J.1 Monitoring after intervention

J.1.1 Research recommendation

What is the most clinically and cost-effective type and frequency of follow-up for different types of valve interventions, including repair and replacement with tissue or mechanical valves?

J.1.2 Why this is important

Currently, the follow-up of patients after valve interventions varies widely. Some patients are followed up every year (often with repeat echocardiography) indefinitely, while others are discharged without any follow-up (unless symptoms recur), and there are many examples between these extremes. Because future valve interventions (after a first intervention) carry a much higher risk, very few (if any) asymptomatic patients undergo second time ('re-do') interventions, so the benefit of follow-up in patients who remain asymptomatic following their first intervention is unclear. Different types of valve intervention also likely require different follow-up, given the very different durability of the various interventions. Understanding the best type and frequency of follow-up for patients following heart valve interventions would greatly aid clinical management.

J.1.3 Rationale for research recommendation

Importance to 'patients' or the population	If the best type and frequency of follow-up after heart valve intervention could be determined, patients could receive the most appropriate frequency of follow-up. This would enable the identification of patients likely to benefit from further intervention, with improvement in their subsequent symptoms, whilst avoiding unnecessary follow-up in others.
Relevance to NICE guidance	No evidence was found for the frequency of monitoring after an intervention for heart valve disease. Current practice for those that had received valve repair or replacement is variable and depends on patient factors, such as comorbidities and the shape of the heart due to either other cardiac disease or previous cardiac operations, as well as the type of procedure that has been performed (repair or replacement). Research would enable stronger recommendations to be made on the frequency of monitoring.
Relevance to the NHS	Research in this area would inform NICE recommendations on the frequency and type of follow-up required for patients. If regular follow-up (and the optimal timing of this) resulted in improved outcomes, this would standardise the approaches to follow-up in the NHS.

	If reduced or no follow-up for some patients was shown to be as effective as more frequent follow-up, this would deliver major advantages in resource use, and avoid unnecessary appointments / tests.
National priorities	None known
Current evidence base	No evidence was found for the frequency of monitoring after an intervention for heart valve disease.
Equality considerations	None known

J.1.4 Modified PICO table

Population	Inclusion: Adults 18 years and over with heart valve disease and repaired or replaced heart valves, stratified by biological (including transcatheter) or mechanical valves and repair or replacement: • Repair • Replacement with biological valves • Replacement with homograft and autograft valves (including the Ross procedure) • Replacement with mechanical valves • Replacement with mixture of biological and mechanical valves (i.e. some in population with biological and some with mechanical) Exclusion: • Children aged less than 18 years. • Adults with congenital heart disease (excluding bicuspid aortic valves). • Tricuspid stenosis and pulmonary valve disease.
Intervention	Monitoring by echocardiography (transthoracic or transoesophageal) at various frequencies followed by appropriate valve re-do intervention: • More frequently than once a year (<12 months e.g. every 3 or 6 months) • Once a year (every 12 months) • Less frequently than once a year (>12 months; e.g. every 2, 3 or 5 years)
Comparator	Other active comparator listed above No monitoring/clinical review (echo only performed if new symptoms emerge/symptoms worsen)
Outcome	<u>Primary outcomes</u> All-cause mortality; Cardiac mortality; Health-related quality of life; Stroke or TIA and hospitalisation for heart failure or other cardiac event <u>Secondary outcomes</u>

	New-onset atrial fibrillation
Study design	Adequately powered randomised controlled trial (ideally)
Timeframe	Long term
Additional information	None