

Implementation of a Warfarin Management Protocol in a Primary Care Clinic

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PROBLEM STATEMENT

- Patients with a time in therapeutic range (TTR) less than 65% have a 57% increased risk of major bleeding complications and a 73% increased risk of death compared to patients with a TTR equal to or greater than 65%.^{5,6,8}
- TTRs equal to or greater than 65% are associated with a 78% decrease in stroke risk.^{1,7,10}
- In outpatient clinics, TTRs are approximately 50% due to patients missing appointments and primary care providers (PCPs) failing to correct warfarin management.^{2,6,10,11}

PROJECT PURPOSE

- Purpose: to improve the health outcome of patients on warfarin by increasing TTR and by changing the current practice related to warfarin management at a primary care clinic.
- Aim: to implement a Warfarin Management Protocol (WMP), to initiate patient self-testing (PST) and to increase TTR among patients on warfarin.
- Clinical question: In adult patients currently receiving warfarin management, does the implementation of a warfarin management protocol utilizing home INR testing devices improve warfarin control as demonstrated by time within target INR range over 3 months compared to standard monthly office management?

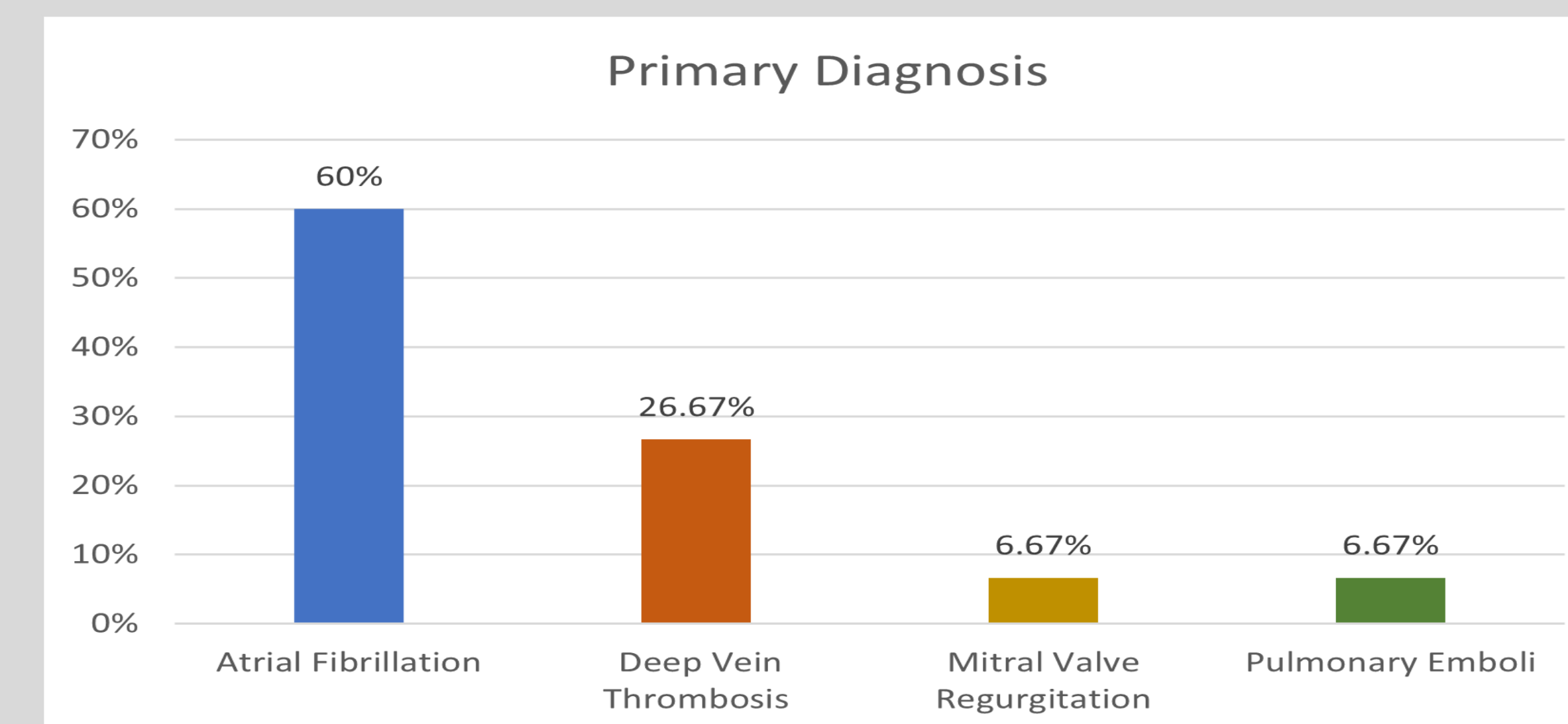
MODEL/NURSING THEORY

- The Iowa Model of Evidence-Based Practice to Promote Quality Care (Iowa Model) guided the research and incorporation of evidence-based practices (EBP) related to the care of patients on warfarin therapy.⁴
- The project was based on the Orem's Self-Care Deficit Nursing Theory, with patients using a home INR testing device as they gained the knowledge and practical skills necessary for warfarin management.⁹

METHODS

Subjects:

- Convenience sample of 15 adult patients on warfarin therapy who were managed by PCPs.
- Inclusion criteria: Adults 18 years and older; on warfarin therapy for at least 3 months; and were expected to be on oral anticoagulant therapy (OAT) for 3 months or longer.
- Study sample was composed of 6 females (40%) and 9 males (60%).



Setting:

- A single outpatient clinic located in Central Florida. In this setting, patients were scheduled to visit the clinic monthly for INR testing.

Instruments/Tools:

- Warfarin Management Protocol^{5,6,10,11}
- Rosendaal Method was utilized to calculate TTR pre- and post-intervention among the subjects.

Intervention:

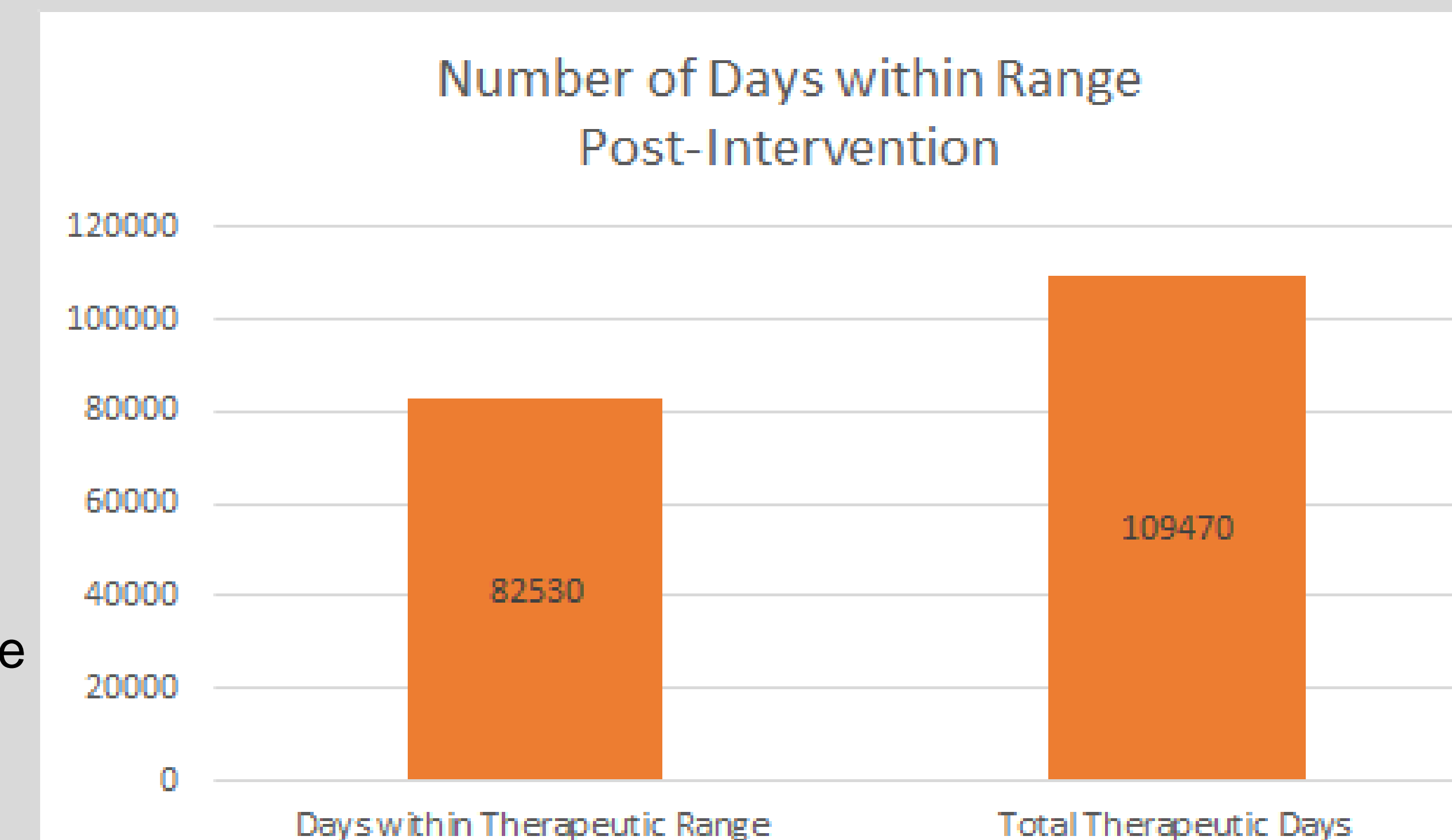
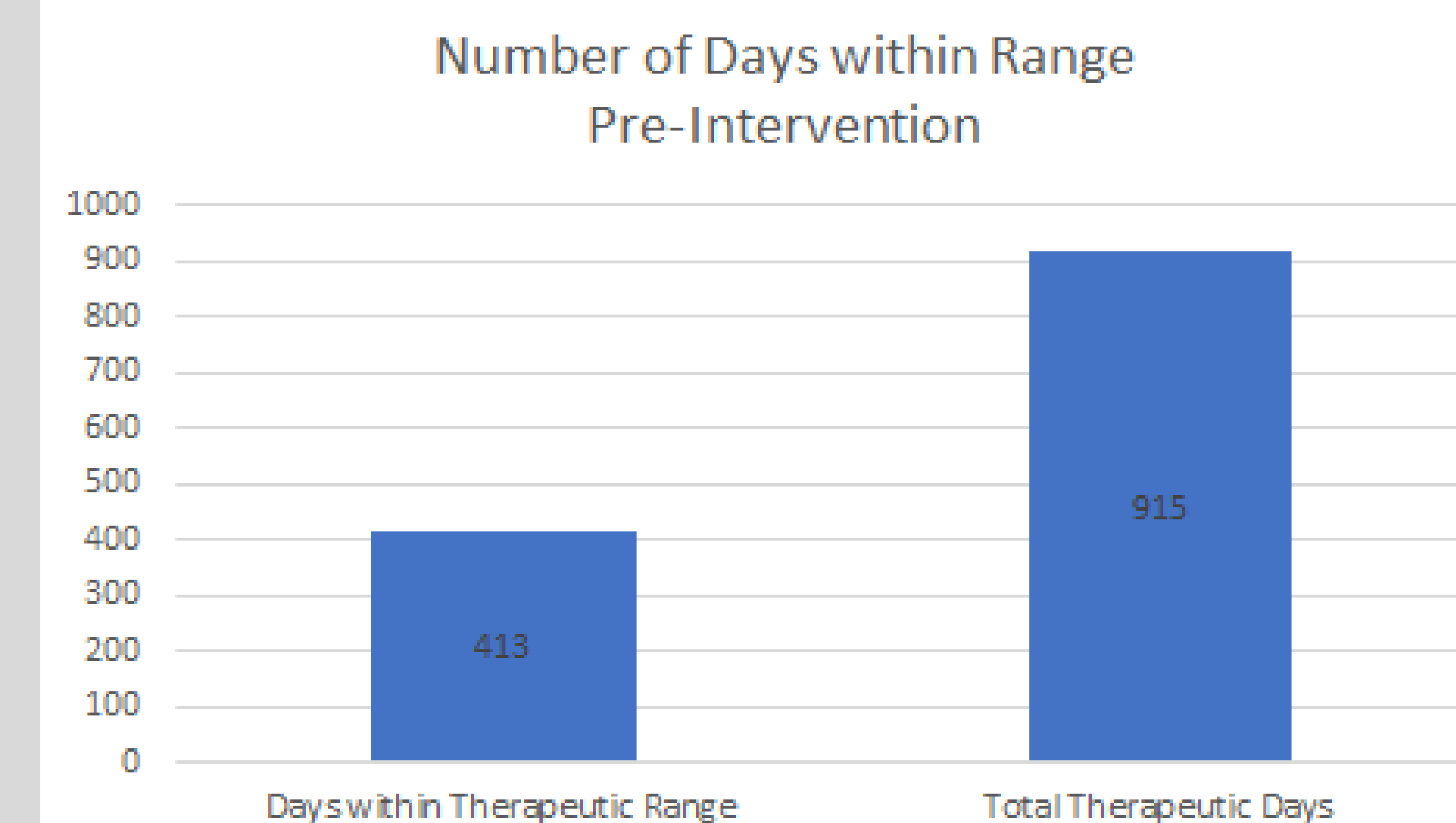
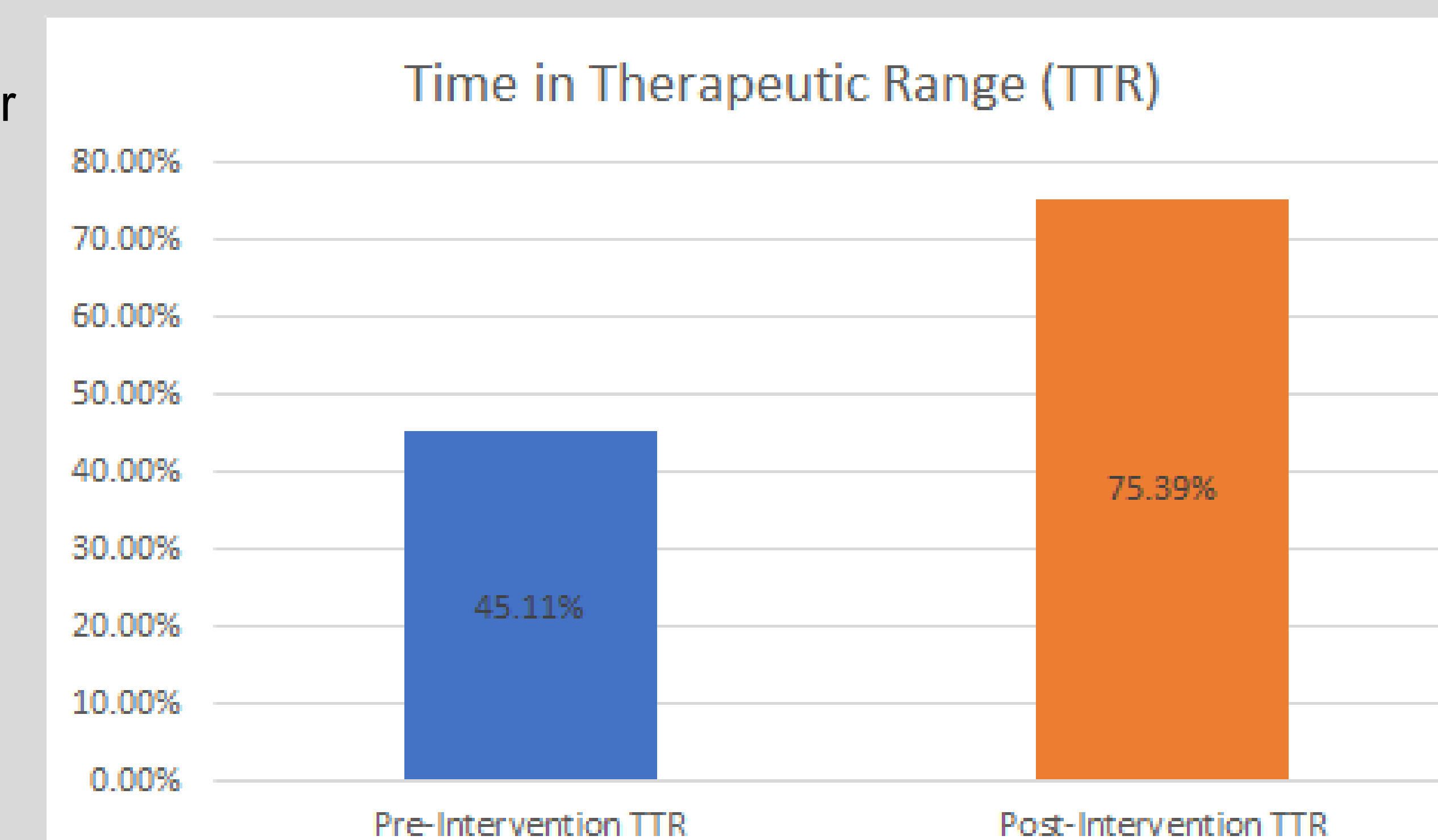
- Staff educational sessions prior to WMP implementation.
- Assessment of patient motivation and eligibility for a home-based INR testing device.
- Remote INR by BioTel Heart® was responsible for training the DNP student, PCPs, and patients on warfarin about the CoaguChek® Vantus System and sending weekly INR result from patients.^{2,3}

Data Collection:

- Pre-measurement outcome: INR results (Oct-Dec 2020) prior to the implementation of the WMP.
- Post-measurement outcome: weekly INR results (1/13/2021 to 4/14/2021) after project implementation.

RESULTS

INR in range using the Rosendaal Method³



DISCUSSION

- Implementation of a WMP and PST using an at-home INR monitoring device increased the TTR from 45.11% to 75.39%.
- Implementation of the WMP decreased the risk of stroke, bleeding, and mortality among patients on warfarin by increasing TTR to greater than 75%.^{5,6,7,10}
- The primary care practice has fully implemented the WMP for all warfarin therapy patients.

IMPLICATIONS FOR ADVANCE PRACTICE NURSING

- APRNs are at the forefront delivering safe and effective primary care services and ensuring the best practices and evidence-based care are incorporated to improve the health outcomes of their patients.
- The utilization of the WMP decreased the risks of thromboembolic complications and major bleeding events by increasing TTR, therefore its usage in the primary outpatient setting demonstrated to be an excellent intervention that benefited both, patients and providers.
- All outpatient clinics should offer patients on warfarin the option of a home INR testing device, since PST utilizing such devices increase the average TTR and reduce patient burden.

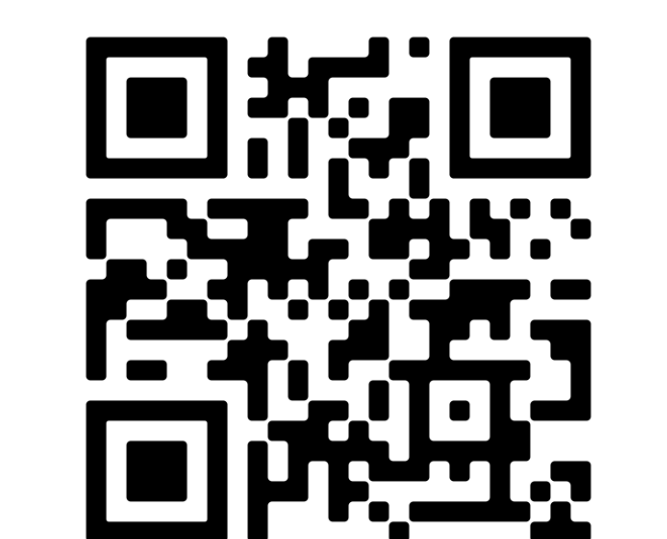
SUSTAINABILITY

- The WMP that was developed has been accepted and applied for patient on warfarin by PCPs in the outpatient clinic.
- Digital and hard copies of the WMP were provided to the medical director.
- There are not additional financial implications associated with the continued use of WMP.

WMP



REFERENCES



Implementation of a warfarin management protocol and patient self-testing using an at-home INR monitoring device increased TTR among patients on warfarin therapy.