

Bryan Health
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Controlling High Blood Pressure: A Systematic Approach to Improvement

Criteria 1 - Leadership/Planning

At Bryan Health, our vision is to elevate quality of life through better health. Leaders and key stakeholders throughout the organization create a three-year strategic plan that drives all facets of patient care across the health system. Our current strategic plan, Elevate 23, includes the organization's core values, mission, beliefs, critical success factors, and driving strategies. Teams of employees and leaders from various departments and health system entities create charters and improvement plans, all with a unifying purpose to improve the quality of care that is delivered at Bryan Health.

The mission of our organization is to advance the health of individuals in our region through collaboration with physicians and communities. Recognizing the potential impact that working toward a common goal could have on the various communities that the organization serves, the senior leadership team supported its first ambulatory health system improvement project, leveraging clinical leaders, IT resources, and improvement specialists to work cohesively toward a common, quality goal. This project targeted improving blood pressure control at outpatient clinics across multiple Bryan Health entities, including Bryan Physician Network, Bryan Heart, Bryan Medical Center, Crete Area Medical Center, Grand Island Regional Medical Center, Platte Valley Medical Clinics, and Merrick Medical Center. Primary, specialty, and urgent care clinics were included in the project scope and represent multiple communities and regions of the state, serving both urban and rural populations. Uncontrolled high blood pressure can result in cardiovascular disease and strokes. Our focus on improving blood

pressure control allowed Bryan Health to improve the quality of life through better health for patients across our region.

Process of Identifying Need

The considerations for selecting an improvement project centered on ensuring the project would be impactful, could be measured with data, aligned with other initiatives and our strategic plan, and promoted engagement among providers, staff, and patients. Hypertension is a preventable risk factor for cardiovascular disease, strokes, and kidney disease. Over half of adults in the United States are diagnosed with hypertension, and the American Heart Association (AHA) estimates that less than half are at target. Using data to drive decisions was an important requirement of the improvement project. CMS-165, Controlling High Blood Pressure, is an electronic clinical quality measure, eCQM, and measure reportable within our electronic health record. CMS-165 is a component of several value-based care and payer programs and could serve as a metric definition appropriate for our patient population. The CMS-165 baseline data for 2021 showed that over 34,000 patients with a diagnosis of hypertension had qualifying encounters at clinics across Bryan Health. A staggering 11,745 of these patients had uncontrolled blood pressure. The resulting blood pressure control rate of 66.2% was consistent with the sixth national decile; a higher rate and decile is better. We knew that we could and needed to do better for our patients and assist them with reducing their risk for mortality, poor outcomes, and high healthcare costs.

Ensuring that our project would align and add value to *all* of our clinics was important. Blood pressure is a universal vital that we take during most outpatient visits at primary,

specialty, and urgent care clinics, along with hospital outpatient visits. We could align our project with the Centers for Disease Control and Prevention's Million Hearts national initiative, which aims to prevent one million heart attacks and strokes by 2027 by improving modifiable risk factors, including hypertension. Selecting a project that would promote engagement across the care team was equally important. Per the CMS-165 metric definition, the last blood pressure measurement taken during a qualifying encounter (at any of Bryan's care locations) will determine if a patient's blood pressure is well controlled. This piece of the metric really spoke to Bryan Health's core value of "One Team, One Purpose" and provided an opportunity to connect this project to our expectation of working together as a team to provide better patient care.

After this initial evaluation, it became clear that an improvement project focused on blood pressure control was the right fit for our health system. The 2021 baseline data demonstrated an opportunity for improvement, and the metric definition provided national benchmarks to set goals and measure progress. The project was proposed to our stakeholders including entity and clinic leaders, providers, clinical staff, and community board members, who all shared a common enthusiasm for the impact this project could have on the betterment of our communities and patients.

Process Improvement Methods

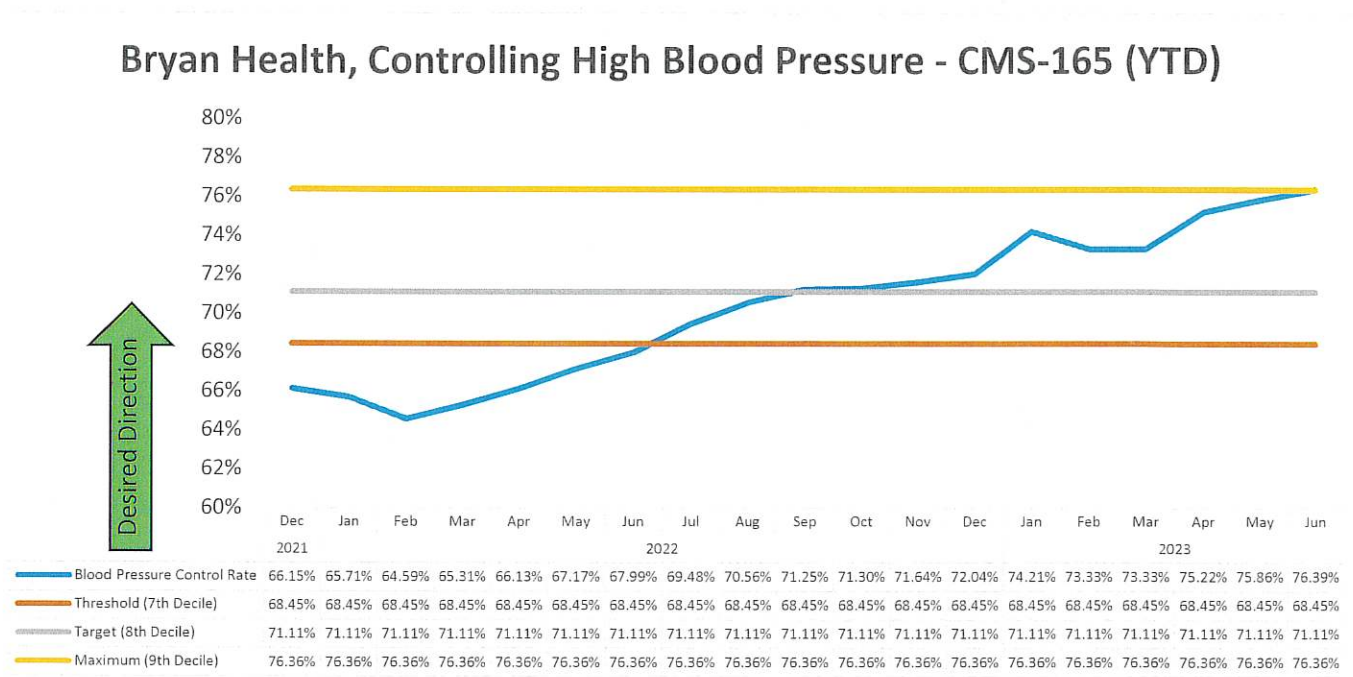
Our improvement methodology for this project aligns with the Institute for Healthcare Improvement's Model for Improvement, whereby we set an aim, conduct a systemic analysis, and then run iterative Plan, Do, Study, Adjust (PDSA) cycles to improve. The American Medical Association (AMA) and AHA's MAP program, which focuses on Measuring accurately, Acting

rapidly, and Partnering with patients, served as our best practice model. Our systemic current state analysis involved data analysis, procedures and training materials review, direct observation clinics, interviews with clinicians and leaders, and a summary gap assessment against the MAP program best practices. Our results identified several significant opportunities, which we prioritized and addressed systematically.

Our first priority for improvement was developing a written standard for accurate blood pressure measurement that could be adopted at all care sites. This was created through a literature review of best practices, observation of clinical staff, and iterative validation by providers and staff for ease-of understanding, efficiency, and effectiveness.

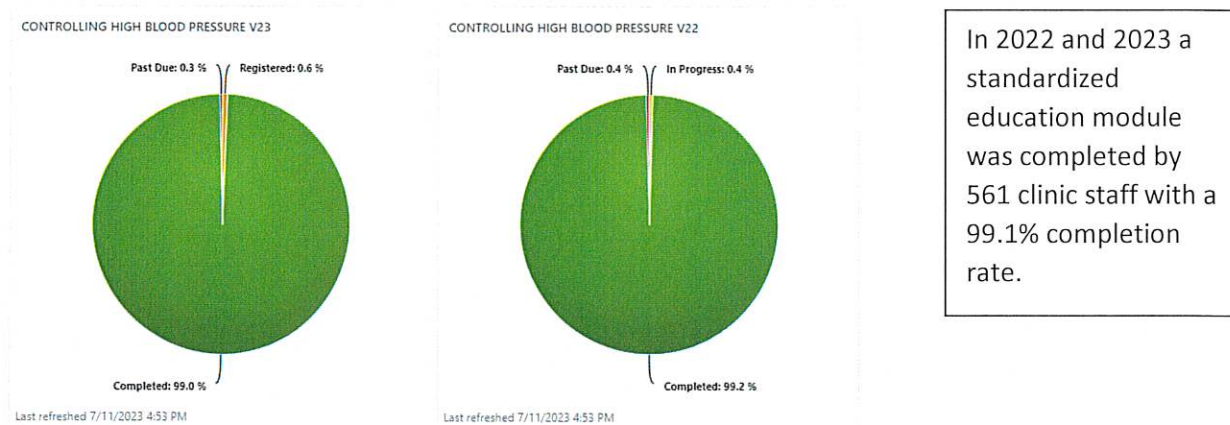
Our second priority for improvement (conducted concurrently with other interventions) was data visualization and access. The metric definitions for CMS-165 state that a systolic blood pressure of 139 mmHg or less and a diastolic blood pressure of 89 mmHg or less are considered controlled. The last blood pressure taken during the measurement year will count. Data was collected by running a report that includes eCQM data out of our electronic health record, including monthly and year-to-date performance, numerator, and denominator information. We created more detailed and interactive data, including trending data at the provider, clinic, entity, and system levels, published monthly and shared with all project participants. Provider-to-provider performance comparison and our goal of the 8th national decile were included in these files. This timely and standardized data model allowed our clinics to closely monitor progress aligned with the dates of process change. The providers, clinics, and entities are very competitive, and having individual data displayed during staff meetings increased motivation and engagement.

The graph below is an example of one of the graphs provided to teams. This graph displays the CMS-165 metric year-to-date by month, beginning with the baseline of December 2021. Health system performance and national benchmarks for the seventh, eighth, and ninth deciles are included for reference. Performance for CMS-165 resets yearly, with the numerator and denominator being based on patient encounters from January 1st – December 31st.



Our third improvement priority was consistent staff education for taking blood pressure measurements. Education frequency, content, and quality were variable across the entities. A standard computer-based learning module was created and is deployed to clinical staff on an annual basis. The training focuses on health risks associated with uncontrolled blood pressure, the importance of accurate measurements, demonstrates correct documentation within the electronic health record, and concludes with a test. A standardized skills competency was also created for manual and automatic measurements and is completed within each clinic annually. The educational interventions were deployed in June 2022, at which time we saw a 3.3%

increase in blood pressure over the following three month period. After the annual relaunch of this education in Q1 2023, the health system saw an increase of 2.5% in control rates over three months.



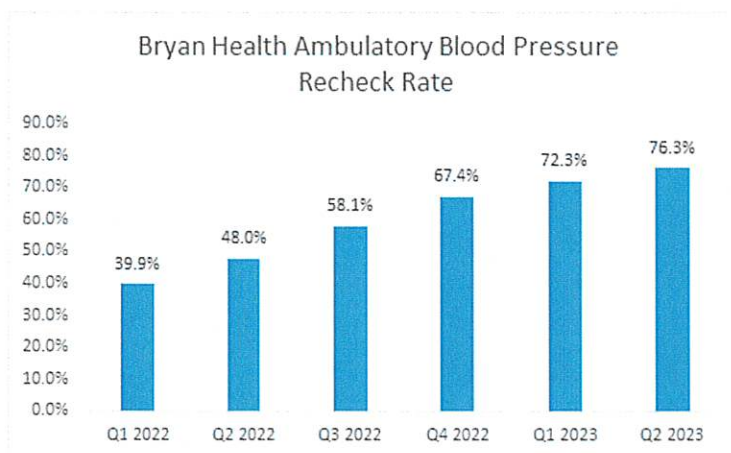
Our fourth improvement priority included our protocols for “Act rapidly” and “Partner with Patients”. Once providers were more confident in the measurement data and knowing staff had been properly trained, it was important to look at what providers were doing when an elevated measurement was obtained. This phase of the project focused on providers taking action and having a plan to help the patient achieve control. Process maps were created for primary care and specialty/urgent care clinics, outlining the appropriate next steps when a patient had elevated blood pressure measurements in the clinic. It was evident that act rapidly looked different in primary care and cardiology than it did for other specialty and urgent care providers. Appropriate next steps for primary care and managing-cardiologists could include a scheduled recheck visit with a nurse, referrals to ambulatory pharmacy, care navigation, or social work for additional support, medication changes, or home monitoring with planned follow-up, with a goal to reach control within three months from the initial elevated measurement. For non-managing specialists, next steps were focused on patient education and

encouraging follow-up with primary care providers. A team of providers and clinical staff assisted with the creation of these maps. Providers across the organization discussed best practices, barriers, and opportunities to enhance various service lines.

Partnering with patients to help engage them as active members of their health care is key to long-term success and sustainment. Many providers shared that their patients did not understand, despite the provider and staff efforts, what good blood pressure consisted of. In collaboration with the advancement department at Bryan Health and after receiving permission from the AMA and AHA, a new patient-facing visual was developed. The visual was shared with and endorsed by Bryan Health's Patient Advisory Council and is displayed in outpatient clinics across the organization, highlighting ranges of blood pressures and proper measurement positioning. A new patient resource was also developed to standardize and streamline education provided to patients on home blood pressure measurement.

In 2022, despite significant improvements with the standardized education, the project team was still receiving feedback from patients, employees, and providers about missed opportunities to measure accurately. The project leaders completed over 24 direct observations at various clinics to observe how blood pressure measurements were obtained by clinical staff. Observations included assessment of patient positioning, cool down time, equipment utilized, cuff size, rechecks of elevated measurements, and documentation in the health record. Feedback was provided to the clinic leader and follow-up was scheduled, if warranted. A common finding was missed rechecks due to staff and provider workflows. Random audits were shared with clinical teams that included samples of patients seen in the clinic to verify if a recheck was completed when the initial measurement was above 139/89.

Manual audits took significant time, and were not completed in real-time to provide feedback for daily performance. Recheck data became a high priority for the project team and through collaboration with the Information Technology department, an automated report was created in the spring of 2023 and has been a process measure for the 2023 project. Teams are able to run the automated report for daily, weekly, monthly, or yearly increments and can view data on employee, provider, department, and entity levels.



The graph to the left displays the recheck rates with data obtained from the newly created report. Since its release in the spring of 2023, several clinical teams have targeted efforts at increasing recheck rates.

Results

In 2022, Bryan Health achieved a year-to-date control rate of 72.04%, consistent with the 8th national decile, successfully meeting our project goal. Through June 2023, the year-to-date control rate for Bryan Health is 76.39%, consistent with the 9th national decile. The engagement of our providers has made a significant difference in reaching and sustaining the goal. Blood pressure control is a quality metric in several value-based care contracts that the clinics at Bryan Physician Network, Crete Area Medical Center, Merrick Medical Center, and Bryan Heart participated in during the 2022 measurement period. The improved performance for blood pressure control in 2022, combined with the successful performance in other metrics,

resulted in approximately \$2 million in shared savings and incentive dollars.

The MAP program focuses on measurement method, noting that automatic blood pressure machines are the most accurate measurement method, followed by manual cuffs, with the least accurate method being wrist cuffs. Every clinic completed an intake form that provided information on current resources; number of automatic and manual devices, available blood pressure cuffs, location of vitals rooms, and visual indicator for rechecks. A specialty clinic noted on the intake form that the devices used in the clinic were wrist cuffs. Providers and leaders of the project unanimously agreed that the health system's standard for equipment and measurement method needed to follow the recommendations of the MAP program. The project team applied for grant funds to replace all wrist cuffs, replace manual devices with automated machines, to update outdated machines, and to purchase home blood pressure machines to start self-measured blood pressure programs in several clinics. The grant funds that the health system received totaled over \$53,000.

Lessons Learned, Replicability, Sustainability

The key lesson that our health system learned was that our approach to improvement worked and resulted in the desired outcome that we set out to achieve at the end of 2021. The project design included stakeholders, executives, providers, and clinic leaders, from each entity that met on a monthly basis and encouraged collaboration, communication, and standardization. Identifying project leaders allowed for the organization and execution of project initiatives. We experienced varying levels of engagement across different stages of the project and addressed this by providing additional support and creating opportunities for reflection and sharing during our all-entity meetings. While this project is the first of its kind

within our health system, we have proven to ourselves that we can reach difficult goals, and that a cross-functional team that follows a formal improvement methodology facilitated by a performance excellence consultant is vital to success.

To ensure sustainability, we will continue to have the recheck report active in our electronic health record and will add new clinics and entities. Provider, clinic, and entity-level data will continue to be reported for the CMS-165 metric. Standardization of the self-measured blood pressure programs across the health system continue to be a priority for the remainder of 2023. Providers created a standard for calibrating patient-owned blood pressure devices to ensure patient-obtained data was accurate before entering it into the electronic health record. Information Technology created a tracking method for identifying when a patient-owned device has been calibrated, viewable by all health system staff. Tip sheets and tutorials were created to assist with orienting new staff. Each year the benefit of standardized staff education has proven successful. This computer-based module and the staff skills competencies will be launched for all clinical staff at the beginning of each calendar year.

The MAP program provided a framework for improvement that other organizations could adopt. Data was a key driver of provider engagement in the project and displaying current performance compared to baseline kept the providers motivated and focused on the project. We experienced the largest improvements within the "Measure accurately" portion of the project. Identifying gaps, standardizing processes, and communicating expectations are essential for improvement and sustainment.

Controlling High Blood Pressure: A Systematic Approach to Improvement

Bryan Health, Lincoln, NE



Background

- First health system quality project focused on ambulatory clinics.
- 2021 baseline data demonstrated a blood pressure control rate of 66.2% (6th national decile)
- Project scope included primary, specialty, and urgent care clinics across four health system entities

Plan

- Measure accurately - standardize staff education on proper blood pressure measurement, provide feedback to clinical staff through observations, and create a report that can be run on demand to provide data on recheck performance.
- Act rapidly – create a team of providers, clinical staff and support services to identify timeline for desired control from elevated measurement and follow best practice recommendations for possible interventions to manage elevated blood pressure, recognizing this will look different in primary care compared to specialty/urgent care
- Partner with patients – create patient materials focused on AHA/AHA guidelines for accurate measurement and control categories, utilize grant funding to update clinic machines and to purchase home monitors for self-measured blood pressure program at primary care clinics

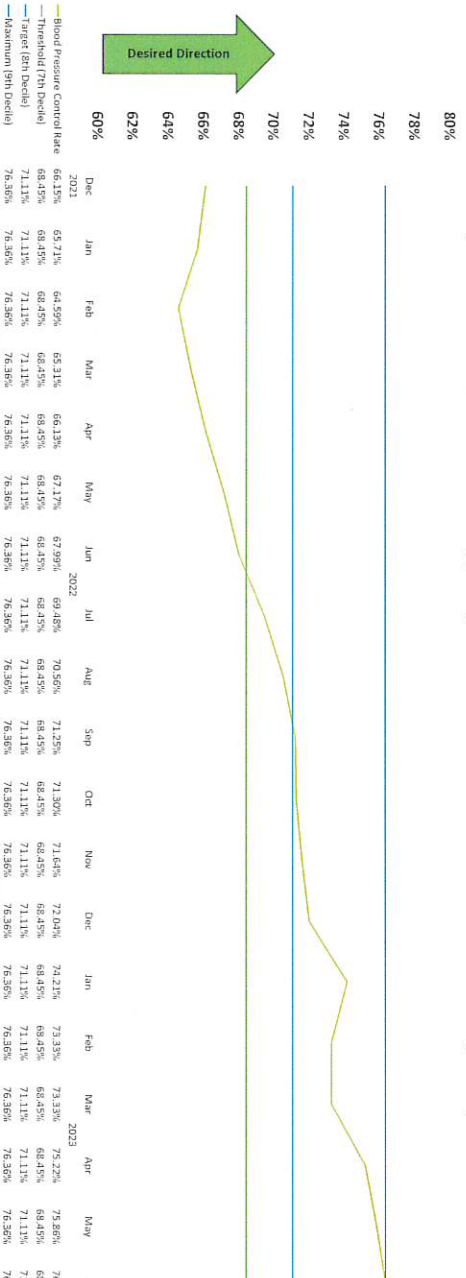
Results

- Control rate: **76.39%** (YTD as of 7/1/2023, 9th national decile)
- Education: **99.1%** of clinic staff successfully completed a learning module on accurate measurement and completed a test
- Elevated measurement recheck rate: **76.3% Q2 2023.**

Bryan Health Ambulatory Blood Pressure Recheck Rate



Bryan Health, Controlling High Blood Pressure - CMS-165 (YTD)



Aims

Improve blood pressure control for all patients with a diagnosis of essential hypertension to a rate of 72.04% (8th national decile) across in-scope Bryan Health ambulatory service lines by December 31, 2022.

Measure

- Outcome: Controlling High Blood Pressure Control Rate (CMS-165 eCOM)
- Process: Elevated Blood Pressure Measurement Recheck Rate

Next Steps

- Evaluate health equity data
- Collaborate with our OB/GYN clinics to improve maternal hypertension control
- Partner with Bryan Heart outreach clinics on accurate measurement education
- Continue to coach using metric data

Team

Lynne Nelson, Scott McClurg: Performance Excellence, Dr. John Trapp, Dr. Mike Sayers, Dr. Keith Miller, Dr. Brian Buhlke, Dr. Ryan Buse & Clinic Leaders

ELEVATE 23

Vision

Elevate quality of life through better health.

Mission

Bryan Health's mission is to advance the health of individuals in our region through collaboration with physicians and communities.

Critical Success Factors

Community Engagement, Physician Collaboration, Equity, Brand, Technology and Security, Finance

Core Values

One team, one purpose
Spread a smile, go the extra mile
Live it, own it
Care like crazy
Motivate, appreciate
Know the way, show the way
Enjoy the journey

Beliefs

Integrity ... our foundation
Service ... our standard
Excellence ... our distinction
Collaboration ... our investment
Leadership ... our future

Driving Strategies

A – Demonstrate Quality and Value

We will use data to prove reliable clinical outcomes, affordability and efficiency to employers, providers, patients and payers.

B – Create Virtual Care Strategies for Seamless Consumer Experiences

We will engage our communities by adopting consumer centric solutions that address preference for access, affordability and personalization.

C – Develop the Workforce of Today and Tomorrow

We will secure a sustainable workforce through outreach, education, scholarship and a focus on the individual's financial, physical and mental well-being.

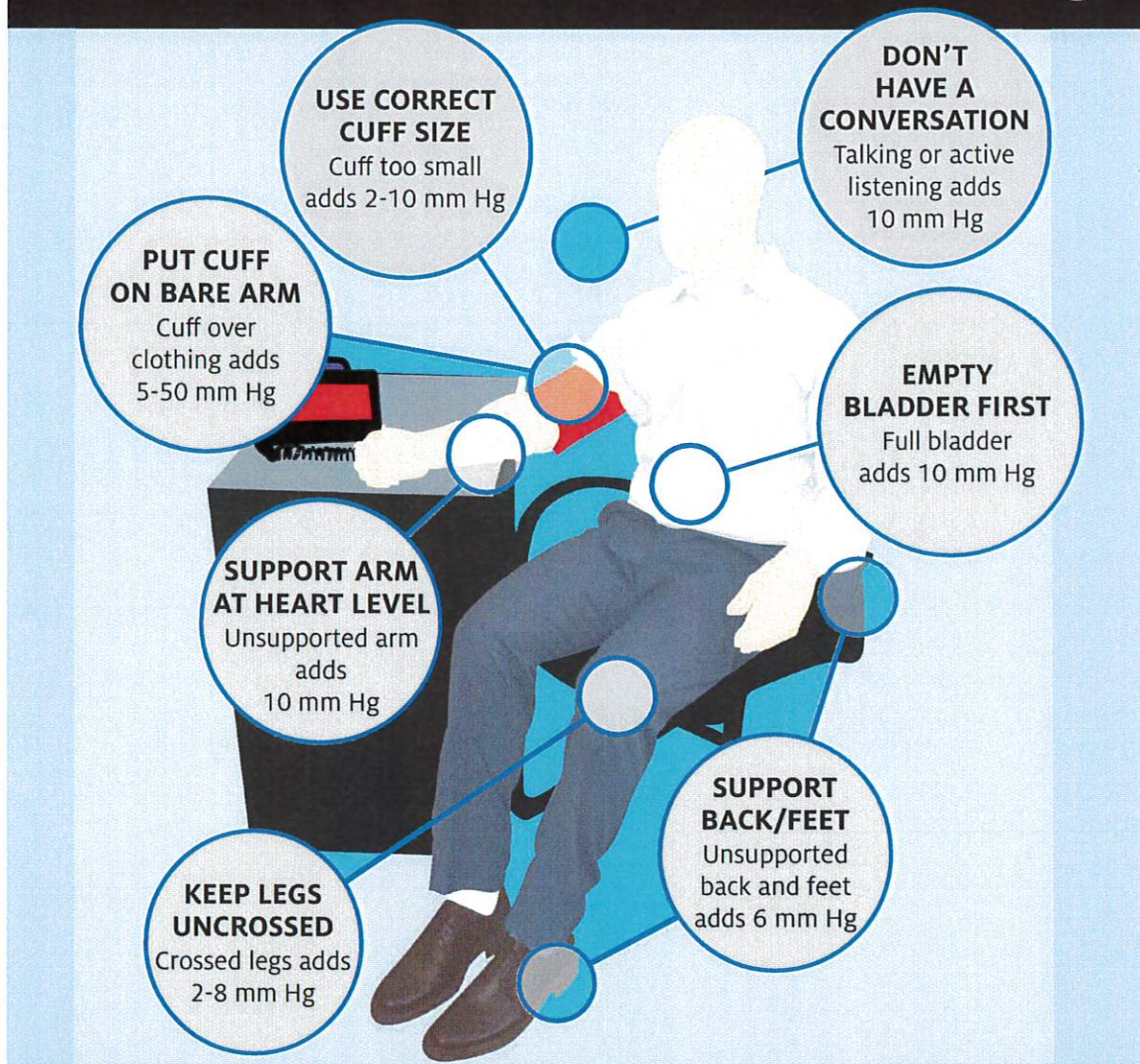
D – Thoughtfully Expand our Footprint

We will extend Bryan's services through targeted tertiary offerings and developing integrated relationships with interested physicians, providers and hospitals.

E – Improve Community Health

We will provide leadership in health improvement and equitable care to the communities we serve.

Steps we take for an Accurate Blood Pressure Reading*



What Do My Numbers Mean?

AMERICAN HEART ASSOCIATION RECOMMENDATIONS:

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)	and/or	DIASTOLIC mm Hg (upper number)
NORMAL	LESS than 120	and	LESS than 60
ELEVATED	120-129	and	LESS than 80
HIGH BLOOD PRESSURE (Hypertension) Stage 1	130-139	or	80-89
HIGH BLOOD PRESSURE (Hypertension) Stage 2	140 or higher	or	90 or HIGHER
HYPERTENSION CRISIS (Consult your doctor immediately)	HIGHER than 180	and/or	HIGHER than 120

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This resource is part of AMA MAP BP™, a quality improvement program. Using a single or subset of AMA MAP BP tools or resources does not constitute implementing this program. AMA MAP BP includes guidance from AMA hypertension experts and has been shown to improve BP control rates by 10 percentage points and sustain results.

Manual Blood Pressure Competency Assessment

Employee Name: _____

Date: _____

Skill	Meets competency	Needs further training	Method of validation
Explain procedure to patient			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Ensure patient has used the restroom and has an empty bladder			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Have patient sit in a chair and rest for 3-5 minutes			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Determine appropriate cuff size for patient			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Position cuff correctly on patient's bare upper arm (or indicated location)			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Feet flat on floor or supported on firm surface			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Legs uncrossed			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Seated with back supported			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Arm supported with middle of cuff at heart level			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Arm relaxed with palm facing up			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
No talking during measurement			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Palpate radial pulse			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Inflate cuff until radial pulse is obliterated, pump up an additional 20-30 mmHg			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Deflate cuff at rate of 2 mmHg per second			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Document BP			Vitals flowsheet was used.
Verbalize appropriate next steps for measurement equal to or greater than 140/90.			Follow clinic protocol as indicated.

Evaluation method: (Use of a double-headed stethoscope, simulation arm or similar method to assess competency in interpretation of Korotkoff sounds is recommended.)

Double-headed stethoscope Simulation arm Demonstration

Pass Fail

Trainer signature

Date

Employee signature

Date

Automatic Blood Pressure Competency Assessment

Employee Name: _____

Date: _____

Skill	Meets competency	Needs further training	Method of validation
Explain procedure to patient			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Ensure patient has used the restroom and has an empty bladder			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Have patient sit in a chair and rest for 3-5 minutes			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Determine appropriate cuff size for patient			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Position cuff correctly on patient's bare upper arm (or indicated location)			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Feet flat on floor or supported on firm surface			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Legs uncrossed			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Seated with back supported			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Arm supported with middle of cuff at heart level			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Arm relaxed with palm facing up			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
No talking during measurement			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Press "start" button on machine			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
If an error reading occurs, start over			<input type="checkbox"/> skill demonstration <input type="checkbox"/> direct observation
Document BP			Vitals flowsheet was used.
Verbalize appropriate next steps for measurement equal to or greater than 140/90.			Follow clinic protocol as indicated.

Trainer signature _____

Date _____

Employee signature _____

Date _____

Pass Fail

How to Check Your Blood Pressure at Home

Your provider has asked you to check your blood pressure at home. If you don't have a blood pressure machine, a list of approved devices is available at: validatebp.org.

Here is some important information to make sure your readings are accurate.

When to take your blood pressure:



Morning: Take your blood pressure every morning before you eat, drink or take any medicines



Evening: Take your blood pressure every evening at least 30 minutes after eating or exercising



Use the restroom before you take your blood pressure



Wait 30 minutes after exercising



Wait 30 minutes after eating, drinking alcohol or using tobacco products

How to take your blood pressure:

1

Position the cuff directly on your arm.
Do not roll up your sleeve so that it is tight on your arm. The cord should go toward your hand, in the middle of your forearm. If the Velcro doesn't reach or easily attach, you may need a larger cuff.

2

Rest both feet flat on the floor with your back supported.
Rest your arm at heart level on a table or the arm of a chair.



3

Sit quietly for 5 minutes or more before taking your blood pressure.
Avoid talking while your blood pressure is being measured.

4

Start the monitor
Press the button or squeeze the ball to measure your blood pressure.
Write down the time, the measurement and your pulse.
Wait 2 minutes.
Repeat 2 or 3 times.
Write down the measurements and your pulse on the card you received from your doctor's office.

Your target blood pressure: ____ / ____

If you have any questions or concerns, please call your doctor's office.

EMERGENCY: If your blood pressure is 180/110 or higher AND you have chest pain, shortness of breath or a severe headache, call 9-1-1.

Other information:
