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Background

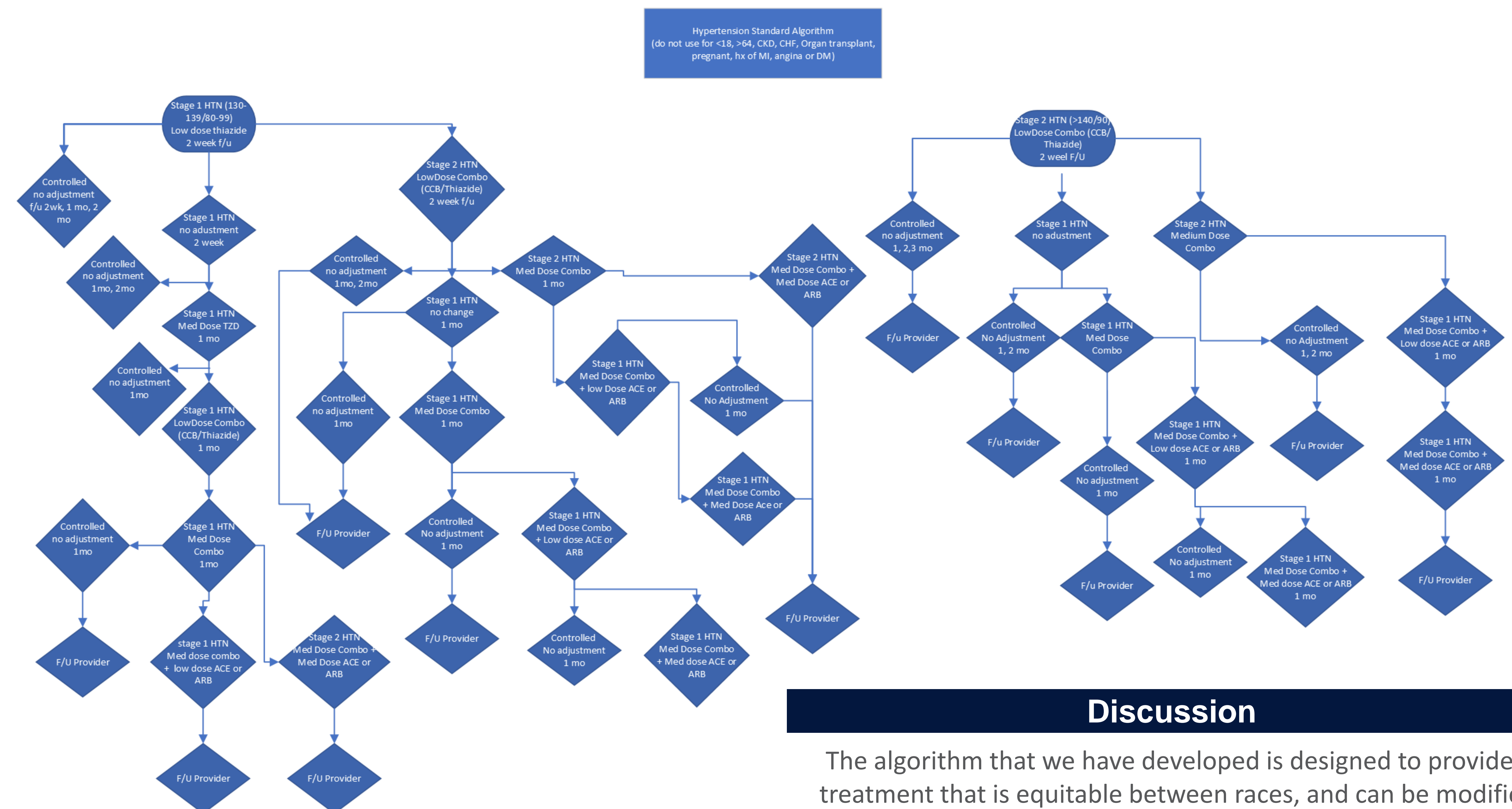
Only about 1 in 4 adults (24%) with hypertension have their condition under control.¹ Remote BP monitoring (RBPM) has been shown to be both practical and clinically effective in the diagnosis and treatment of hypertension (HTN), and has been reported to predict morbidity and mortality more accurately than in-office monitoring alone.^{2,3} When coupled with telemedicine visits, RBPM allows healthcare providers to visualize changes in BP over time and titrate medication in a timely manner. Recent data suggest that even non-physician providers can make these virtual medication adjustments safely and effectively.⁴ The ability of non-physician providers to use algorithmic decision-making based on current ACC/AHA guidelines has been demonstrated for heart failure, but never for HTN.⁵ Using the most recent ACC/AHA guidelines for HTN management, our aim is to develop a telemedicine based, RBPM-driven algorithm which can be implemented by non-physician healthcare providers in an effort to minimize the disparity between current HTN guidelines and actual clinical practice.

Methods

This program aims to utilize current ACC/AHA guidelines to provide an automated treatment approach of blood pressure to 150 patients between March and August of 2023. Patients will be selected by their primary care provider and placed into 1 of 3 algorithms: Simple hypertension, Diabetes/CKD3 and Prior MI/current Angina. Exclusion criteria include \geq CKD4, current pregnancy, age >64 or <18 , hx of solid organ transplant, or Congestive heart failure. The patient will be provided with a cellular enabled wireless blood pressure cuff that will automatically send data to a secure portal for analysis. After initiation of treatment, the patient will follow up via telephone or video call with an RN who will use a standardized template to adjust the treatment regimen and screen for adverse effects of medication. They will counsel the patient on diet, exercise, tobacco cessation, and medication compliance and will review the averaged blood pressures for the last week. Appointments are scheduled for 2 weeks, 1 month, 2 months and 3 months from start of program. At these appointments the RN will send the note summary to the provider and pend any medication adjustments or labs base off the algorithm. The patient's 3-4 month follow-up appointment will be with their original provider for continued medication titration or changes in treatment. After 3 months of controlled blood pressure, the patient will be removed from the program and resume regular visits with their medical provider.

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Standard Blood Pressure Algorithm



Discussion

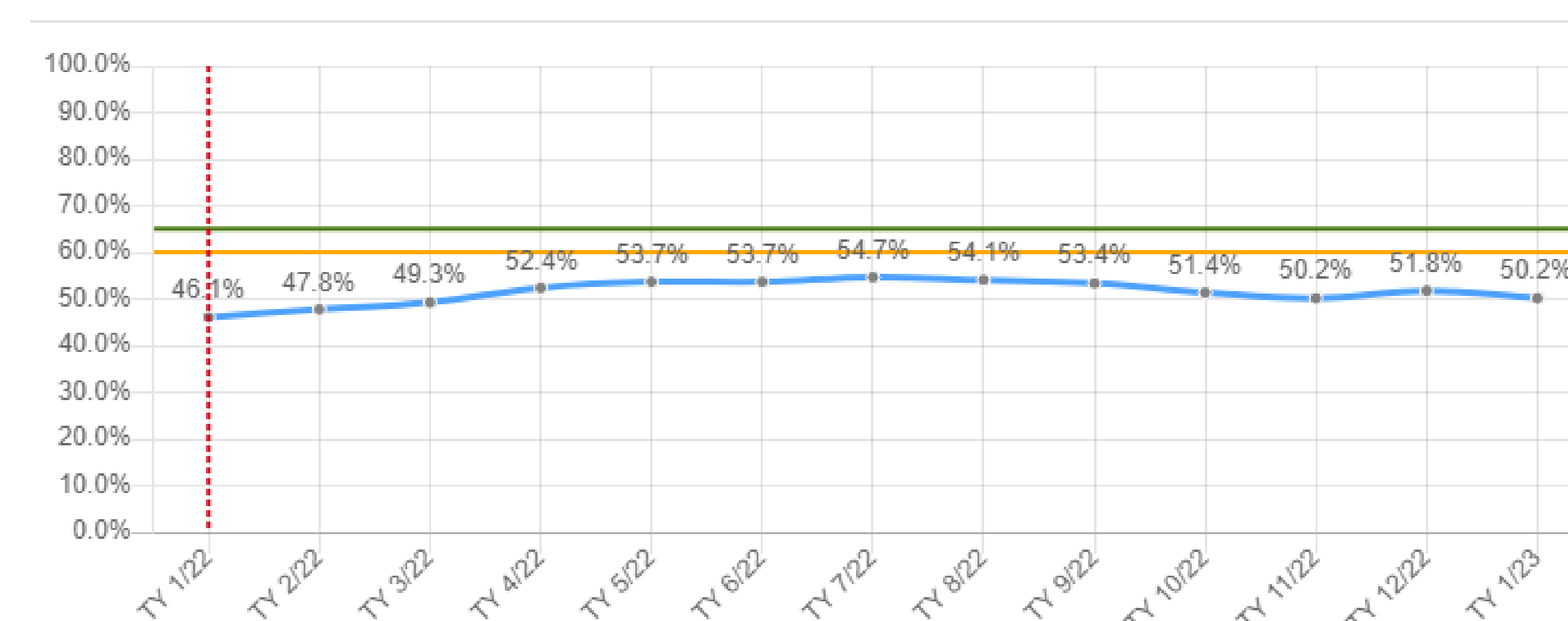
The algorithm that we have developed is designed to provide treatment that is equitable between races, and can be modified to account for HTN complicated by CKD III, diabetes, angina, and history of myocardial infarction. When compared to usual in-office follow up, an algorithm driven, navigator led remote medication optimization program may result in more rapid control of HTN. If adverse events remain low, this method could be extrapolated to provide treatment options in areas with limited providers and/or healthcare education.

References

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Current Rates of Controlled* Blood Pressure



- Controlled Blood Pressure is defined as $<140/90$

Note: goal Blood pressure is <130/80

Primary Target 70%
Secondary Target 65%
Actual % controlled