10 Practical Steps to Improve Blood Pressure Control in Your Practice: Lessons learned from the NH ASTHO/Million Hearts Project

WellPoint Enhanced Personal Health Care Learning Collaborative
Oct 22, 2014

Rudy Fedrizzi, MD
Director of Community Health Clinical Integration
Cheshire Medical Center/Dartmouth-Hitchcock Keene

Stephanie Piet, RNC
Clinical Nurse Manager
Manchester Community Health Center

Niki Watson, BSN RN
Clinical Director
Lamprey Health Center
Similar to the national rates, data from the Behavioral Risk Factor Surveillance System (BRFSS) indicate that the NH rate of hypertension is just over 30%.

Heart disease is the second leading cause of death in NH, and the rate of hypertension has increased significantly from 23% (95% CI: 22%, 25%) in 2001 to 31% (95% CI: 29%, 32%) in 2011.

New Hampshire has identified cardiovascular disease as a health priority in its 2011 State Health Profile and 2013 State Health Improvement Plan.
In October 2013, New Hampshire, along with nine other states and the District of Columbia, were awarded a Million Hearts Project Grant by the Association of State and Territorial Health Officers (ASTHO), with funding from Centers for Disease Control and Prevention (CDC). CMC/DHK was provided funding to provide technical assistance to Federally-Qualified Health Centers in Nashua and Manchester to replicate our strategies and success in more diverse, urban settings.
CMC/DHK Results

BP <140/90 in patients with hypertension at Cheshire Medical Center/Dartmouth-Hitchcock Keene

- % Adequate BP Control
- Goal

Changemakers 2013
Hypertension Control
CHAMPIONS

Full list of Champions at millionhearts.hhs.gov

 Congratulations

Chesire Medical Center
Dartmouth-Hitchcock Keene

Manchester Community Health Care
Where Excellence and Caring go Hand in Hand
Integration as a Strategic Concept

A TRANSFORMED HEALTH SYSTEM: PRODUCING HEALTHY PEOPLE IN HEALTHY COMMUNITIES

Public Health System (Healthy Community) → Integration → Medical Care System

- Protective Factors and Resources
- Protection of Vulnerable People
- Patient Centered Primary Care
- Complex Medical Care

Promotion, Prevention, Preparedness

Community Partners and Individuals

© Adapted by Y. Goldsberry, R. Fedrizzi, D. Bazos, L. Ayers LaFaye and, J. Schlegelmilch from Centers for Disease Control and Prevention
Core Integration Strategy: Alignment

Fragmented system

Integrated system

Source: Paul Epstein Results that Matter Team
Remarkable **consistency** of responses between the providers and nurses

**Inadequate physical activity, excessive weight and unhealthy diet** were the lifestyle factors felt to contribute most to continued uncontrolled high blood pressure.

The most frequent, current provider-initiated strategies identified were recommending **lifestyle changes**, scheduling **additional office follow up**, and asking **patients to monitor their own blood pressure** and bring results to clinic visits.

Top barriers to adequate control in those with uncontrolled high blood pressure both providers and nurses identified factors where the **locus of control was patient-focused**. Challenges included **patient’s lack of awareness, understanding, or concern regarding the health implications of high blood pressure**. In addition there were **financial and compliance issues related to effective medication management**.
Step 2: Agree on Shared Vision and Measures

NH ASTHO/MH Specific Aim:
Within 9 months, improve the rate of controlled hypertension by 5% among individuals 18-85 who are diagnosed with hypertension and are patients at the Manchester Community Health center and the Lamprey Health Center-Nashua.

National Quality Forum #18 Measure for HTN (NQF#18):
Measure Description: The percentage of patients 18 to 85 years of age who had a diagnosis of hypertension (HTN) and whose most recent blood pressure (BP) was adequately controlled (<140/90) during the measurement year. For a patient’s BP to be controlled, both the systolic and diastolic BP must be <140/90 (adequate control).
Step 3: Understand the Current Process and Flow

Flow charting current workflow

Cause and Effect (Fishbone) Diagram
Barriers Observed at CMC/DHK

- Inconsistent work flow between primary care teams (medical homes)/providers
- Inconsistent or absent engagement of specialty care departments
- Inconsistent documentation (dictation and vital flow sheet) especially of second BP readings by providers in EMR
- Inconsistent BP technique
- Multiple brands of equipment/lack of timely maintenance and calibration
- Cost barrier of BP re-checks and lack of consistent, centralized process
- No agreement on universal triage and treatment algorithms
- Process for flow staff to notify provider of elevated BP is varied
- Lack of resources to effectively manage registries
- Lack of engagement /alignment of patients and the community
Step 4: Ensure Accuracy of BP measurement

7 evidence-supported best practices that all providers should insist on to improve patient care. Studies suggest that disregarding these elements can result in inadvertent 5-10 mmHg increases in BP:

1. Equipment and calibration
2. Appropriate rooming
3. Remove Clothing
4. Correct Cuff Size
5. Positioning
6. Slowly Deflate Cuff
7. Repeat if initial BP >140/90 after 3-5 minutes of rest
Step 5: Create Algorithms for HTN Care

**Triage/referral algorithms**

**Evidence-supported treatment algorithms**

**SIMPLE DRUG TREATMENT ALGORITHM FOR HTN**: Based on outcomes of Antihypertensive and Lipid-Lowering Treatment to prevent Heart Attack Trial (ALLHAT), credit to Kaiser Permanente Care Management Institute (CMI).

**ACE-Inhibitor/Thiazide Diuretic**
- Lisinopril/HCTZ (Advance as needed)
  - 20/25 mg x ½ daily
  - 20/25 mg x 1 daily
  - 20/25 mg x 2 daily
- Pregnancy Potential: Avoid ACE-Inhibitors

**Thiazide Diuretic**
- Chlorthalidone 12.5 mg to 25 mg OR HCTZ 25 mg to 50 mg

**Calcium Channel Blocker**
- Amlodipine (Advance as needed)
  - 5 mg x ½ daily
  - 5 mg x 1 daily
  - 10 mg x 1 daily

**Beta Blocker OR Spironolactone**
- Atenolol (Advance as needed)
  - 25 mg x 1 daily (keep heart rate >55)
  - 50 mg x 1 daily (keep heart rate > 55)
- OR
  - If on thiazide AND GFR >60 ml/min AND K < 4.5
  - Spironolactone (Advance as needed)
    - 25 mg x ½ daily
    - 25 mg x 1 daily
Quality Pillar – Hypertension

What percent of adult hypertensive patients within my panel have a blood pressure less than 140/90? Target is 79%.

<table>
<thead>
<tr>
<th>Provider Name</th>
<th>Patient Count</th>
<th>Aug-13</th>
<th>Jul-13</th>
<th>Jun-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keene - Team A</td>
<td>2449</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td>Keene - Team B</td>
<td>2153</td>
<td>86%</td>
<td>86%</td>
<td>86%</td>
</tr>
<tr>
<td>Keene - Team C</td>
<td>2426</td>
<td>84%</td>
<td>84%</td>
<td>84%</td>
</tr>
<tr>
<td>Keene - Team D</td>
<td>3164</td>
<td>86%</td>
<td>86%</td>
<td>86%</td>
</tr>
<tr>
<td>Keene - Walpole</td>
<td>1217</td>
<td>83%</td>
<td>83%</td>
<td>83%</td>
</tr>
<tr>
<td>Keene - Winchester</td>
<td>652</td>
<td>84%</td>
<td>84%</td>
<td>84%</td>
</tr>
</tbody>
</table>

Division PT COUNT BP<140/90

- **KEENE**: 12215 - 85%
- **Keene - Team A**: 2449 - 85%
- **Keene - Team B**: 2153 - 86%
- **Keene - Team C**: 2426 - 84%
- **Keene - Team D**: 3164 - 86%
- **Keene - Walpole**: 1217 - 83%
- **Keene - Winchester**: 652 - 84%

Keene Division % HTN Patients whose BP<140/90
Target = 79%
Step 7: Manage Patient Registries

In combination with a no-cost nurse clinic for BP rechecks, the use of a HTN registry was believed by the CMC/DHK care team to be the most important element in rapidly and sustainably improving BP control.

<table>
<thead>
<tr>
<th>PCP</th>
<th>MRN</th>
<th>PATIENT NAME</th>
<th>FSC</th>
<th>VALUE</th>
<th>BP Date</th>
<th>PCP Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDICARE 140/80</td>
<td>8/13/2012</td>
<td>F/UP PCP 10/23/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 140/58</td>
<td>4/26/2012</td>
<td>F/UP PCP 10/25/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 142/80</td>
<td>4/3/2012</td>
<td>F/UP PCP 10/26/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 140/90</td>
<td>6/14/2012</td>
<td>F/UP PCP 11/16/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 142/70</td>
<td>7/23/2012</td>
<td>F/UP PCP 11/20/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 142/80</td>
<td>8/21/2012</td>
<td>F/UP PCP 11/12/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 158/68</td>
<td>8/2/2012</td>
<td>Going to FL for winter 10/18/12 can not come in. 10/16/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 168/76</td>
<td>9/9/2012</td>
<td>In rehab in FLORIDA I'm 6/27 + 7/24 Needs to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 148/70</td>
<td>3/14/2012</td>
<td>schedule bp ck in NVC.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 140/90</td>
<td>12/11/2012</td>
<td>LMTCB needs pcp f/up</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 150/98</td>
<td>8/2/2012</td>
<td>NUC BP ck 10/15/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 144/78</td>
<td>6/18/2012</td>
<td>Updated BP 9/10/12 - 122/80 Updated BP 10/15/12 - 161/93 NUC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 148/88</td>
<td>6/26/2012</td>
<td>Updated BP 10/5/12 - 120/70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 162/86</td>
<td>8/10/2012</td>
<td>Updated BP 10/5/12 - 170/94 (Desilites)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 150/80</td>
<td>8/21/2012</td>
<td>Updated BP 10/8/12 - 130/62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 144/72</td>
<td>8/23/2012</td>
<td>Updated BP 10/8/12 - 136/86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 142/88</td>
<td>8/29/2012</td>
<td>Updated BP 10/8/12 - 160/100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 144/66</td>
<td>4/5/2012</td>
<td>Updated BP 10/9/12 - 132/82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 150/90</td>
<td>8/8/2012</td>
<td>Updated BP 10/9/12 - 130/82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICARE 142/88</td>
<td>8/9/2012</td>
<td>Updated BP 8/9/12 - 132/72 DOCUMENTED 9/11/12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cheshire Medical Center Dartmouth-Hitchcock Keene
Manchester Community Health Center
Lamprey Health Care
Where excellence and caring go hand in hand
Step 8: Communicate and Celebrate Success

For greatest collective impact - Consistent and open communication is needed across the many partners to build trust, assure mutual objectives, and encourage common motivation.
Step 9: Engage Patients

Evidence-supported wallet cards in English, Spanish and Portuguese supported by the NH Medical Society
Strengthened relationship and collaboration with the Manchester Health Department

YMCA will now offer reduced & no cost memberships to patients at Manchester Community Health Center

The Organization for Refugee and Immigrant Success (ORIS) will provide a summer farm stand in the parking lot of Manchester Community Health Center to increase access to fresh fruits and vegetables
Nashua Million Hearts

Getting Started:

- Administrative support for grant program
- Data needs: defining and developing the audit tool and the parameters
- Standardization of equipment, hypertension treatment protocol, screening competencies
- Evidence-based program – Keene Pathway
- Employees: building a team -selection, education
- New Community – Primary Care partnerships
Nashua Million Hearts

RN Lead for on-site program –
• Staff education; provider liaison

Patient data coordinator – Keene Model
• does not have to be clinical staff

Innovative Care delivery –
• Free walk-in blood pressure screening clinics- removal of a barrier; use of students; dietitian; dental practice

Language challenge –
• languages at LHC Nashua
Integration Applied to Million Hearts Initiative

Public Health System (Healthy Community)

Integration

Tobacco control advocacy, HeartSafe Designation

Know your Numbers Card, Healthy eating active living initiatives

Improved BP control, cholesterol screening

Optimal CVD Medication compliance and treatment

Promotion, Prevention, Preparedness

Disease Care

Community Partners and Individuals

© Adapted by Y. Goldsberry, R. Fedrizzi, D. Bazos, L. Ayers LaFave and, J. Schlegelmilch from Centers for Disease Control and Prevention
Importance of Integration

Efforts by the Citizens Health Initiative and the NH Medical Society to inform NH clinicians and call them to Integrated Action
Manchester implemented registry clinic-wide

- Total Number of Hypertensive Patients: 1413
- Number of Patients in Control Range: 941 (January 2014)
- Aug 2014 Number of Patients in Control: 1081
- Number of patients moved from registry to control: 140

Progress in Hypertension Control Rates:
- January 1, 2014: 65.8%
- Aug 31, 2014: 76.5%
- August: 10.7% improvement

Nashua – Lamprey – implementation of 1 provider pilot

- Total Number of Hypertensive Patients
  January: 262    July: 241
- Number of Patients in Control Range:
  January 2014: 153 / 262
  July 2014: 169/241
- Number of patients moved from registry to control: July- 31

Progress in Hypertension Control Rates:
- January 1, 2014: 58.4%
- July 3, 2014 : 70.1%
- July: 11.7% improvement
The Future.....

- Expanding registry coordination to provide comprehensive chronic disease management
- Explore the use of BP kiosks
- Integrate nutrition counseling and therapy
- Pharmacist integration
- Spreading of the improvement
- A plan for maintaining gains
Thank You

Rudy Fedrizzi, MD
Director of Community Health Clinical Integration, CMC/DHK
rfedrizzi@cheshire-med.com

Stephanie Piet, RNC
Clinical Nurse Manager, Manchester Community Health Center
spiet@mchc-nh.org

Niki Watson, BSN RN
Clinical Director, Lamprey Health Center
nwatson@lampreyhealth.org