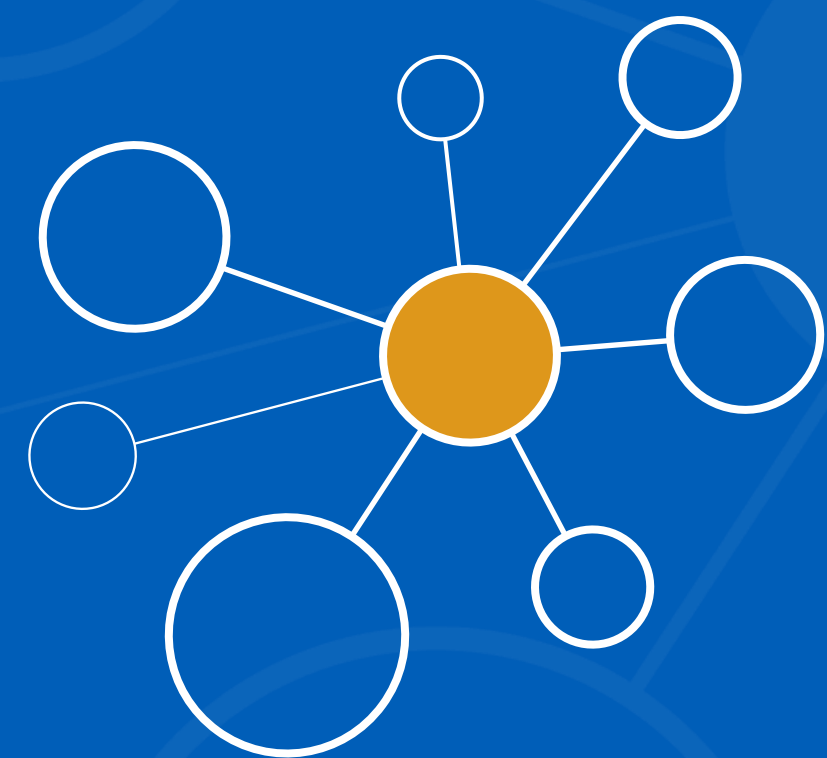




Improving the Safety and Efficiency of the Same Day Emergency Care (SDEC) Transthoracic Echocardiography Pathway at Gloucester Royal Hospitals

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Aim

1. To increase adherence to British Society of Echocardiography (BSE) recommended 'time to scan' guidelines for urgent requests to 70% by June 2025
2. To improve the efficiency of the TTE pathway and reduce inappropriate requests by 30% by June 2025

Background

- Cardiac echocardiography services in the UK are under significant pressure due to increasing inpatient & outpatient requests and insufficient cardiac sonographer staffing to meet demand, with current workforce projections indicating it will take 7 years to catch-up (Leary and Punshon, 2023).
- Locally, there is 6-month backlog with 400 echocardiogram requests outstanding, leading to a significant delay in patient results.
- This strain is particularly felt in ambulatory settings such as SDEC, where timely diagnostic tests are crucial for patient flow and optimal clinical care.
- BSE guidelines recommend timely and appropriate investigations that are essential for ensuring that patients receive the right care at the right time.
- Effective clinical vetting and prioritisation of echocardiogram requests, especially in ambulatory settings, are vital for improving decision-making, patient outcomes, and overall service efficiency.
- This QI project will specifically focus on transthoracic echocardiogram (TTE) requests in SDEC by assessing current request practices, adherence to the BSE guidelines, identify areas for improvement, and explore strategies to reduce inappropriate requests and enhance service delivery.

Method

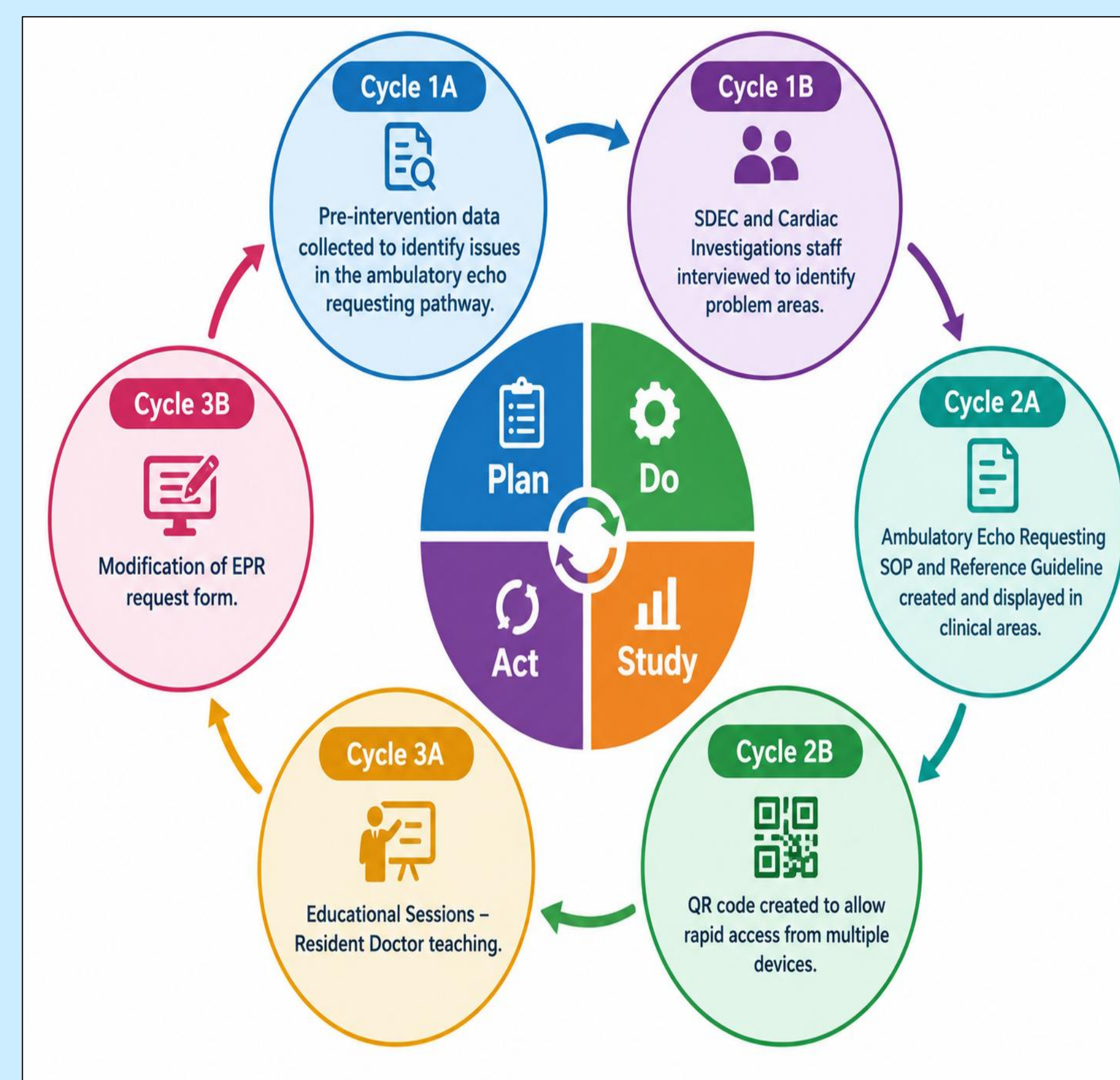
- Data was collected retrospectively over a 6-month period in blocks of 4 weeks for all TTE requests submitted from SDEC.
- At several stages we implemented interventions including introducing a new ambulatory care echo protocol, group teaching sessions, awareness-raising strategies including email bulletins and QR-code accessibility.
- Data was analysed based on the following measures:

1. Outcome measure:

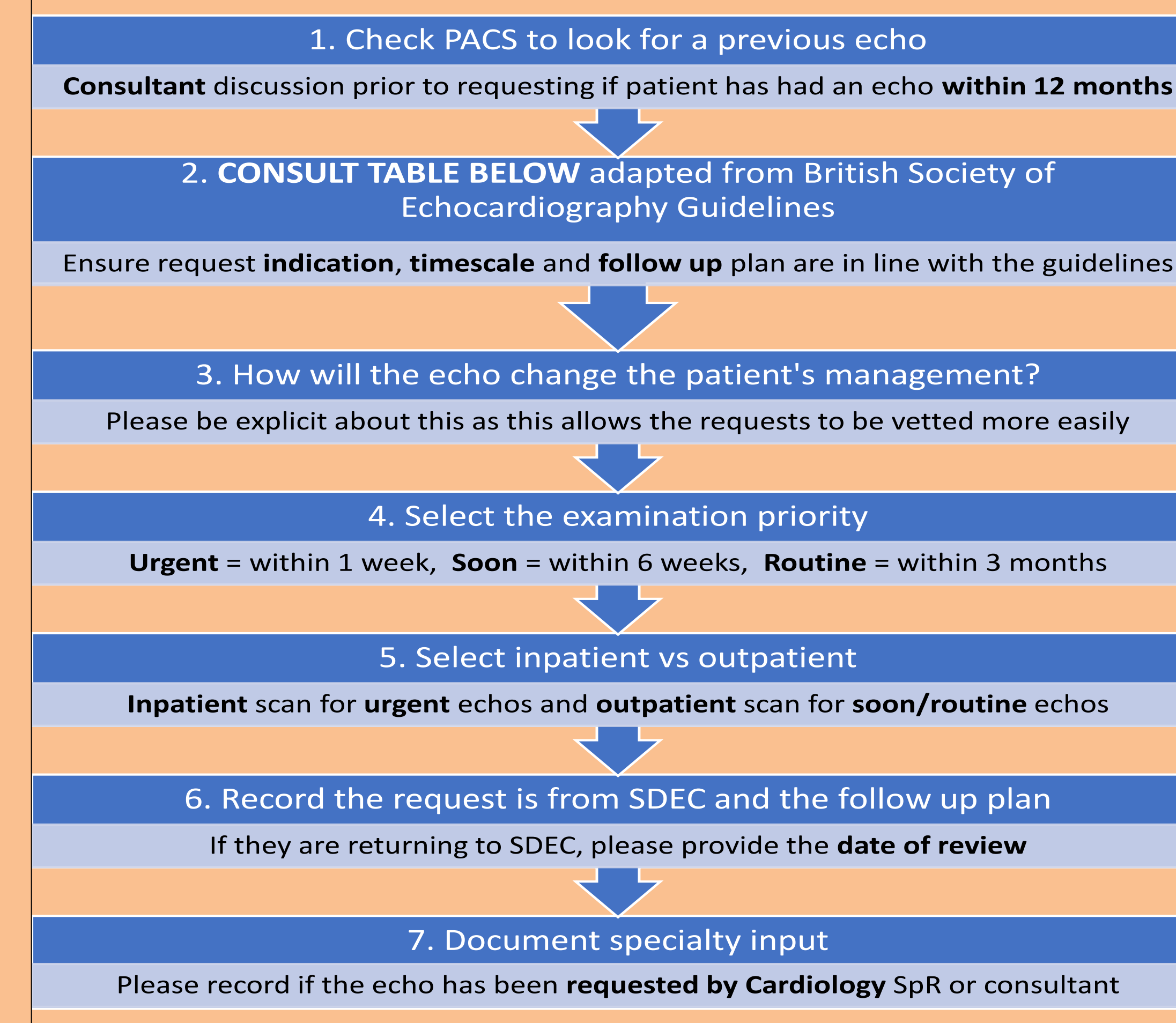
- a) Percentage of ambulatory patients seen via SDEC having a TTE performed within the appropriate clinical timeframe according to the British Society of Echocardiography outpatient guidelines

2. Process measures:

- a) Number of requests with inadequate information to reflect clinical indication or urgency.
- b) Number of inappropriate TTE requests based on current national guidelines
- c) Number of requests that clarified the patient was from SDEC/AEC and detailed their follow up plan.



Please follow the following steps when requesting an echo:



URGENT echo requests that REQUIRE SDEC FOLLOW-UP AND REVIEW:

Indication	Additional Notes	Optimal timescale
Pericarditis with clinical suspicion of tamponade	Needs admission Focused scan	24hrs as IP
Ambulatory investigation of pyrexia/infection of unknown origin where IE suspected (e.g. presence of a murmur, known valve disease, embolic phenomena or typical organisms on BCs)	Please ensure heart sounds carefully documented. Ensure 3 sets of blood cultures sent. Patients with a high clinical suspicion or high-risk features* should be managed as an IP (please discuss with cardiology if unsure)	Within 24 – 48 hours
Assessment for structural heart disease and function in the context of VT or high degree heart block	Please ensure CXR done Manage as IP	Within 24-48hrs
Malignant hypertension (>180/120mmHg) with clinical concern of acute left ventricular dysfunction	Please ensure CXR done Manage as IP	Within 48hrs
Assessment of LV function in the context of suspected ACS	Please only as an IP or early OP	Within 72hrs
Pericarditis with suspicion of pericardial effusion but patient haemodynamically stable	Ensure CXR done Focused scan	Within 72hrs
Myopericarditis but considered suitable for ambulatory pathway	Serial troponins < 50 Will need regular review in SDEC to ensure treatment response. Admit if troponins rising or Sx worsening.	Within 72hrs
Suspected heart failure needing ambulatory IV diuretics/with NYHA class III or IV heart failure symptoms** / BNP >2000	Ensure CXR and BNP have been done prior to request Referral to heart failure team after echo	1 week
Murmur in the presence of NYHA class III or IV heart failure symptoms** or syncope	Please ensure CXR done Please ensure heart sounds carefully documented	1 week
Suspected cardiomyopathy of pregnancy	Please ensure BNP is done prior to echo request	1 week

Results & Expansion

- Initial baseline data demonstrated suboptimal echo requesting quality with 45% declared as containing insufficient information to accurately triage. Additionally, only 38% of TTEs were being performed within the clinical timeframe outlined by the BSE guidelines for outpatient echocardiography.
- After initial intervention, the number of requests without clear indication or sufficient clinical information reduced to 30%. 46% of TTEs requested from ambulatory care were performed within the advised timeframe but the number of urgent echo requests performed in an appropriate timeframe reduced to 30%.
- With further changes, pleasingly, there was an overall increase in the number of TTEs being performed within BSE clinical timeframes (60%) and urgent requests being completed within an acceptable timeframe (58%).
- Future opportunities to expand on the ambulatory echo protocol include updating the current 'Acute Pericarditis' guideline and enhancing the educational programme to target a wider audience of Resident Doctors

TTE Requests from Same Day Emergency Care

