Project Summary/Abstract Six million Americans suffer from atrial fibrillation (AF), a heart rhythm abnormality that is increasing in prevalence and is also a major risk factor for stroke. AF accounts for 15% of ischemic strokes, resulting in permanent disability in 60% of cases and death in up to 20%. Oral anticoagulation (AC) is effective for AF- related stroke prevention and the vast majority of AF patients have a guideline-directed indication for oral AC. Despite this, only half of eligible AF patients receive treatment. This is particularly true among non-white AF patients, in whom AC use is lower and stroke rates are higher. The proposed project, SUPPORT-AF IV: Supporting Use of AC through Provider Prompting about Oral Anticoagulation Therapy for AF, will examine the impact of a novel AC clinical decision support tool within the electronic health record (EHR) on AC prescribing behaviors among healthcare providers from two distinct health systems who receive it. We will also examine clinician engagement through provider interviews and detailed study of behaviors using electronic health record access logs. Finally, we will refine the alert, develop a comprehensive dissemination plan, and create an implementation toolkit to widen the use of the alert at other learning health systems nationally. Specific Aims include: Aim 1: (alert enhancement) Enhance alert which will fire when eligible patients (those with AF and elevated stroke risk not on AC) visit cardiology providers and PCPs; enhancements include links to educational material, peership resources, and communication tools to use with patients not on AC. Aim 2: (adherence: AC initiation and persistence) Measure adherence including AC initiation and AC persistence (staying on AC for one year) in eligible patients (n=2632) of providers randomized to receive vs. not receive alert ; repeat measurements in the subset of minority patients (n= 402). Aim 3: (mechanism of effect) Measure association of digital crumbs with AC initiation and persistence; crumbs include alert specific actions (opening smart set and linking out to patient educational materials, peership resources, and communication tools), alert specific orders, other orders, and review of access log actions (review of various items - specialist notes, cardiac testing results, or medication list). Aim 4: (provider and patient satisfaction) Interview intervention providers (n=20) about satisfaction with alert and AC management; interview patients (n=25) satisfaction with AC management received from intervention providers. Aim 5: (dissemination and implementation) Refine alert, develop a comprehensive dissemination plan, and create an implementation toolkit that captures all lessons learned from measuring effectiveness, mechanism of effect, and provider and patient satisfaction. We are applying for the R01 (PA-18-722) - Improving Patient Adherence to Treatment and Prevention Regimens. Our research team brings together extensive expertise in AC care, informatics, implementation science and health disparities that will guide us in the execution of the proposed aims.