**Background:** Atrial fibrillation (AF) is common and increases stroke risk. Echocardiography is often performed as part of the cardiological evaluation of patients with AF to assist with stroke risk stratification (and hence, decisions on thromboprophylaxis with oral anticoagulants (OACs)). The cost effectiveness of such an approach is unknown.

**Objective:** To estimate the cost-effectiveness of using transthoracic echocardiography (TTE) in helping to make the decision whether to prescribe an OAC in newly diagnosed AF patients.

**Design**: Diagnostic economic modelling analysis.

**Setting:** England & Wales

**Model:** Diagnostic discrete event simulation model.

**Comparisons:** Decisions and consequences following from using TTE in combination with the CHADS2 score (used for stroke risk stratification), compared with those when using CHADS2 alone.

**Treatments considered:** Warfarin, dabigatran and rivaroxaban were all considered separately as OACs which may be prescribed as a result of the information provided by TTE.

**Population:**  Newly diagnosed AF patients.

**Main outcome measures**: Quality adjusted life years gained, strokes averted, effects on cost and major bleeding events.

**Results:** For patients aged 50 years, using TTE does not appear clinically effective due to the problems of additional overtreatment. For patients aged 65 years, using TTE is more effective but more expensive, with incremental cost-effectiveness ratios which are below conventional willingness to pay thresholds when a newer OAC (rivaroxaban, dabigatran) is being considered, but not warfarin.

**Conclusions:** Using TTE to inform the decision whether to prescribe a newer OAC to newly diagnosed AF patients may be a clinically and cost-effective strategy.