



## Risk stratification

Using a computer program, patients were stratified by risk based on near-term use of healthcare resources (ED, inpatient services), BP control, and presence of co-morbid diseases:

Level 1, low risk: HTN with 1 currently prescribed antihypertensive medication

Level 2, medium risk: HTN with chronic kidney disease stage 3 or higher; 3 or more meds

Level 3, high risk: co-morbid, admission to ED or hospital within past 6 months; elderly/frail

## IMPROVEMENT MODEL

With approximately 10,000 patients in its HTN population, Vanderbilt Medical Group anticipates 27,000 patient visits over the next 5 years. To meet this high demand for services, the group recognized the need for significant change.

The MHTAV model makes the assumption that transformative healthcare change cannot be achieved through small adjustments to the current system, but instead requires a complete redesign of people, processes, and technology to achieve patient-centered care.

The MHTAV model incorporates:

- Team care coordination using evidence-based practice and protocols
- A centralized plan of care
- Use of advanced healthcare IT for follow-up of home monitoring, medication adherence and reconciliation, transitions of care, and tracking of utilization and outcome measures
- Telemedicine
- Transition from fee-for-service model to population management fee and team incentives

The team comprises the primary care staff with the new role of care coordinator embedded into the practice.

1. Care coordinator (RN): primary contact with the patient and coordinator for the team. Provides goal setting, education/coaching, preventive health, and recognition of early symptoms for escalation

2. Primary care physician (ambulatory intensivist): provides care plan/treatment, chronic care management, preventive care oversight, and referral to specialists
3. Specialist physician: provides plan of care and focused treatment
4. Patient: responsible for goal setting with care team and for self-management

## COMMUNICATIONS

The project was introduced to the primary care team and specialty areas over the last year. Lead physicians were chosen in each of the areas of focus—hypertension, heart failure, and diabetes—as well as three primary care physicians for the pilot. The model was then previewed by the division leaders, followed by a series of presentations for the staff of targeted clinics and all physicians. The model has been accepted and a collaborative effort by the targeted clinics established.

Care coordinators are assigned a group of physicians and an eligible list of patients based on diagnosis. The care coordinator notifies the primary care physician that an eligible patient is scheduled during the clinic and accompanies the physician for a formal introduction to the patient. The care coordinator is introduced as a new team member.

## LEADERSHIP SUPPORT

The MHTAV initiative is sponsored by the executive leadership of Vanderbilt, whose role is to provide strategic direction, advice, oversight, and vision to the project. The project falls under the Strategy and Transformation initiatives of the university. The project reports to the Innovation Council and Value-Based Care Committees.

The MHTAV champions of the initiative are the assistant chief medical officer and Vanderbilt Medical Group medical director for Adult Primary Care; the director of Quality Informatics, Ambulatory Care; the assistant chief medical officer for Vanderbilt Medical Group — Williamson County; the associate director of Vanderbilt Medical Group; and the administrator for Adult Primary Care and Eskind Diabetes Center for Health Promotion and Disease Management.

The MHTAV workgroup, which meets weekly, is comprised of managers, care coordinators, analysts, programmers, pilot physicians, and various primary care team members.

Funding for the project is currently internal.

## CARE MANAGEMENT PROTOCOL

A key part of the HTN pilot is a care management protocol that defines the frequency of contact with each patient and the type of service provided based on risk level. The stratification engine assigns each patient to a control level initially, although a nurse or physician can override the assignment if more-frequent care is needed.

Process Group A (HTN in control) patients meet once a year with the primary care physician and every six months with the care coordinator and take their BP at home, whereas Process Group B patients (not in control and titrating) are contacted every two weeks for assessment of BP home monitoring, medication adherence, and progress towards patient goals. The assessment is communicated to the physician via message basket and the plan of care revised as needed. Process Group C comprises patients with uncontrolled HTN who are waiting for a change in their care plan.

The protocol also sets forth contact frequency following an event such as a medication change, admission/discharge from the ED or hospital, or other significant occurrence. For example, the care coordinator contacts the patient within 48 hours and also at 7-10 days following a medication change. In the case of an event, the primary care physician is notified within 48 hours and the care coordinator contacts the patient within 48 hours, performs additional medication reconciliation, and reinforces any plan of care changes that occurred.

The care management protocol is augmented with a monthly huddle, which provides a review of the physician's panel focusing on patients who have not achieved physiologic control within 8 weeks of engagement with the care coordinator. The process prompts the physician to evaluate the current plan of care, discuss known and possible barriers that the patient may be experiencing, evaluate data from home BP monitoring, make changes to current medication regimes, or refer to a specialist for consultation without scheduling a traditional office encounter. The information gained through care coordinator-patient interaction is central to the decision-making of the team during the huddle.

## CARE COORDINATOR

Although the model is a team effort, the care coordinator plays a leading role. The coordinator provides education in diet, activity, home health, medication regimen, and more. Based upon the care management protocol, care coordinators receive a daily list of patients due for contact via phone or e-mail.

The following protocols are followed by the care coordinator:

- Management of uncontrolled BP:
  - Patient uses clinic-verified home BP cuff to monitor BP
  - Care coordinator contacts every two weeks via telemedicine or patient portal to assess BP control, medication adherence, medication side effects, and lifestyle changes
  - Care coordinator utilizes customized EMR tools to track disease parameters and communicate with providers for care plan changes
  - Care coordinators facilitate medication adjustments between physician visits by prompting physicians to adjust care plans and respond to treatment failures
  - Controlled therapy escalation until BP at goal
- Monitoring controlled BP ( $\geq 75\%$  of home BP readings at goal):
  - Ongoing but less-intensive contact with care team
  - Care coordinator contacts patient within 30 days of attaining goal BP
  - Spaced to every 1, 3, or 6 months depending on risk level if goal BP maintained for 30 days
  - More-frequent contacts as initiated by patient

## HEALTHCARE IT

MHTAV utilizes customized electronic medical record tools to track patient progress and prompt care coordinators to contact patients at intervals defined by disease protocols.

## OUTCOMES

The initial cohort of 30 patients improved from 40% to 80% in control in an average of 28 days.

Currently, level of HTN in control for patients in the program longer than 8 weeks is 83%.

## OVERCOMING BARRIERS

- Competing priorities
- Rapid iterative cycles of change to the model and tools
- Clearly defining terms such as *risk* and *protocol*
- Designing a scalable model providing increased access and improved quality and outcomes

## LESSONS LEARNED

- Multidisciplinary care cycles utilizing advanced care coordination and customized electronic medical record tools decrease clinical inertia and may significantly improve the proportion of patients attaining goal BP
- Patients are capable of reliable home BP monitoring and remote interaction with care coordinators to facilitate care plan adjustments
- Medication titration and lifestyle interventions delivered between clinic visits increase BP control in a shorter time cycle than the traditional office visit model



*Provided as an educational service by AMGA. Daiichi Sankyo, Inc. provided financial support for development of the materials but did not provide input into the content or the design of the materials.*

ONE PRINCE STREET, ALEXANDRIA, VIRGINIA 22314-3318  
TEL: (703) 838-0033 FAX: (703) 548-1890 WWW.AMGA.ORG

© 2012 American Medical Group Association and Daiichi Sankyo, Inc.  
All rights reserved.