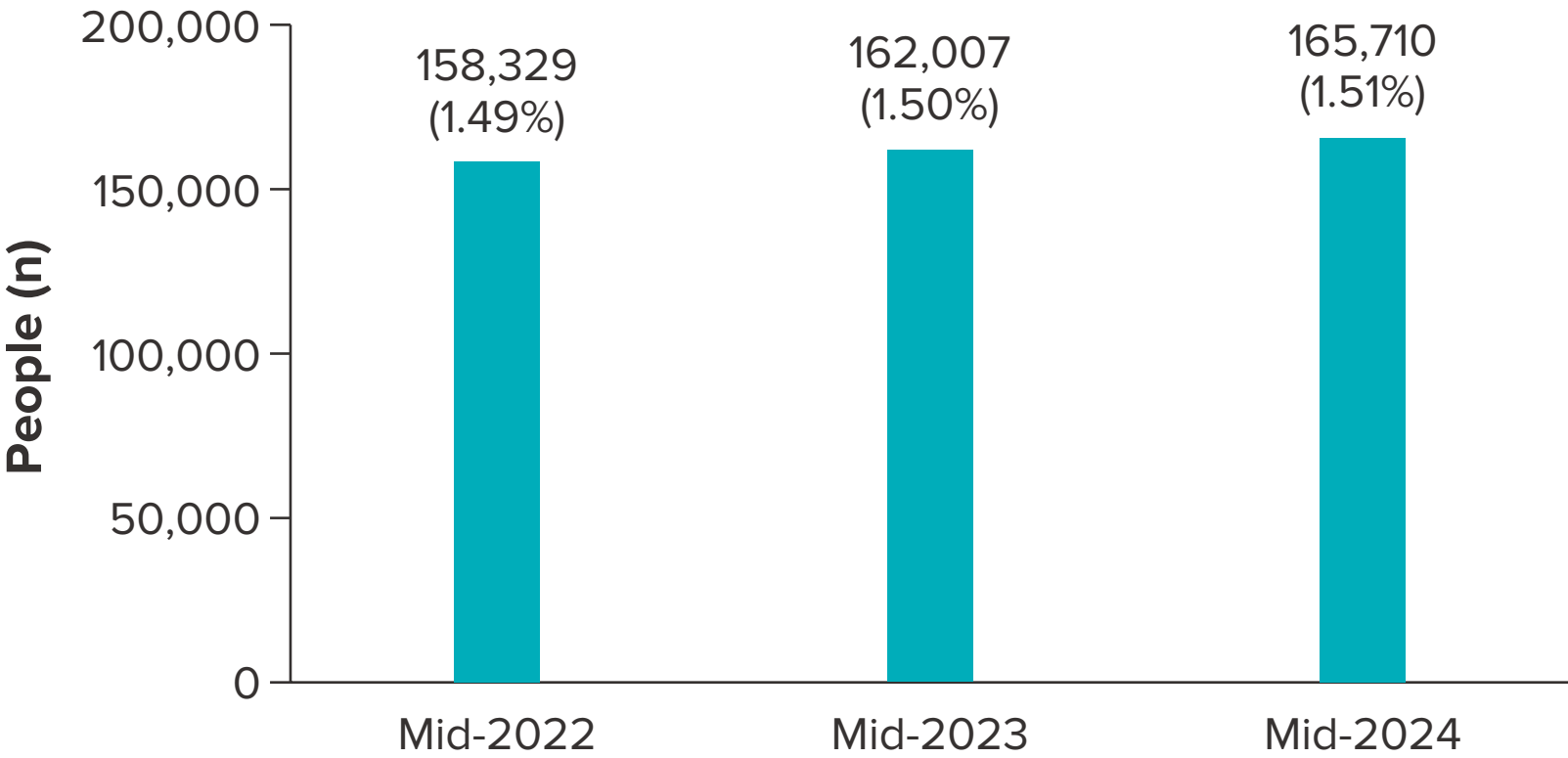
In the UK, the number of people aged ≥65 years with moderate or severe VHD is expected to double from 1.5 million in 2015 to 3 million by 2045 and to increase by a further 22% to 3.3 million by 2056.⁹

We estimated the number of people aged ≥65 years with severe AS in England by applying age-specific estimates of severe AS prevalence reported by Strange *et al* (2022)³¹ to Office for National Statistics mid-year population estimates for England and individual ICBs.³² We then used Strange *et al*'s estimate that 68.3% of all patients aged ≥55 years with severe AS will be symptomatic to determine the number of people aged ≥65 years* with severe symptomatic AS at national and ICB levels.³¹

We also estimated the number of new cases of severe AS within the population aged ≥65 years by applying the age-specific estimates of severe AS incidence in Australia from Strange *et al* (2021) to ONS mid-year population estimates for ICBs.³³

*The work by Strange *et al* included patients aged ≥55 years; however, the prevalence of severe AS within the population aged 55-64 years represented only 0.5%, so our estimate focuses on patients aged ≥65 years.³¹

Estimated prevalence of severe symptomatic AS in people aged ≥65 years in England, 2022–2024



Detailed study methods are available in our full report.¹

Higher volumes of referrals from primary care are driving up wait times, when not all patients need secondary care referrals

Our data for first cardiology outpatient appointments are not specific to VHD; however, patients with suspected VHD will be among the patients covered by these appointments.

With improved detection of cardiac disease, including VHD, in primary care through public awareness initiatives and service innovations, such as those described our full report,¹ the number of cardiology referrals from GPs and AHPs will continue to increase.

The longer wait times for these referrals may reflect generally less severe disease identified in the community than identified via secondary care or A&E. However, some patients are likely to have severe disease and it is important that they are seen in a timely manner.

“Wait times for GP referrals are increasing because of the increase in referrals to cardiology from primary care. So there is a big increase in referrals, half of which don’t need to be seen, but [patients] are referred in for clinic appointments and the pressure on outpatients has gone up, and so has the mean wait times for clinic appointments. It’s partly to do with general practice not coping, with other people referring patients in without proper triaging of patients, it’s a problem in general with outpatient waits. It’s de-skilling of primary care, and a number of other non-clinicians will refer patients in on a triage system, and over 50% don’t really need a cardiology outpatient appointment.”

GPs were the most common referrers to outpatient cardiology for any reason, but AHPs and A&E saw the highest growth in referrals.

Regardless of referral source, patients are waiting between 2 and 3 months for their first appointment in cardiology.

		GPs	Secondary care	A&E	AHPs
Referrals	2024/2025	544,545	315,010	88,200	3,985
	Per annum change 2022/2023–2024/2025	6.2%	1.9%	17.9%	15.9%
Mean wait time	2024/2025	81.1 days	61.2 days	66.1 days	88.4 days
	Per annum change 2022/2023–2024/2025	12.7%	0.6%	2.3%	0.6%

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GIRFT and NICE recommendation times for echocardiography referrals are not being achieved nationally

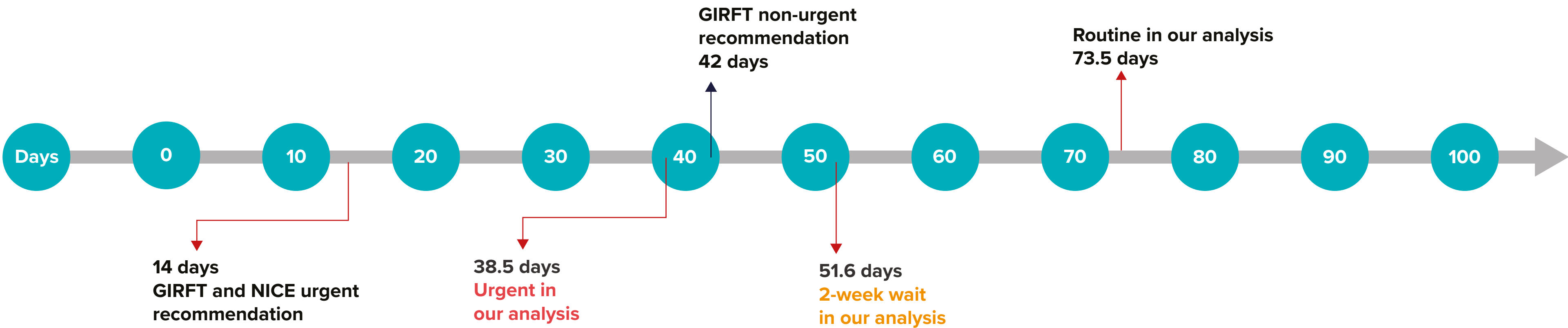
Mean waits for routine and urgent echocardiography referrals were longer than the 6 and 2 weeks, respectively, recommended by GIRFT and NICE for patients with known VHD on patient-initiated follow-up (NICE) and patients with severe AS (GIRFT).^{5,19}

Referrals coded as urgent waits are only 3.5 days shorter than the GIRFT routine recommendation of 42 days.⁵

Referrals coded as 2-week waits are 9.6 days longer than the time recommended for routine (GIRFT non-urgent) referrals.⁵

Both urgent and 2-week wait times have also been increasing.

Mean wait times for echocardiography procedures by priority: GIRFT and NICE recommendations^{5,19} versus 2024/2025 in our analysis



Our HES analysis only looked at outpatient cardiology first attendances for echocardiography.

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As echocardiography procedures increase year on year, pressure increases on already stretched services, increasing diagnostic delays.

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A&E referrals for echocardiography procedures were approaching 100 days

Mean waits for echos for secondary care, GP and A&E referrals were longer than the 6 weeks recommended by GIRFT and NICE for non-urgent referrals.^{5,19}

Waits for echos following secondary care referrals decreased by 3.9 days during our study period.

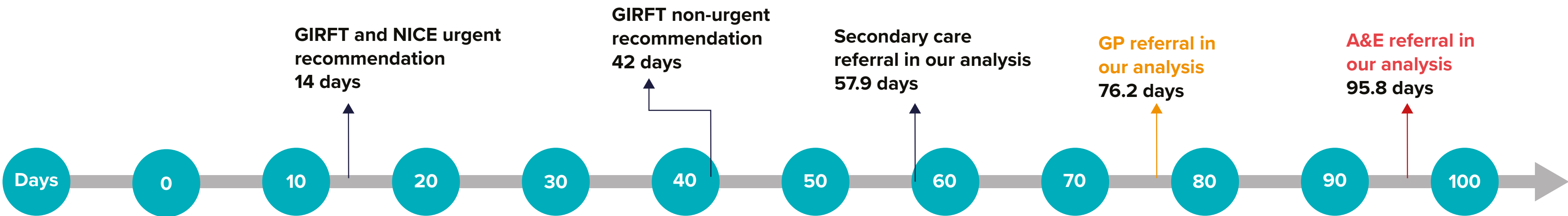
GP referrals waited 18.3 days longer than secondary care referrals.

A&E referrals waited 37.9 days – more than a month – longer than secondary care referrals.[†]

Both GP and A&E wait times increased overall during our study period:
3.3 days longer for GP referrals 8.9 days longer for A&E referrals

Wait times decreased for routine echos and secondary care referrals but increased for urgent, 2-week wait, GP and A&E referrals.

Mean wait times for echocardiography procedures by referral source: GIRFT and NICE recommendations^{5,19} versus 2024/2025 in our analysis

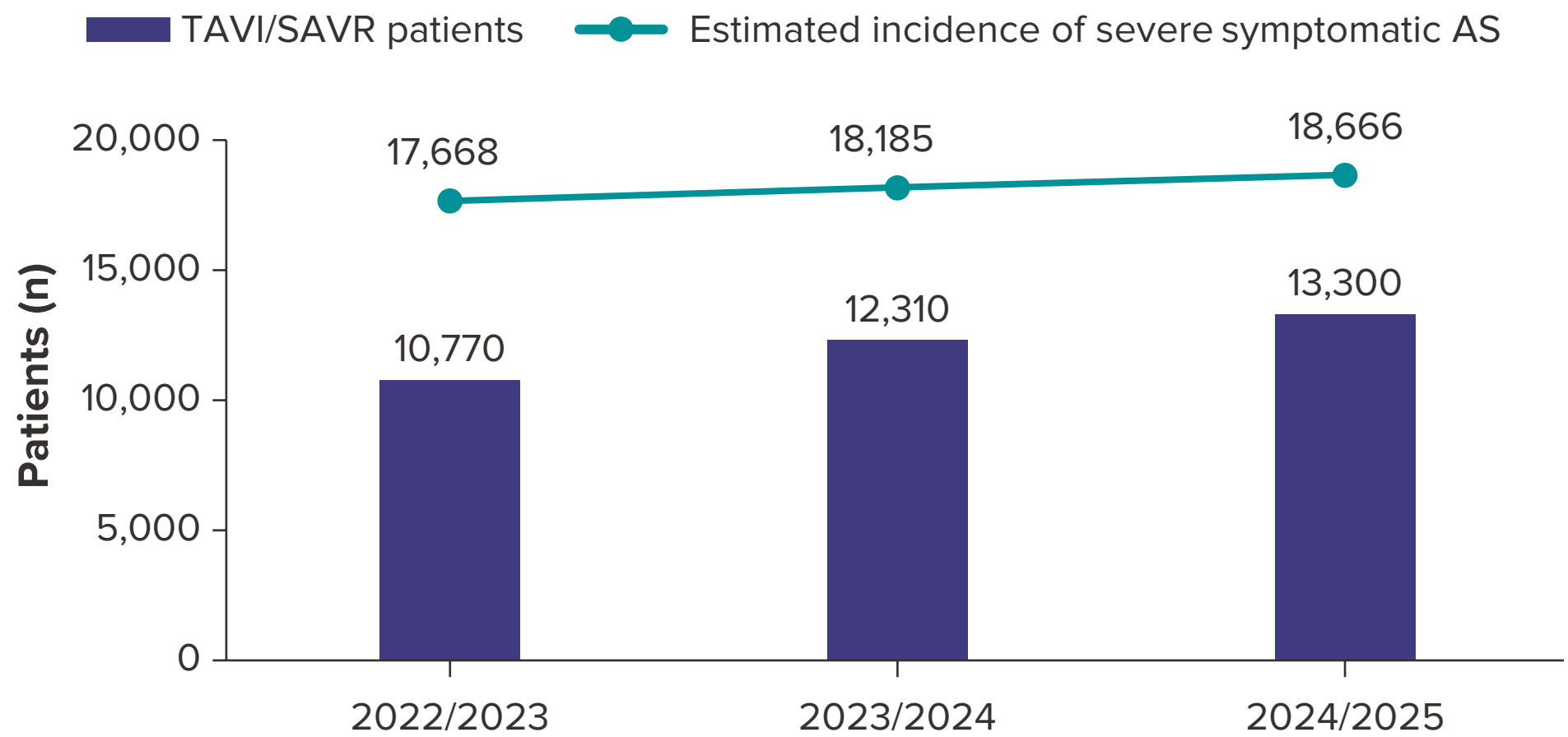


Our HES analysis only looked at outpatient cardiology first attendances for echocardiography.
[†]Because A&E is a smaller volume of referrals, it is more likely to show variation in waiting times from year-on-year (i.e. it may go up one year then down the next).

There is a ‘treatment gap’ between the number of patients undergoing intervention and the number expected to undergo SAVR or TAVI

When the number of TAVI and SAVR procedures combined in patients aged ≥65 years is compared with our estimated incidence of severe symptomatic AS in patients in this age group, there is a ‘treatment gap’ between the number of patients undergoing intervention and the number who would be expected to undergo SAVR or TAVI.*

Number of TAVI/SAVR patients vs estimated incidence of severe symptomatic AS in patients aged ≥65 years, 2022/2023 to 2024/2025



The estimated incidence of severe symptomatic AS in this chart reflects the findings of a contemporary model of the population profile of symptomatic and asymptomatic severe AS in Europe and North America when used to estimate the incidence of severe symptomatic AS in people aged ≥60 years in Australia who might benefit from SAVR or TAVI.³³

The treatment gap has narrowed as the number of both procedures has increased, falling by 11.8% annually. However, the treatment gap was still more than 5,300 patients in 2024/2025.

As our estimate of incidence only includes severe symptomatic AS, this is likely to be a conservative estimate of the true treatment gap.

**It is important to note that the number of patients receiving TAVI or SAVR treatment each year may differ slightly from the total number of TAVI and SAVR episodes. It is also important to be aware that patients with symptomatic severe AS may have died while waiting for intervention, which is not captured in our data.*

Detailed study methods are provided in our full report.¹

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VHD can be severe and life-threatening, but 30% of people with VHD in the UK are untreated in UK.^{18,20}

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More than a quarter of TAVI and SAVR procedures nationally are performed non-electively

Whether patients are admitted electively or non-electively is an important indicator, as non-elective admissions represent patients whose condition has decompensated to the point where emergency intervention is needed.

Conversely, non-elective admissions indicate that the patient is stable and intervention is proactively planned.

As AS is a rapidly progressive condition, every delay in progression to the next step in the patient pathway can result in worsening of the patient’s condition and would be expected to increase the likelihood of a non-elective admission for urgent intervention.

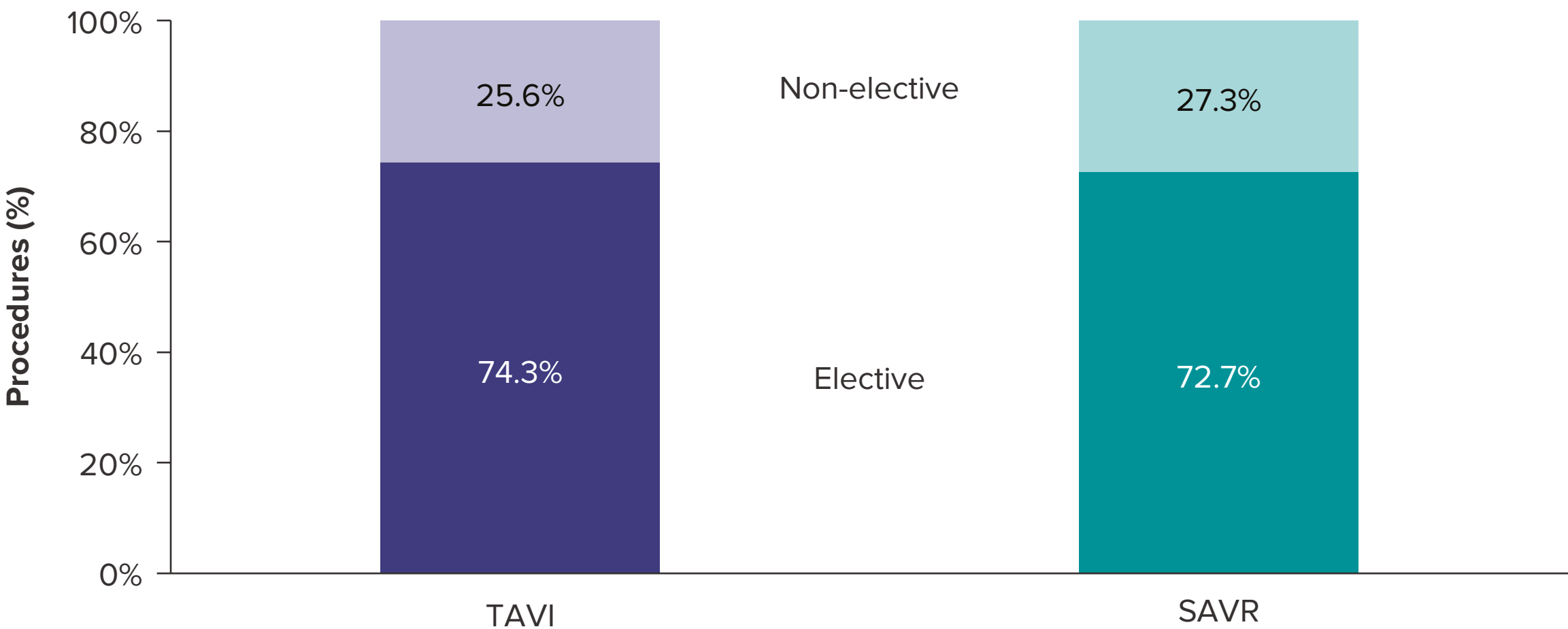
An elective TAVI has a 1–2% risk, but that risk essentially doubles if the patient becomes an inpatient.

And from a system point of view, it’s a disaster: urgent inpatients take 7–8 times the number of bed-days compared with planned cases, at several hundred pounds per day, and that blocks capacity for everyone else.

Our analysis shows that, at the national level, the split of elective and non-elective procedures is similar for SAVR and TAVI.

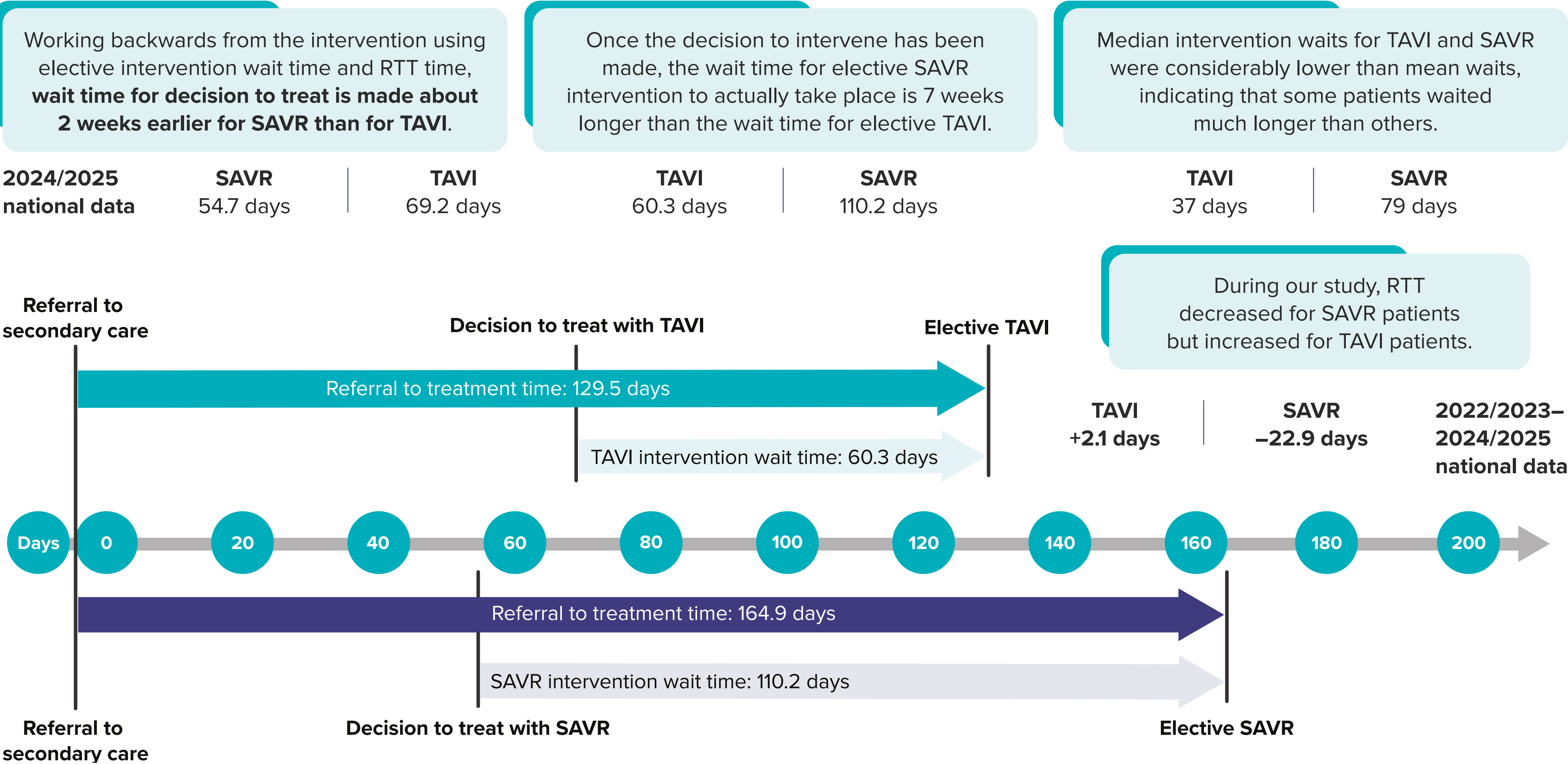
More than one-quarter of procedures performed non-electively

Percentage of TAVI and SAVR by admission method, 2024/2025



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Decision to proceed with SAVR is made 2 weeks earlier than for TAVI but subsequent wait time for elective intervention is 7 weeks longer for SAVR



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“The biggest challenge probably is the wait for the intervention. Delays for interventions are a disaster. When people are left waiting months, there is a real attrition rate – patients deteriorate, they’re admitted in heart failure, and some die on the waiting list for a completely treatable condition, and this is terrible. Every month of delay increases risk. There will be a significant amount of people dying on the waiting list if the waiting list is too long.”

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“Once a patient has been identified for either needing a TAVI or surgical valve replacement, this wait from identifying the moment a patient is ready for an intervention, usually at the MDT, to having the intervention, is far too long. In our hospital, it is about 4–6 months’ wait for surgery.

Why is this? It’s because of capacity. On the surgical side, it is theatre space, ICU space, ICU nurses; and on the TAVI side, it is the catheterisation lab capacity – because there has been a huge growth in the number of TAVIs, and there is not enough space.

How have we dealt with it? Well we are doing more per list, more procedures per session, additional days of procedures.

”

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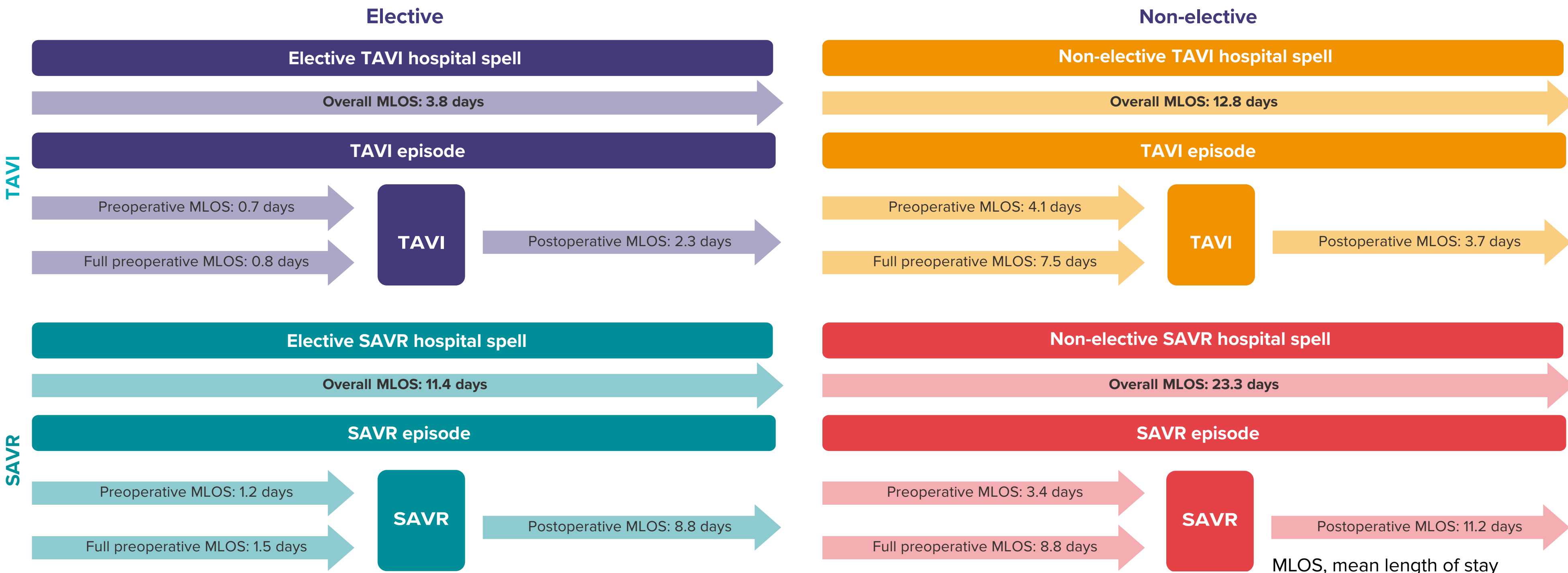
Ensuring timely treatment while patients are stable enough for elective procedures reduces overall, preoperative and postoperative length of stay

Elective procedures have shorter LOS than equivalent non-elective procedures.

- Non-elective and elective TAVI procedures have shorter LOS than equivalent SAVR procedures.
- However, when TAVI is non-elective, overall MLOS is longer than for elective SAVR.

Patients having non-elective procedures are admitted 3–5 days before their procedure episode.

- Full preoperative LOS:
 - >1 week for non-elective procedures
 - ≤1.5 days for elective procedures
- Postoperative LOS:
 - 1.3–1.6 times longer after non-elective than elective procedures



Key findings in our HES analysis: inequalities

Younger patients wait longer for SAVR and TAVI and had higher non-elective admission rates.

- Most patients undergoing TAVI were aged ≥75 years.
- SAVR was split more evenly between age groups.
- **Wait times for SAVR were longer for all age groups vs TAVI:**
 - **Patients aged <65 years**
 - Longest TAVI and SAVR wait times
 - Highest non-elective TAVI and SAVR admission rates
 - **Patients aged 65–74 years**
 - shortest wait times for SAVR
 - **Patients aged ≥75 years**
 - shortest wait times for TAVI

Number of AVR procedures increased with decreasing deprivation.

- No clear pattern for elective wait times by IMD quintile.
- Patients from most deprived quintile had highest non-elective admission rates.
- Patients from least deprived quintile had lowest non-elective admission rates.

Almost twice as many men as women undergo any AVR procedure.

- Women more likely to have TAVI.
- Women had slightly longer TAVI wait times.
- Almost equal split of TAVI/SAVR for men.
- Men had slightly longer SAVR wait times.
- Share of non-elective TAVI was almost same for men and women.
- Share of non-elective SAVR was slightly higher for men.

TAVI and SAVR procedures increased across all ethnic groups, but high numbers with ‘unknown ethnic group’ made meaningful analysis difficult.

More TAVI and SAVR procedures performed on patients living in urban than rural areas.

- Patients in rural areas waited longer for TAVI than those in urban areas.
- Patients in urban areas waited longer for SAVR than those in rural areas.
- About 25% of SAVR and TAVR performed non-electively in both rural and urban areas.

Health inequalities are unjust and avoidable differences in people’s health across the population and between specific groups.

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What needs to happen to improve VHD care



“
In terms of solutions, I think we have to accept that we’re not going to suddenly get a huge amount of extra money, so we need to do things differently. Streamlining the pathway is key. One-stop clinics – where the echo, the interventional specialist and the surgeon all see the patient on the same day – already exist in places and they work. Cancer services work this way; there’s no reason valve disease shouldn’t. Rapid access valve assessment clinics, like have been done in Greater Manchester, and single points of referral can make a huge difference.”

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What needs to happen to improve VHD care

Improve efficiency across the whole pathway

- **Restructure pathways**
so the right patients are seen in the right place at the right time.
- **Use pathway optimisation tools**
to reduce administrative bottlenecks.
- **Introduce dedicated booking coordinators**
to track each patient’s position in the pathway and adjust their prioritisation as condition evolves to provide ownership over patient flow and minimise loss of patients from care.

“
Outcomes for untreated symptomatic AS are worse than many cancers – pathway should mirror cancer models (centralised, rapid, expert-led).”

“
CVD Prevent is a great audit but with little on SHD, making it difficult for PCNs [primary care networks]/ICBs... to have this in the national audit would be much better.”

“
From a BHVS [British Heart Valve Society] perspective, collaboration across the whole pathway is absolutely essential. Valve disease care has to be network based, with surgeons, cardiologists, structural interventionalists, imagers, radiologists, valve nurses and physiologists all working together as one team. Too often the system is fragmented – private echo providers don’t link in, images aren’t shared, and services operate in silos. BHVS’s view is that high-quality, equitable care depends on a connected pathway with the right infrastructure in place.”

“
Infrastructure is needed to overcome the postcode lottery, because that is really not fair. Inequalities are seen across deprived areas, areas with higher ethnic minority populations, and even women are underserved. Care must be disease specific, not procedure specific: whether a patient needs TAVI or surgery shouldn’t determine the speed or quality of their care. Everyone with severe symptomatic aortic stenosis should have equal access to timely, life saving treatment wherever they live.”

Given the focus on AS and TAVI pathways in our report, potential outcomes of our recommendations, such as waiting times, mortality and cost effectiveness, may not apply to all forms of VHD, and alternative solutions may be needed. However, we hope that this report will inspire organisations to review pathways and identify suitable solutions across the spectrum of VHD.

Explore examples of best practice and innovative solutions from real-world practice across our full State of the Nation report.

What needs to happen to improve VHD care

Improve efficiency across the whole pathway			
Detection	Diagnosis	Assessment	Treatment
<ul style="list-style-type: none"> • Increase public awareness – education campaigns, patient education materials • Targeted, appropriately commissioned case-finding programmes and regular heart health checks for people aged ≥60 years, supported by adequate echocardiography capacity and clear referral pathways • Heart assessment in non-clinical settings as part of targeted case-finding (pharmacies, immunisation appointments) • Consider the potential benefits of digital tools, such as AI stethoscopes and smartwatches 	<ul style="list-style-type: none"> • Unified national echo archive on single server • Direct referral from echo to assessment in specialist or Level 3-accredited, physiologist-led heart valve clinics • Flag from physiologist to referring healthcare professional (HCP) to prompt urgent cardiology review • Weekly echo MDT review of GP-requested echos with moderate/severe HVD, with direct booking of cardiology outpatient appointment 	<ul style="list-style-type: none"> • Every hospital to have a valve clinic, with the right expertise in the right streams • Clear, effective single point of referral to see, triage and prioritise patients, with oversight • Clinic redesign to prioritise complex patients and redirect straightforward cases back to the community 	<ul style="list-style-type: none"> • Increase in interventional capacity • Day-case procedures to reduce bed pressure • Surgical safety checklists • Comprehensive pre-optimisation programme • Early social care and discharge planning • Remote monitoring while waiting (including B-type natriuretic peptide [BNP]) • Day of surgery admission • Enhanced theatre utilisation

Be cautious with widescale screening: the NHS doesn't have capacity to treat the added volume.

Reducing the time for diagnostics is key for HVD patients... this is more important than left shift.

There's the digital opportunity: AI echo analysis, virtual MDTs, digital stethoscopes... these things are promising and can really accelerate care if we use them properly.

We need to close the detection gap.

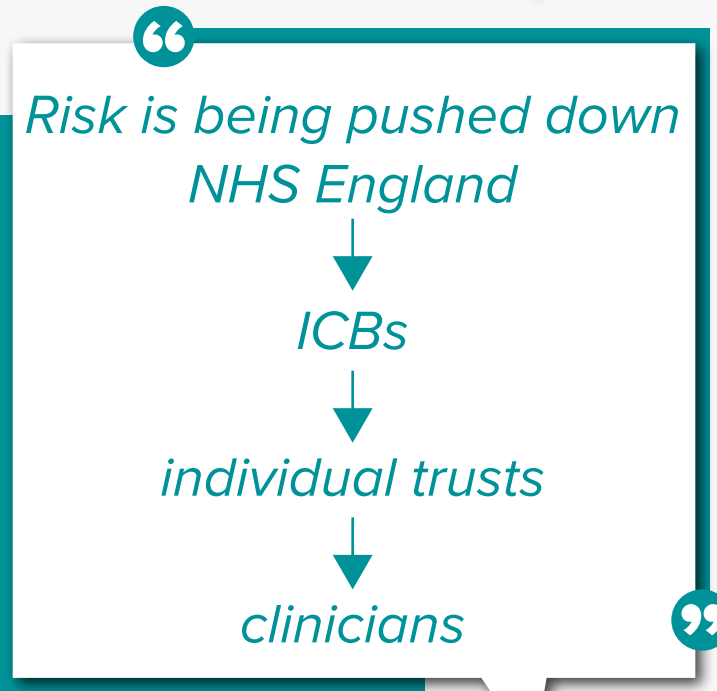
Awareness campaigns like the Heart Valve Voice ‘SLOW’ campaign help.

Something as simple as listening to every patient over 65 with a stethoscope could detect so much disease earlier.

Community diagnostic centres are also really important to move testing closer to patients. When these resources are in the community, there's more awareness about this being an important disease process.

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“Ageing population + high-cost treatments + guideline changes expand demand, while funding shrinks.”



“Overall financial constraints across NHS, ICBs and trusts severely limit service expansion.”

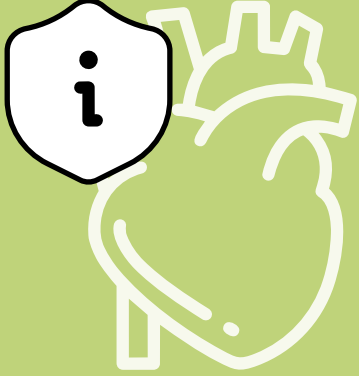
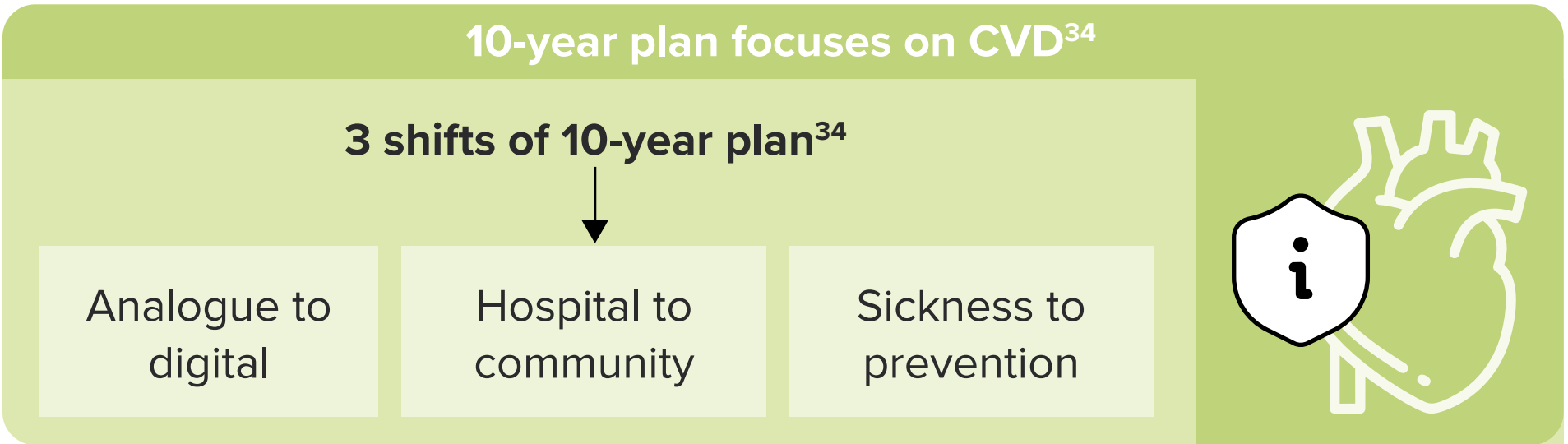
What national organisations should do next

For local organisations to truly make progress in improving care of people with VHD **will require pragmatic, bold and forward-thinking support from national organisations.**

The ambitions and objectives of existing national work in the NHS 10-year plan,³⁴ Cardiac Transformation Programme,³⁵ and GIRFT pathways⁵ can only be realised in practice when backed up by national funding and commitment, otherwise they remain aspirational.

“National leadership is essential. The NHS England cardiovascular transformation work, the GIRFT AS pathway, the upcoming 10-year cardiovascular plan – these will be crucial in addressing inequalities, improving referral quality, and spreading resources more effectively.”

The NHS has developed a Cardiovascular Disease Modern Service Framework (CVD MSF), published in July 2026, aimed at reducing premature heart disease and stroke mortality by 25% over the next decade.^{36,37} One of the first MSFs under the 10-year Health Plan³⁴ and a ministerial priority, the framework will provide consistent, high-quality, and equitable care across the CVD pathway and foster innovation.



“It’s really important that the major societies...continue to lobby and promote the importance of structural heart disease. Their role in keeping this front and centre for national decision-makers is absolutely vital.”



British Society of Echocardiography



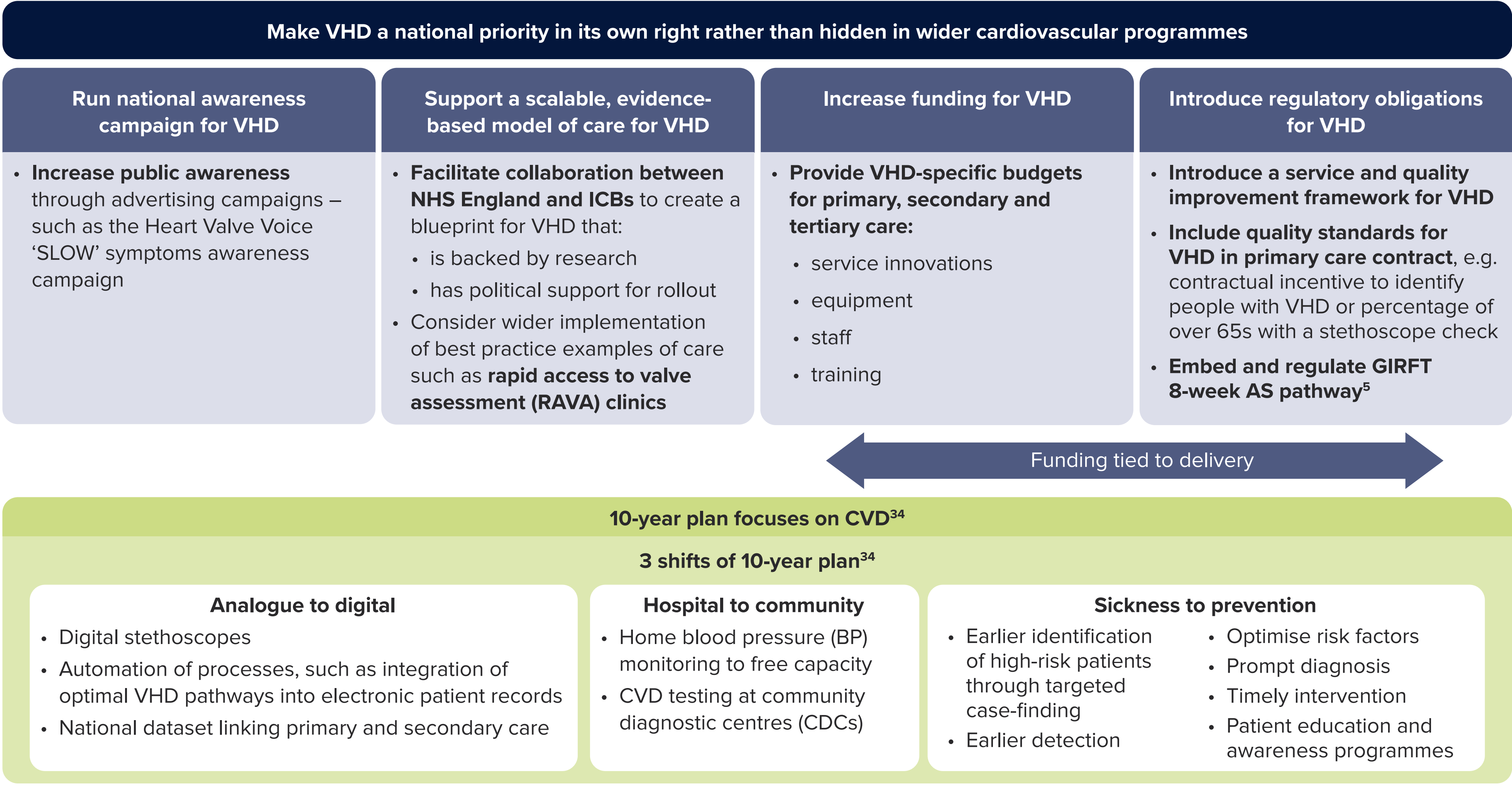
Primary Care Cardiovascular Society



British Heart Valve Society
Improving Care for Patients with Heart Valve Disease

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What national organisations should do next



“Need to have the right contracting environment to create left shift, unless this is in place the system falls over. Miles away from it at the moment...not being delivered so far...ICBs very financially driven.

Has to be clinically led... which is identifying early and optimising early.”

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“Setting up a proper valve clinic in a busy DGH takes time and effort. To make it happen, it has to be resourced and stipulated in the service framework – there needs to be a regulatory obligation to provide it.”

“Commissioners should tie funding to delivery. If the required valve clinic structure isn't in place – consultant lead, valve nurse, specialist physiologists, clear streams, and a single point of referral – then the appropriate funding should not flow. That's how you turn good intentions into service change.”

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What local organisations and systems should do next

Integrate care across primary, secondary and tertiary care

Audit local performance

Update local pathways

- Audit local performance to identify current issues across the VHD pathway
- Review local pathways to ensure they are fit for purpose for modern management of VHD

- **Automate coding across CVD in primary care** to get a true prevalence of VHD based on coding
- **Run multiple morbidity clinics for long-term conditions in primary care** to identify patients at risk of VHD due to other conditions such as chronic kidney disease and diabetes
- **Improve access to imaging, especially echocardiography and CT** to ensure patients are diagnosed quickly before they deteriorate
- **Increase access to specialist assessment** to ensure patients can access secondary care quickly
- **Ensure every hospital has a valve clinic with a clear and effective single point of referral and the right expertise in the right streams**, so patients are triaged and prioritised, with appropriate clinical oversight
- **Consider introducing physiologist-led valve clinics, including Level 3 accreditation,**³⁸ to increase capacity and fast-track patients with severe left VHD by facilitating direct referral to tertiary centres to reduce RTT time, delivering patient education supported by specialist VHD nurse, and potentially reducing unnecessary routine scans of asymptomatic patients
- **Facilitate care for less severe disease in the community** to free specialist capacity for more complex cases
- **Increase intervention capacity to cope with current and future demand** so patients are treated before they need emergency admission or die waiting
- **Develop a system to improve consistency and accuracy of recording in HES** so that metrics such as referral to treatment time can be monitored and audited when initiatives are introduced

“We need to provide more capacity. We need more cath lab capacity, operating theatres and ICU space, we actually might need another consultant to help us during the procedures, and we need more access and more rapid access to CT scans to make the pathway quicker.”

“A lack of flexibility in appointment setting – patients receive fixed date/time letters; cannot choose appointments, changing appointments is difficult. The consequences are patient cancellations yes, but also multiple transport arrangements... children taking time off work 3 times to take parents in... Ideally patients should be able to book tests (echo, lung function, vascular) on the same day themselves, via a digital interface.”

What local organisations and systems should do next

some prompts around pathway gaps and inefficiencies

Detecting people with VHD

Why are people with VHD undetected in primary care?

Are people with VHD being coded correctly in primary care?

- *Encourage targeted stethoscope checks in patients aged ≥ 65 years, within commissioned case-finding pathways*
- *Introduce AI tools to improve case-finding and detection*
- *Encourage testing in other community settings, e.g. pharmacies*
- *Encourage improved coding in primary care*

Referrals for patients with VHD

Are patients being referred through correct pathways?

Are patients referred by GPs and AHPs given lower priority than secondary care and A&E referrals?

Do referrals include sufficient and appropriate information for triage by secondary care tertiary care?

Are A&E referrals increasing locally?

Are referral pathways optimised for efficiency and resource use?

- *Ensure systems are in place to support more accurate and appropriate referrals from primary care to cardiology*
- *Publish guidance on local referral pathways and when to refer*
- *Provide standardised referral templates*
- *Review pathways to identify opportunities to streamline and reduce inefficiencies*

Management of patients with VHD

Are patients waiting longer than recommended for echos, first appointments and treatment? Do some subgroups wait longer than others?

Do treatment rates match local prevalence/incidence of severe symptomatic AS or is there a treatment gap?

Are wait times and LOS longer than for comparable organisations?

Are non-elective rates higher than for comparable organisations?

- *Ensure patients with VHD are adequately prioritised*
- *Redesign services to reduce wait times for tests, appointments and interventions*
- *Review and clarify local management pathways to ensure all patients receive appropriate interventions in a timely manner*
- *Increase surgical capacity so patients get the best lifelong treatment plan*
- *Increase education of patients at diagnosis about signs/symptoms of decompensation and when to contact their valve team*
- *Ensure patients have clear, easy and rapid access routes to contact clinics – e.g. direct phone number for specialist nurses*
- *Consider remote monitoring solutions to reduce clinic review appointments, increase clinic capacity, and identify deteriorating patients*

Coding gaps for patients with VHD

Is coding in HES data consistent and accurate?

- *Encourage accurate and consistent recording of HES data*

“The fast-track pathway for AS – 8 weeks from referral for intervention to treatment – will only happen if there is a carrot and stick approach. Otherwise, we’ll all talk about it, but nothing will change because the limiting step is always resources.”

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What local organisations and systems should do next

some prompts around inequalities

Ethnicity

- Are any ethnic groups locally experiencing inequalities?
- Consider service redesign and outreach for underserved ethnic populations
 - Run education and awareness initiatives
 - Encourage more consistent recording of ethnicity
 - Explain to patients and clinicians why recording ethnicity is so important

Sex

- Do men wait longer for SAVR but women wait longer for TAVI?
Are women being treated appropriately?
- Research is needed on whether men and women with severe VHD present with the same symptoms and echocardiography features
 - Increase awareness of VHD in women to ensure they receive prompt diagnosis and optimal intervention through:
 - additional clinician training
 - checklists highlighting gender-specific features
 - AI tools that may improve diagnosis in women (although research on UK-based populations is needed to ensure AI does not widen healthcare inequalities)

Age

- Are younger patients waiting longer for SAVR and TAVI?
Do younger patients have higher elective admission rates?
- Raise awareness among clinicians that younger patients are waiting longer, which may be contributing to high non-elective admission rates

Deprivation and rural/urban

- It is difficult to disentangle deprivation, rurality, and urbanicity, as people living in rural and urban areas may experience deprivation for different reasons, so these metrics should be considered in tandem
Some ICBs will be predominantly rural and others predominantly urban, but many will have a mix within their boundaries and different inequalities may need to be addressed in different patches
Are people in more deprived areas experiencing inequalities compared to less deprived patients?
Are people living in rural areas experiencing inequalities compared with patients in urban areas, and vice versa?
- Run awareness campaigns in areas with inequalities and targeted at underserved groups
 - Consider service redesign and outreach to target issues in deprived, rural and urban areas
 - Consider AI-assisted imaging to improve access in rural areas and increase capacity in urban areas by shifting imaging outside of tertiary centres

“Ethnic inequity is probably the most obvious [inequity], because there you see very much lower rates of access to treatment. Patients engage with healthcare in different ways; they don’t activate or use primary care in the same way. Their pathway is quite delayed. It’s also tied up in economic and socioeconomic boundaries – poorer parts of the country have less access to general practice, bigger lists, bigger practices, and that’s harder to get GP appointments.”

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Appendices



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- 1. This work uses data provided by patients and collected by the NHS as part of their care and support. Secondary care data is taken from the English Hospital Episode Statistics (HES) database produced by NHS England, Copyright © 2026, NHS England. Re-used with the permission of NHS England. All rights reserved.
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Abbreviations

A&E	accident and emergency	LOS	length of stay
AHP	allied health professional	LTP	Long Term Plan
AI	artificial intelligence	MDT	multidisciplinary team
AR	aortic regurgitation	MLOS	mean length of stay
AS	aortic stenosis	MSF	modern service framework
AVR	aortic valve replacement	NHS	National Health Service
BHVS	British Heart Valve Society	NICE	National Institute for Health and Care Excellence
BNP	B-type natriuretic peptide	OPCS	Office of Population Censuses and Surveys Classification of Interventions and Procedures
BP	blood pressure monitoring	ONS	Office for National Statistics
CDC	community diagnostic centre	PCN	primary care network
CT	computed tomography	RAVA	rapid access valve assessment
CVD	cardiovascular disease	RTT	referral to treatment time
ECMO	extracorporeal membrane oxygenator	SAVR	surgical aortic valve replacement
GIRFT	Getting It Right First Time	SHD	structural heart disease
GP	general practitioner	TAVI	transcatheter aortic valve implantation
HCP	healthcare professional	VHD	valvular heart disease
HES	Hospital Episode Statistics		
ICB	integrated care board		
ICU	intensive care unit		

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Expert contributors

Contributor	Affiliation
Raj Thakkar	President and CKD Lead, Primary Care Cardiovascular Society; Primary Care Specialist Advisor, British Society of Heart Failure; GP, Bourne End and Wooburn Green Medical Centre
Christopher Cook	Consultant Cardiologist, Essex Cardiothoracic Centre, Anglia Ruskin School of Medicine, UK
Keith Pearce	Lead Consultant Cardiac Scientist, Manchester University Foundation Trust; Past President, British Society of Echocardiography; National Specialty Advisor (Physiological Science-Cardiac Science), National Diagnostic Programme, NHS England
Jonathan Byrne	Consultant Cardiologist, King’s College Hospital NHS Foundation Trust; UK Lead of Valve for Life programme, Valve for Life UK
Narain Moorjani	Consultant Cardiac Surgeon, Royal Papworth Hospital, Cambridge; Past President, Society for Cardiothoracic Surgery in Great Britain & Ireland (SCTS)
Dominik Schlosshan	Consultant Cardiologist, Leeds Teaching Hospital NHS Trust; President, British Heart Valve Society

HSJ report development team

Jyotika Singh
Senior Principal Consultant, HSJ Information

Kieran Brown
Engagement Manager, HSJ Information

Stephen Thomas
Senior Analyst, HSJ Information

Andrew Fraser
Senior Consultant, HSJ Information

Jemma Carter
Independent Medical Writer

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