Impact of a Pharmacist-Run Telehealth Anticoagulation Service in a Rural Hospital Setting
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Purpose and Background: Patients prescribed the anticoagulation medication, warfarin, who live in rural, Western North Carolina, may have to drive more than an hour one way or speak to a pharmacist on the phone to have appropriate laboratory monitoring with international normalized ratio (INR) accompanying dose adjustments. There is a narrow therapeutic range with risks of both thrombosis and bleeding with warfarin. For dose optimization, monitoring is required weekly upon initiation and at least monthly throughout chronic therapy. A new telehealth anticoagulation service was implemented that allows pharmacists to see patients, monitor therapy, adjust doses, and provide education through video teleconferencing.

Research Objective: The primary objective of this study is to determine the effectiveness of a new telehealth anticoagulation service measured by percentage of individual time in therapeutic range (iTTR) compared to baseline iTTR.

Methodology: This study is a before-and-after comparison of patients managed by the telehealth anticoagulation service through an outpatient anticoagulation clinic. Patients currently being managed in the clinic by telephone or driving significant distances to appointments serve as their own controls. A subgroup of newly referred clinic patients will be evaluated separately. Data collected on all patients includes: age, gender, race, ethnicity, patient address, indication for warfarin, duration of warfarin therapy, results and dates of INR tests performed, number of visits, approximate time the pharmacist spent in the telehealth visits, and the number of warfarin dosage changes made by the pharmacist. Rates of adverse effects such as thromboembolism, major bleeding, and clinically relevant non-major bleeding will be collected by chart review by the primary investigator. Current patients completed a survey before implementation and all patients will complete a survey after the implementation of the new telehealth service, gauging their perception of and comfort level with telehealth monitoring. Patient enrollment is from August 17, 2015 through February 17, 2016. Institutional Review Board approval was obtained prior to study initiation.

Results: There were 11 patients enrolled in the study, which included 8 patients that had previously been taking warfarin and 3 patients that were initiated on warfarin during the study period. Of the 8 patients previously on warfarin therapy, 4 of them had 56 days or more of INR data collected before and after the implementation of the telehealth service. Their INR values are as follows (before telehealth iTTR, after telehealth iTTR): patient #1 100%, 100%; patient #2 31%, 78%; patient #3 100%, 100%; patient #4 100%, 40%. The overall TTR for the telehealth service in the first 3 months after initiation was 72.55%. Overall, patient satisfaction was high before and after the initiation of the telehealth service and rates of adverse events was low, with 1 patient having a minor bleeding event in the entire study period.
Conclusion: Pharmacists can effectively manage warfarin therapy through telehealth. When compared to themselves before telehealth initiation, patients had similar iTTR, high satisfaction, and low rates of adverse events.