From 70 to 80 Percent

The Hypertension Management Toolkit

VERMONT DEPARTMENT OF HEALTH

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From 70 to 80 Percent

The Hypertension Management Toolkit

Acknowledgements

Co-Authors

Robin Edelman, MS, RD, CDE
Vermont Department of Health

Jennifer Gordon, MSW
The New England Quality Innovation Network -
Quality Improvement Organization

Contributors and Editors

Emily Bartling, RN, BSN, CCM, CPHQ
OneCare Vermont

Virginia Hood, MBBS, MPH
Larner College of Medicine, University of Vermont

Alexandra Jasinowski, BS
Vermont Blueprint for Health

Suzanne Lapointe, RN
University of Vermont Medical Center

Patricia Launer, RN, CPHQ
Community Health Accountable Care, LLC

Nicole Lukas, MA
Vermont Department of Health

Charles Maclean, MD
Larner College of Medicine, University of Vermont

Kristi Poehlmann, RN
Cathedral Square Corporation, Support and Services at Home

Jenney Samuelson, CHES
Vermont Blueprint for Health

Connie van Eeghen, DrPH, MHSA, MBA
Larner College of Medicine, University of Vermont

Introduction

Why another resource for identifying and managing hypertension?

Because hypertension is the most significant cardiac risk factor in older adults,[1] and Vermont data show that it may be under-identified and not as well controlled as possible.

Research demonstrates that lowering blood pressure by 10 mm Hg in patients with hypertension reduces cardiovascular and stroke mortality by 25% and 40%, respectively.[2]

While data are limited for controlled blood pressure among those with a hypertension diagnosis, what is reported by Vermont practices shows blood pressure control at approximately 70%. This leaves room for improvement. Increasing the rate of blood pressure control to 80% is a realistic target, given the available evidence-based treatment protocols and accompanying resources. Standardizing implementation across Vermont may prevent misdiagnosis, under- and over-treatment of hypertension, and improve the accuracy of blood pressure measurement across the health care system.

While a 70 percent success rate might sound good to a practice, it's unacceptable from the patient's standpoint. A practice may be interested in how well it's doing for its entire patient population while a patient wants to know how well the practice is doing by him or her. As Roger Resar, MD, a Senior Fellow at the Institute for Healthcare Improvement says, "For the individual patient, reliability is an all-or-none matter. If the right care has five elements and the health care team accomplishes all five only 70 percent of the time, that's 100 percent failure for each of the 30 percent of patients who don't get all the recommended care. There is no partial credit for reliability." How do we improve reliability? We must rely on evidence-based protocols that are widely agreed-upon, like the JNC 7 and 8 guidelines for hypertension treatment.

This toolkit will be updated annually and may be downloaded for free. An online education module with an option to earn CME/CEU is available to facilitate implementation of a hypertension control project in your practice.

Join fellow clinicians in taking the '70 to 80 percent challenge' to improve hypertension management, increase rates of population blood pressure control, and decrease morbidity and mortality due to hypertension.

Introduction References

1. James PA, Oparil S, Carter BL, et al. 2014 Evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed the Eighth Joint National Committee (JNC 8) [published correction appears in JAMA. 2014;311(17):1809]. JAMA. 2014;311(5):507–520.

2. Law MR, Morris JK, Wald NJ. Use of blood pressure lowering drugs in the prevention of cardiovascular disease: a meta-analysis of 147 randomized trials in the context of expectations from prospective epidemiological studies. BMJ. 2009;338:b1665.

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PART 1

The Data

Hypertension Prevalence

Eighty million adults (one in three) have high blood pressure in the United States today; prevalence increases with age.

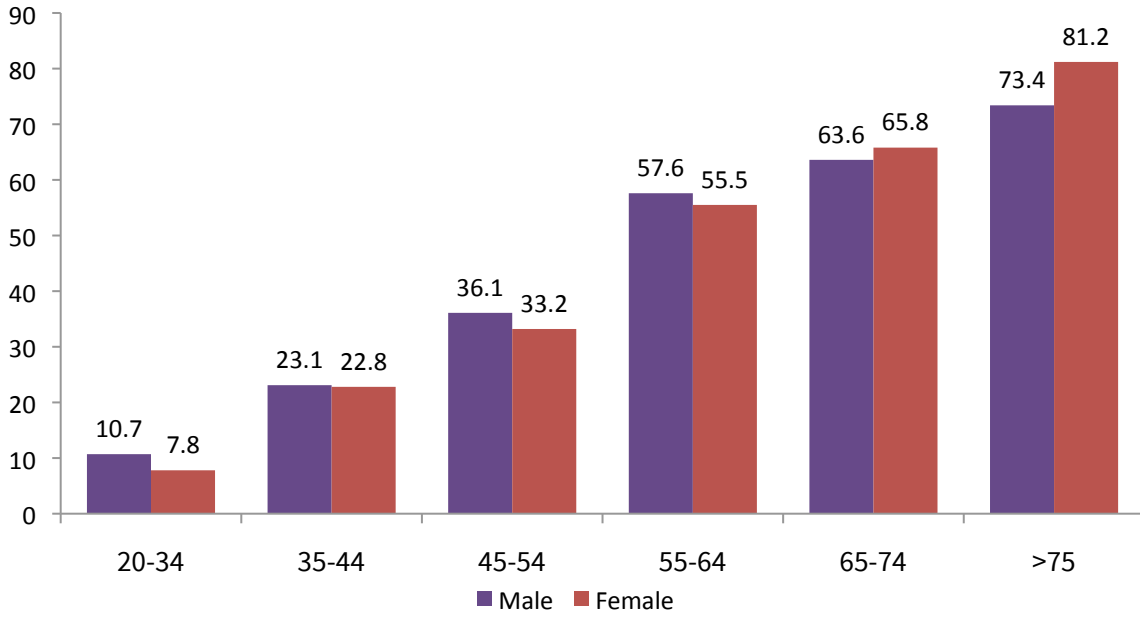

FIGURE 1: PREVALENCE OF HYPERTENSION

Source) TARGET:BP, Heart Disease and Stroke Statistics – 2017 Update: Chapter 9; American Heart Association, American Medical Association

Benchmarks for Blood Pressure Identification/Control

Data regarding the statewide prevalence of both diagnosed and undiagnosed hypertension is lacking in Vermont, however, the telephonic survey Behavioral Risk Factor Surveillance system (BRFSS), indicates that 25% of Vermonters are aware that they have hypertension.[1]

From 2011 to 2014, the nationwide prevalence for adults overall (age 18 plus) diagnosed with hypertension was 29% and that of adults age 60 and over was 65%.[2] These national values for overall adult and older adult prevalence can serve as benchmarks for adequate diagnosis of hypertension in primary care practices. In 2014 staff from the Centers for Disease Control and Prevention authored an editorial in JAMA noting that among the US population with uncontrolled blood pressure 36% (approximately 13 million people) are neither aware of their hypertension, nor taking antihypertensive medications. These authors appeal to healthcare providers to find patients with undiagnosed hypertension, "hiding in plain sight".[3]

In comparing these numbers to the reported 25% of Vermonters who are aware of their hypertension, one can infer that it may be under-identified in Vermont. Up to 20% of Vermont adults 18 and older (approx. 72,000 adults) may have hypertension and not know it.[4]

What is the prevalence of hypertension in your practice?

Vermont primary care practices can query their electronic medical records to assess the prevalence of diagnosed hypertension for all adults and for those 60 and over, and compare with the national benchmarks. Calculate:

Adult patients with a diagnosis of essential hypertension ÷ Adult patients x 100

Compare to national benchmarks of 29% (all adults) and 65% (adults 60 and over).

National data indicate that only about half the people with hypertension have blood pressure that is controlled to a target of <140/90.[5] Vermont aggregate data for controlled blood pressure in those with diagnosed hypertension are available from a variety of sources. While there may be differences in the exact methods used to determine the population under study, these estimates provide useful information about hypertension control in our region.

- **The Vermont Blueprint for Health** uses an All-Payer database to track quality and utilization metrics, such as blood pressure control for patients with hypertension (NQF 18). These data are collected on Patient-centered Medical Homes that are connected to a clinical registry. Blueprint reports blood pressure control as 71% (N=29,630).[6]

- **OneCare Vermont**, an Accountable Care Organization (ACO), collects quality measure data on an annual basis for attributed lives in the Medicare, Medicaid, and Commercial populations. The 2015 performance rate for controlling hypertension in 2015 for Medicare was 71.21% (N=8,568), Medicaid 67.9% (N=2,197), and Commercial 70.7% (N=2,797).[7]

- **The 2015 Uniform Data System** reported on Vermont's individual federally qualified health centers with ranges from 52.9% to 75.3% (9 of the 11 sites reporting less than 70%).[8]

- ☆ **Cheshire Medical Center/Dartmouth-Hitchcock Keene**, a Million Hearts Champion, serving a hypertensive population of 12,000 reported 72% in 2012 and raised their "in control" rate to 85% within a year.[9]

- **UVM Medical Center Primary Care** practices report that among patients 18-85 years with hypertension, 66% were at a target of <140/90 (N=16,137).

How well controlled is hypertension in your practice?

Vermont primary care practices can query their electronic medical records to assess their percent "in control." Age cut-offs and exclusions will vary based on specific instructions for unique performance measures, but generally the measurement is:

adult patients with last measured systolic BP <140 and diastolic BP <90	÷	adult patients with a diagnosis of essential hypertension	x	100

Controversy in Determining Blood Pressure Targets

In the past few years experts have supported differing blood pressure targets. In 2014 the JNC8 guideline recommended a higher blood pressure target for patients 60 and older (150 systolic versus 140 systolic) than was recommended under JNC7.[10] On the other hand the SPRINT trial examined the benefits of reducing systolic blood pressure to about 130 systolic among older patients with at least one other risk factor but without diabetes. The results of this trial are still being debated, and showed mortality benefits, but also an increase in adverse effects.[11]

This Hypertension Management Toolkit is committed to provide links to updates regarding publications addressing this controversy. As the toolkit went to press in 2017 guidelines jointly published by the American College of Physicians and the American Academy of Family Physicians recommended that clinicians consider intensifying pharmacologic treatment in adults aged 60 years or older with select conditions or risks such as history of stroke or transient ischemic attacks to achieve a target systolic blood pressure of less than 140 to reduce the risk of stroke or cardiac events. The 2017 March/April issue of the Annals of Family Medicine provides additional guidelines.[12]

Part 1 References

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2. Data Brief No. 220, November 2015. Sung Sug (Sarah) Yoon, Ph.D, R.N.; Cheryl D. Fryar, M.S.P.H.; and Margaret D. Carroll, M.S.P.H.

3. Wall HK et al. Patients with undiagnosed Hypertension, hiding in plain sight. JAMA 2014; 312(19): 1973-1974.

4. Vermont Department of Health. 1305 Surveillance: State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity, and Associated Risk Factors and Promote School Health – Data Pages. http://healthvermont.org/sites/default/files/documents/2016/12/HS_1305_Data_Pages_081816.pdf. August 18, 2016.

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6. Blueprint statewide Profile Accountable Care Organization Measures Detail, July 2014 - June 2015.

7. https://www.onecarevt.org/docs/2015%20Quality%20Performance%20Results%20Table.pdf

8. http://bphc.hrsa.gov/uds/datacenter.aspx?q=d&year=2015&state=VT#glist

9. Ten Steps for Improving Blood Pressure Control in New Hampshire: http://www.dhhs.nh.gov/dphs/cdpc/documents/tensteps-bpcontrol.pdf

10. JNC 8 Guidelines for the management of Hypertension in adults. 2014 http://www.aafp.org/afp/2014/1001/p503.pdf

11. Wright, J. T., Jr., Williamson, J. D., et al. (2015). "A Randomized Trial of Intensive versus Standard Blood-Pressure Control." N Engl J Med 373(22): 2103-16.

12. Pharmacologic Treatment of Hypertension in Adults Aged 60 Years or Older to Higher Versus Lower Blood Pressure Targets: A Clinical Practice Guideline From the American College of Physicians and the American Academy of Family Physicians http://annals.org/aim/article/2598413/pharmacologic-treatment-Hypertension-adults-aged-60-years-older-higher-versus

PART 2

How To Use the Toolkit

This toolkit is intended for ambulatory care practices whose leaders, clinicians, and staff want to improve the process of managing Hypertension for their patients. It combines two approaches which may improve the quality of care you provide to patients with Hypertension, while also improving your business processes.

The first approach focuses on introducing Lean quality improvement methods into the practice. "Lean" is both a mindset and a method to engage clinicians and staff in organizing their practice to run more smoothly. The focus of Lean is to eliminate waste, improve efficiency, and most importantly, add value for the patient by improving processes. Benefits include: increased patient and staff satisfaction, waste elimination, process standardization, and innovation at the point of care. The workflow redesign steps identified in this toolkit are based on the Lean methodology of quality improvement.

The second approach is to develop a population health management methodology in your practice. Population health management equips healthcare teams with the techniques to monitor their patient populations to provide necessary preventive and chronic care to all patients, regardless of the frequency of visits. The two primary reasons for implementing population health management are: 1) addressing chronic and preventive care has been shown to improve the health of patients, and 2) shifting to outcome focused care will prepare practices for the expected future of value-driven payment models, in which reimbursement is at least partially dependent on population health outcomes.

This toolkit provides a detailed description of each step to facilitate a quality improvement project and is targeted for use by project managers and practice facilitators within the practice organization or who are external consultants.

Fast Track

If you are interested in using a streamlined version of the toolkit, follow the Practice Fast Track. The Practice Fast Track is intended for those who have already conducted the initial steps of the Hypertension Management Toolkit and are interested in experimenting with strategies relatively quickly.

The Fast Track steps are in Stage 2: Design, and are shown in green with a fast track icon.

The toolkit is made up of three stages that can be used sequentially or in the order that is most effective for the practice. The diagram below identifies the modules in each stage for navigation to the desired starting point.

STAGE 1: ENGAGE AND PREPARE

Practice leaders decide whether this is a good process for the practice and, if so, prepare a practice-based project team to carry it out.

Step 1.1
Conduct a practice readiness assessment

Step 1.2
Understand the A3

Step 1.3
Identify baseline

Step 1.4
Build the team

Step 1.5
Schedule effective meetings

STAGE 2: DESIGN

The project team reviews the current issues facing the practice regarding managing Hypertension and selects specific strategies that can be used by the practice.

Step 2.1
Team startup

Step 2.2
Analyze workflows

Step 2.3
Identify contributing factors

Step 2.4
Review and select strategies

Step 2.5
Design new work flow

Step 2.6
Draft implementation plan

Step 2.7
Check in with practice leaders

STAGE 3: IMPLEMENT

The project team and other practice members review the team's work and the team's plan to get started. Some or all of the selected strategies are put in place following the practice's preferred quality improvement process, such as Plan, Do, Study, Act, (PDSA cycle).

Step 3.1
Implementation plan and measuers

Step 3.2
Evaluation and closure

FIGURE 2: TOOLKIT STEPS

PART 3

Quality Improvement

STAGE 1: ENGAGE AND PREPARE

Practice leaders decide whether this toolkit is a good choice for the practice. If it is, they prepare a practice team to carry it out.

Estimated time to complete:
4 hours of practice leader's time

The five steps in this stage are listed below, with more detail on following pages.

Steps:

1.1 Conduct a practice readiness assessment

1.2 Understand the A3

1.3 Identify your baseline and shared objectives

1.4 Build the team

1.5 Schedule effective meetings

Step 1.1
Conduct a practice readiness assessment

Time: One hour

Changing the way a practice manages hypertensive patients may lead to an increase in work demand and can therefore be challenging for the healthcare team. Before starting such a project, practice leaders should evaluate whether this project is a good fit at this time.

The hypertension Practice Readiness Assessment (Appendix A) can be used to collect anonymous feedback from a sample of practice members to guide this decision. Document conclusions for a later project team and to educate clinicians to engage their support.

Is there low readiness?

Try the following with your practice members:

1. Identify the areas in which there are barriers
2. Motivate with practice-specific data
3. Educate on the importance of improving management of hypertension
4. Re-assess in four months

Task 1. Identify practice clinicians and staff from different roles among clinical and non-clinical staff to complete the Practice Readiness Assessment (Appendix A). If the practice has eight or fewer members, distribute to everyone.

Task 2. Distribute the assessment, with instructions about the date it should be returned and where it should be sent.

Task 3. Look for two or more ratings of "1" or "2," then consider, as practice leaders, whether this is an indication that the project should be done at this time or needs additional preparation before starting. Explanation:

- Items 1 to 4 relate to perceptions about whether the process of caring for hypertensive patients needs to change.
- Items 5 to 7 ask about the method of change.
- Item 8 asks about managing change.
- Items 9 and 10 is about motivation to change.

Task 4. Review all comments for additional indications of whether the practice is ready to conduct this project at this time. When ready to proceed, continue to Step 1.2.

Step 1.2
Understand the A3

Time: One hour

"A3" is the name of a structured problem-solving method and communication tool that will help to facilitate the practice's design team for hypertension management. As the team completes the steps in this toolkit, the practice will look at each of these elements. With each element, you will see where it fits on the A3 Template (Appendix B). At the end, the A3 Template will be completed and may be used as a working document.

1. Look at the situation as it exists right now. This is called "the Current State."

   AND

2. Propose actions to bring about a new version of that situation sometime soon. This is called "the Future State."

This structure of A3 has a basic rule: use the A3 sheet of paper (11" x 17") in landscape format (the 17" side is the horizontal side) and divide it vertically into two equal halves by folding it into a booklet. When the booklet is open (lying flat), write everything to do with the Current State on the left side of the paper. And, write everything to do with the Future State on the right hand side. Remember: always refer to the team that is planning how the practice will improve its hypertension care.

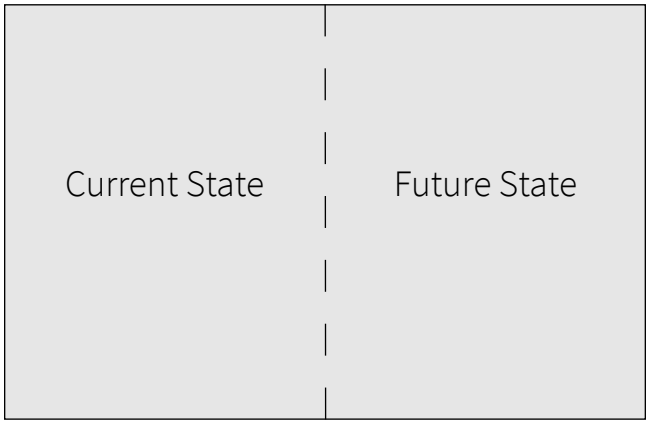

FIGURE 3: A3 FRAMEWORK

Step 1.2 References

1. Jimmerson C, Weber D, Sobek DK, 2nd. Reducing waste and errors: piloting lean principles at Intermountain Healthcare. Joint Commission journal on quality and patient safety / Joint Commission Resources. 2005;31(5):249-257.

2. Endsley, Magill, & Godfrey, 2006; Healthcare Performance Partners, 2007; Jimmerson, Weber, & Sobek, 2005; Liker & Franz, 2012)

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5. Liker, J. K., & Franz, J. K. (2012). THE TOYOTA WAY: Helping Others Help Themselves. Manufacturing Engineering, 149(5), 7.

Step 1.3
Identify your baseline and shared objectives

Time: One hour, if the electronic health record has this information in captured fields.

Most quality measure programs use National Quality Forum (NQF) measure #18, which is described in the table below. For more detailed information see NQF 18 Measure Specification (Appendix C).

TABLE 1: NATIONAL QUALITY FORUM (NQF) MEASURE #18[1]	
Description	The percentage of patients 18 to 85 years of age who had a diagnosis of hypertension and whose blood pressure (BP) was adequately controlled (<140/90) during the measurement year.
Numerator	The number of patients in the denominator whose most recent BP is adequately controlled during the measurement year. For a patient's BP to be controlled, both the systolic and diastolic BP must be <140/90 (adequate control). To determine if a patient's BP is adequately controlled, the representative BP must be identified.
Denominator	Patients 18 to 85 years of age by the end of the measurement year who had at least one outpatient encounter with a diagnosis of hypertension during the first six months of the measurement year.
Exclusions	Pregnant women, patients with End-Stage Renal Disease (ESRD) and patients who had an admission to a nonacute inpatient setting during the measurement year.

Task 1: Search your electronic health record for patients that meet certain criteria. If your organization is already reporting on hypertension quality of care for a registry or accrediting bodies, internal reports may already be available.

Include the data that are most relevant to your aims and target metrics. Below are suggested criteria, captured in coding or discrete fields of an EHR. The items in bold are must captures.

- **Age 18 to 85**
- **Gender**
- **BMI (height & weight)**
- **ICD-10-CM diagnosis for hypertension**
- **Last recorded blood pressure <140/90**
- Patient encounter during performance period (CPT or HCPCS): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99341, 99342, 99343, 99345, 99347, 99348, 99349, 99350, G0402, G0438, G0439
- Medication class and generic name equivalent, dose and frequency of antihypertensive, lipid-lowering, and diabetes medications
- Presence of hypercholesterolemia, hyperlipidemia, diabetes mellitus Type 1 and Type 2
- Presence of concomitant cardiovascular risk factors and diseases. For example; smoking, menopausal status, nephropathy, congestive heart failure, hypercholesterolemia, and family history of cardiovascular disease. May be captured in problem list
- Lab data: serum potassium, serum creatinine (estimated glomerular filtration rate [eGFR]), LDL cholesterol (mg/dL), A1C, urine albumin/creatinine, CBC

Task 2: How does your practice compare to local and national benchmarks? Enter your practice's data into the appropriate cells and review the information in the table below to see how you compare.

TABLE 2: NATIONAL QUALITY FORUM (NQF) MEASURE #18

Organization	Metric	Age			
		18–85	18–39	40–59	60 plus
National Health & Nutrition Examination Survey (NHANES) 2011 – 2014[2]	Controlled hypertension = SBP <140 mm Hg and DBP <90 mm Hg among persons with hypertension	53%	37.4%	57.2%	52.5%
Federally Qualified Health Centers in VT, 2015[3]	Hypertensive Patients with Blood Pressure < 140/90	65% (mean of 11 FQHCs)	N/A	N/A	N/A
OneCare VT 2015[4]	Controlled hypertension = BP <140/90 in patients with hypertension diagnosed aged 18-85	69.9% (N=13,562)	85%	70.9%	68.8%
Blueprint for Health Practice Profile database 2014-2015[5]	Controlled hypertension = SBP <140 mm Hg and DBP <90 mm Hg among persons with hypertension	71% (N=29,630)	N/A	N/A	N/A
Your Practice Data Here	Controlled hypertension = SBP <140 mm Hg and DBP <90 mm Hg among persons with HYPERTENSION				

Table 3 below shows the Merit-Based Incentive Payment System (MIPS) benchmark results being used in the Quality Payment Program to determine payment incentives for performance year 2017. The national benchmarks are based on actual performance data submitted via a registry to PQRS in 2015.

TABLE 3: BENCHMARK DECILES FOR MIPS PERFORMANCE YEAR 2017

Decile	3	4	5	6	7	8	9	10
NQF 18 Hypertension (HTN): Controlling Blood Pressure[6]	59.10 – 61.02	61.03 – 63.26	63.27 – 64.74	64.75 – 67.04	67.05 – 68.86	68.87 – 71.92	71.93 – 75.11	> = 75.12

Task 3: Identify your shared objective. Evaluating what others achieved provides appropriate context for choosing the numerical portion of an organization's aim. While the goal of 100 percent of hypertensive patients achieving a blood pressure of less than 140/90 is optimal, an organization can set an appropriate and realistic goal based on the data provided in the tables above, after consideration of a number of factors, including progress to date with the indicator and funding agency expectations. The numerical part of the aim should be obtainable, yet high enough to challenge the team to substantially and meaningfully improve.

Task 4: Now that the practice has baseline data and a shared objective, add this information to the Background Section of the A3.

Notes:

- Use the Million Hearts Estimator tool: https://nccd.cdc.gov/MillionHearts/Estimator/
- Quality and Resource Use Reports (QRUR) provides national bench-marking data for Medicare patients: https://www.cms.gov/medicare/medicare-fee-for-service-payment/physicianfeedbackprogram/obtain-2013-qrur.html

Step 1.3 References:

1. http://www.qualityforum.org/QPS/QPSTool.aspx
2. https://www.cdc.gov/nchs/data/databriefs/db220.htm
3. https://www.cdc.gov/nchs/products/databriefs/db278.htm
4. OneCare Vermont Annual Quality Measure Collection Result 2015
5. Blueprint statewide Profile Accountable Care Organization Measures Detail, July 2014 - June 2015.
6. https://qpp.cms.gov/resources/education

Step 1.4
Build the team

Time: One hour

The people you choose for your team should embody the first two elements and the third should be supported by leadership. The practice may have a pre-existing team that focuses on quality improvement, in which case, confirm that this is the right mix of people to address hypertension management. Identify three to seven people who will be on your QI team for this project. You may not fill every position, depending on the nature of your hypertension project.

There are three essential elements of a team that increase the likelihood of a successful change project.

- Commitment of both practice leadership and staff
- A culture that views quality improvement as a way to provide better care to their patients, not just another revenue stream for the practice or a bothersome bureaucratic burden
- Resources which may introduce some upfront costs, but will pay off in the end

Task 1: Complete the Team Member Template (Appendix D). Now that the practice has baseline data, add this information to the Team Section of the A3.

Step 1.5
Schedule effective meetings

Now that you've identified your team members, schedule effective team meetings by adhering to these four tasks:

Task 1: Create a schedule of team meetings for ten hours of team work with each meeting being at least one hour in length and no more than one week apart.

Task 2: Rotate meeting roles.

Task 3: Solve problems as a group.

Task 4: Record action steps, owners and due dates. Refer to the Sample Agendas for Team Meetings (Appendix E) that can be modified as needed. Now that the practice has chosen the core team members, add this information to the Team Section of the A3.

STAGE 2: DESIGN

The project team reviews the current issues facing the practice regarding hypertension management and selects specific strategies that will be used by the practice as a whole. Each of the steps for the team is described, with examples where appropriate.

Estimated time to complete:
7-9 hours of team meeting time

The seven steps in this stage are listed below, with more detail on following pages.

Steps:

- 2.1 Team start up and review of A3
- 2.2 Analyze work flow
- 2.3 Identify contributing factors
- 2.4 Review and select strategies
- 2.5 Design new work flow
- 2.6 Draft implementation plan
- 2.7 Check in with practice leaders

Step 2.1
Team start up

Time: One hour

Convene the team and complete the following tasks:

Task 1: Review the project objective

Task 2: Review and refine the A3 Template (Appendix B).

Task 3: Review the results of the Practice Readiness Assessment (Appendix A).

Task 4: Discuss any questions or issues that arise.

Task 5: Agree on when and how the project team should communicate progress or challenges with the practice leaders.

Task 6: Practice leaders turn the team over to the team leader.

Step 2.2
Analyze the workflow

Time: One hour

A process map is used in analyzing, designing, documenting, or managing a process or program and will allow the team to better understand how blood pressure is measured and treated in the practice. A process map provides a close-up view of the steps of a process using simple symbols. It can clarify complex processes and identify steps that do not add value to the practice or patient, including delays, equipment problems, unnecessary work, duplication, added expense, and breakdowns in communication.

Remember that most problems are a result of poor process, not bad people, so be careful to not assign blame.

To create your workflow, use the AMA Process Map Toolkit (Appendix F) from the American Medical Association. Pay particular attention to the symbols and what each represents. Refer to the following example workflow.

Task 1: Describe the current process for caring for a patient with hypertension. Make a list of each step in the process grouping together all tasks done by one job function (receptionist, medical assistant, nurse, provider, etc.). Describe clearly the tasks involved in each process step, including what happens with the patient's information, so everyone shares a complete understanding.

Include all actions that are completed with your EHR related to documenting, reviewing, notifying, performing ordering or creating.

See the process from the patient's perspective and map the step-by-step activities to visually represent the path taken by a typical patient and the care team, from arrival at the office or telephone call to medication choices, referrals, and follow-up care. Be sure to include any steps that are outside of the visit, including calls to the patient.

The resulting diagram will assist the team in visualizing the order of patient flow and perhaps also in discovering flaws, bottlenecks, or gaps in care.

Task 2: Now go back to each process step in the workflow, and estimate the percentage of time that the person doing each process has all the resources and information needed at the start of that process, completely and accurately. It answers the question, "If 100 people came through the office for a HTN follow up visit in one day, for how many is their information complete and accurate so the healthcare team can be present at every step? Label this "% Complete & Accurate" (%CA) and enter it under each step.

To calculate the total, multiply all %CA into one product. This product is the approximate measure of the practice's effectiveness in providing all the patient care resources needed to complete this particular care process accurately.

Task 3: Once you have completed the workflow template, take a step back and observe each step. Have each team member answer the questions below.

1. What is working well in this process that we want to preserve?
2. Does the step create value for the patient or are some parts of it wasteful of time and energy?
3. Does the step produce good results every time or does it sometimes fail?
4. Are all resources and information available whenever it is needed to do the work or is it sometimes unavailable, broken or delayed?
5. Is the step immediately completed in the flow of work or does it result in a bottleneck?
6. Can it adapt easily to fluctuations or is it inflexible?

Identify the opportunities for improvement and write them on the flow chart. Record this on the A3 template.

Step 2.3
Identify contributing factors

Time: One hour

Through the analysis of the workflow in the previous step, the team members have identified problems in the way the patient care process currently works. The team brainstorms general or specific reasons for those problems. Cause and effect diagrams, sometimes called fishbone diagrams, can help in brainstorming to identify possible causes of a problem and in sorting ideas into useful categories. The problem or effect is displayed at the head or mouth of the fish. Possible contributing causes are listed on the smaller bones under various cause categories.

Be sure to include each step that has a less than 90% Complete and Accurate (CA) and brainstorm reasons why this is the case.

Complete the Cause and Effect Diagram (Appendix G).

Once you have completed the Cause and Effect diagram ask each team member to identify the top three to five root causes of the identified problem.

Compare the top three to five root causes with the strategies in the table and identify the strategy that will resolve the problem/s and that the practice will try first. Alternatively, identify a strategy that is not listed in the table, but that the practice has identified, that would solve the problem.

Step 2.4
Review and select strategies

Time: One hour, not including implementation.

Review and select strategies based on importance to the practice, simplicity, and problem resolution. These strategies are optional and independent of each other. Select at least one. Team members review the following list of strategies, described in more detail on the following pages.

The table on the following pages summarizes ten strategies in the toolkit.

They are categorized into four domains, adapted from www.ihi.org/resources/Pages/Changes/ChangestoImproveChronicCare.aspx.

The four domains are:

- **Decision Support -** Treatment decisions should be based on explicit, proven guidelines that are supported by a defining study and the guidelines are integrated into the day-to-day practice in an accessible and easy-to-use manner.
- **Clinical Information System -** A registry that can track individual patients and populations of patients, is a necessity when managing chronic illness or preventive care. For the registry to be reliable, documentation needs to be standardized.
- **Delivery System Design -** Delivery of patient care requires determination of what care is needed, and a clarification of roles and tasks to ensure the patient receives the right care at the right time. The healthcare team must have centralized, current information about the patient's status, and make follow-up a part of their standard procedures.
- **Effective self-management -** Engaged patients who have a central role in determining their care fosters a sense of responsibility for their own health and well-being.

TABLE 4: STRATEGIES

Strategy	Description	Rationale	Domain
1. Use a consistent approach across practice and monitor adherence to the clinical practice guidelines.	Healthcare team members agree on clinical practice guidelines for hypertension management that all can support and implement.	Team buy-in is essential to developing a continuously improving system.	Decision Support
2. Use the electronic health record to create and maintain a registry. Use the registry to reach out to patients to provide continuity of care.	Hypertensive patients are entered onto a registry. A designated person is identified who is responsible for maintaining the registry.	Registry functionality is needed in order to produce population health summaries and identify patients who are at risk because of being out of range.	Clinical Information System
3. Implement a pre-visit planning process.	Healthcare team members develop a pre-visit planning process, document the workflow, and monitor adherence to the process.	Pre-visit planning is an important element to managing hypertensive patients in order to maximize the office visit with the healthcare team.	Delivery System Design
4. Document in a systematic and standardized method in the EHR.	Healthcare team members document in a systematic and standardized method in the EHR.	Provides information for quality patient care and quality initiatives. It ensures regulatory, coding and billing requirements are met.	Clinical Information System
5. Integrate clinical decision supports (CDS) for pre-visit planning, primary care hypertension visits, and continuity of care.	Healthcare team members are meaningfully using CDS.	Data is integrated with knowledge to improve targeted decisions during the workflow to improve efficiency and accuracy.	Clinical Information System

NOTE: Strategy 5 is more complex and may require a specialized skill set to implement without Information Technology support.

TABLE CONTINUED NEXT PAGE

TABLE 4: STRATEGIES

Strategy	Description	Rationale	Domain
6. Measure blood pressure accurately and consistently in the office.	Ensure that hypertension is accurately and consistently measured by all members of the healthcare team.	Consistent measurement is required for comparison across the team or across practices.	Delivery System Design
7. Identify specific resources for patient education and insert into the workflow.	Educate patients regarding self-management, lifestyle modification (including diet, exercise and sodium intake), and community resources.	Patient engagement improves outcomes.	Promote Self-Management
8. Encourage home blood pressure monitoring and incorporate into decision-making as appropriate.	Ensure that patients are knowledgeable about home monitoring and performing it as appropriate.	Patient engagement improves outcomes and allows for safe and efficient management between visits.	Promote Self-Management
9. Assess medication adherence.	Ensure that all patients are assessed for medication adherence periodically, or at each visit, if the patient has a history of non-adherence.	Medication adherence improves outcomes; medication reconciliation reduces errors.	Delivery System Design
10. Provide team-based care to support education, adherence, patient engagement, and to maximize self-management.	Develop clinical decision guidelines for referring to and providing care management among health care team members including, but not limited to; nurses, behavioral health clinicians, dieticians, health coaches, and panel managers.	Team-based care improves outcomes.	Decision Support

Strategy 1 Description

Use a consistent approach across practice and monitor adherence to the clinical practice guidelines. The recommendations are not fixed protocols that must be followed. For individual patients, the judgment of responsible clinicians remains paramount.

Clinicians and patients will develop individualized treatment plans, tailored to the specific needs and circumstances of the patient.

Strategy 1 Actions

Action 1: Review Million Hearts protocol, https://millionhearts.hhs.gov/files/hypertension-Protocol.pdf based on evidence-based guidelines and decide to use practice wide. The American Heart Association, American Stroke Association, Centers for Disease Control, and American College of Cardiologists recommend the targets established in JNC-7, not JNC8 guidelines for all ages.

Action 2: Gather clinical staff to make consensus decisions about:

- Specific medications to be prescribed for most patients with hypertension
- Medications to consider for patients with hypertension and certain medical conditions
- Starting dosages and dosage increases with each titration
- Time intervals for follow-up and titration

Action 3: Refer to the Strategies table below and review the domain on Promoting Self-Management for strategies on engaging patients in making lifestyle modifications. See Table 5: Lifestyle Modifications on the following page.

Action 4: Refer to the Million Hearts customizable template and accept the variables in red or modify them with other drug names, dosages, and titration. As needed, develop separate protocols for subpopulations with different treatment goals.

Action 5: Adopt the protocol across the practice or system and revise it over time to meet the needs of patients and staff.

Action 6: Measure success:

- Adherence to protocols.
- Clinician and staff satisfaction.
- Change in blood pressure.

TABLE 5: LIFESTYLE MODIFICATIONS

Modification	Recommendation	Approximate SBP** Reduction (Range)††
Weight reduction	Maintain normal body weight (body mass Index 185-24.9 kg/m[1])	5-20 mm Hg/10k
Adopt DASH††† eating plan	Consume a diet rich In fruits, vegetables, and lowfat dairy products with a reduced content of saturated and total fat	8-14 mm Hg
Dietary sodium reduction	Reduce dietary sodium intake to no more than 100 mmol per day (2.4 g sodium or 6 g sodium chloride)	2-8 mm Hg
Physical activity	Engage in regular aerobic physical activity such as brisk walking (at least 30 min per day, most days of the week which may be broken Into shorter time intervals such as 10 minutes each of moderate or vigorous effort)	4-9 mm Hg
Moderation of alcohol consumption	Limit consumption to no more than 2 drinks (e.g. 24 oz. beer, 10 oz. wine, or 3 oz.80-proof whiskey) per day in most men, and to no more than 1 drink per day in women and lighter weight persons	2-4 mm Hg

[1] https://www.nhlbi.nih.gov/files/docs/guidelines/jnc7full.pdf

** SBP -systolic blood pressure

†† The effects of implementing these modifications are dose and time dependent, and could be greater for some individuals

††† DASH -Dietary Approaches to Stop Hypertension

Strategy 1 References:

1. Million Hearts protocol: https://millionhearts.hhs.gov/files/hypertension-Protocol.pdf
2. JNC 7: https://www.nhlbi.nih.gov/files/docs/guidelines/jnc7full.pdf Full version of The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Also includes physician reference card, slide shows, and free patient education materials for download.
3. American Society of hypertension (ASH) list of guidelines: www.ash-us.org/About-hypertension/hypertension-Guidelines.aspx
4. Note on 2013 published report regarding taking a new approach on treating high blood pressure in people over 60. http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/American-Heart-Association-backs-current-BP-treatments_UCM_459129_Article.jsp#.WLbxJYeQyig

Strategy 2 Description

Create and maintain a registry. Patients with hypertension are entered into a registry or uniquely flagged for easy identification. Identify a designated person to be responsible for maintaining the registry.

Strategy 2 Actions

Action 1: See below for available registry. If unavailable, or you would like to create one from your EHR, go to Action 2.

For the member network of OneCare Vermont, a web-based software called Care Navigator is available and contains information on diagnoses, risk score, and utilization metrics for attributed patients in Medicare, Medicaid, and Blue Cross Blue Shield Exchange products. Care Navigator has the ability to identify attributed members with hypertension and to reflect associated interventions. For more information on how to access this system please email carenavhelp@onecarevt.org.

Action 2: Create or update a roster of patients with a diagnosis of hypertension through an electronic reporting system using the following criteria:

Patients 18 to 85 years of age with a diagnosis for hypertension including I10, I16.9, I15, I97.3 (ICD-10-CM).

AND

Patient encounter during performance period (CPT or HCPCS): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99341, 99342, 99343, 99345, 99347, 99348, 99349, 99350, G0402, G0438, G0439.

Query the past three years to capture patients who may not have had a visit in the last year.

Action 3: Print out the roster of patients organized by the practice as a whole and by prescriber.

- Review for patients who are missing and should be on the roster
- Review for patients who are present who should be removed

Action 4: Identify patients from this initial group whose blood pressure at the most recent visit is inadequately controlled (systolic blood pressure ≥ 140 mmHg and diastolic blood pressure ≥ 90 mmHg.)

Of this smaller sample of patients with a systolic blood pressure ≥ 140/90 mmHg, identify those patients who:

- have a history of medication non-adherence
- have missed or no-showed their last scheduled appointment
- are currently smoking cigarettes
- have frequent visits to the emergency department
- are not following up with referral or recommendation
- have not had a visit in six months or more
- have five or more unique active prescriptions
- have expired or unfilled prescriptions
- have a BMI of 25 or greater

Then, check further to identify those patients with a diagnosis of:

- diabetes mellitus type 2
- congestive heart failure
- renal failure

…in which case the threshold blood pressure is reduced to ≥ 129/79

Action 5: Use the roster to:

- Track patients who need follow up based on the practice's protocols for managing patients with hypertension (strategy 1)
- Implement strategies from this toolkit, such as (strategy 10) provide team-based care to support education, adherence, patient engagement, and to maximize self-management.

Action 6: Assign a person or team to be responsible for updating and maintaining the registry on a monthly basis.

Action 7: Measure success:

- Number of patients on roster not seen in past ___ months.
- Number of patients on roster not contacted in past ____ months.
- Clinician and staff satisfaction.

Strategy 3 Description

Implement a pre-visit planning process.

Pre-visit planning is an important element in managing hypertensive patients and includes scheduling patients for future appointments at the conclusion of each visit, arranging for pre-visit lab testing, gathering the necessary information for upcoming visits and spending a few minutes to huddle and handoff patients. Pre-visit planning can mean the difference between a clinic where the healthcare team is floundering and frustrated, and a clinic that runs smoothly with the capacity to handle any unanticipated issues that arise.

The actions outlined below can be implemented in their entirety or independently.

Strategy 3 Actions

Action 1: Re-appoint the patient at the conclusion of the visit. Follow the Million Hearts protocol for suggested time interval. https://millionhearts.hhs.gov/files/hypertension-protocol.pdf. At the conclusion of each visit, schedule patients for their next visit and any needed pre-visit labs. This saves time and reduces the number of staff touches in setting up planned care appointments.

If your practice doesn't have the capacity to hold future lab orders, employ a staff person to order lab tests according to Million Hearts protocol based on the patient's medications and condition a few days prior to the next appointment.

Action 2: Create and use a hypertension order set checklist.

The order set allows the clinician to indicate the interval until the next appointment and any associated labs required prior to that visit. It should be quick and convenient to use, requiring no more than a few seconds of clinician time. The order set checklist can be used by a medical assistant (MA) or clerk who can schedule the appointments and tests indicated by the clinician. See Hypertension Order Set Checklist (Appendix H) for a recommendation for tests to include in a hypertension order set checklist.

Action 3: Arrange for lab tests to be completed prior to next visit.

By performing lab tests before the visit the clinician and patient can discuss results and management decisions at the visit.

Arrange for the patient to come for lab testing a few days before the visit or develop a point-of-care testing for most tests so they can be performed the same day as the visit with the clinician. Have the test results available so clinicians and patients can discuss the results and make management decisions together during the face-to-face visit. Because the practice doesn't need to spend time contacting the patient with results after the visit, both the patient and the practice save time.

Action 4: Perform visit preparations.

Visit preparations can be done by the nurse or medical assistant (MA) the day before or just prior to the appointment. This will save time and reduce mistakes during the visit. Review the clinician's notes from the patient's last visit as well as notes from other clinicians who delivered interval care. If any care notes or results are not in the patient's record, the nurse or MA can call that office or department to obtain the information prior to the visit.

Print copies of lab test results to share with patients. If a patient portal is available, the nurse or MA can later refer patients to these results.

Action 5: For more complex patients, consider a pre-visit phone call or e-mail.

The nurse or MA makes a pre-visit phone call to more complex patients, performing tasks such as medication reconciliation and agenda setting on the phone, and then pre-populating the next day's visit note with this information.

If, during any interaction with a patient, a driver is identified, this is an opportunity to engage in patient-centered responses that may reduce barriers to hypertension control.

Action 6: Establish a daily team huddle.

A five to 15-minute pre-clinic huddle brings the team together to review and share knowledge about the day ahead. In addition to being alerted to last minute staffing or schedule changes, as well as any special needs of the patients or team, the care team can use this time to determine how best to share the work. It is also a time where the nurse or MA who performed visit prep can tell the clinician about an abnormal lab result or a complex multi-disciplinary situation, giving the clinician an opportunity to consult with colleagues or other resources prior to the patient's visit.

Action 7: Measure success:

- Number of patients with a hypertension diagnosis and without a follow-up visit appointment
- Adherence to order set
- Missing labs
- Use of daily huddles
- Clinician and staff satisfaction

Strategy 3 References:

1. Steps Forward: https://www.stepsforward.org/modules/pre-visit-planning
2. http://journals.sagepub.com/doi/abs/10.1177/1077558715573871
3. http://link.springer.com/article/10.1007%2Fs11606-016-3980-z

Strategy 4 Description

Document in a systematic and standardized method in the EHR.

The strategy steps recommended below are suggestions for documentation and coding for a patient with a diagnosis of hypertension for template development. A template is an EHR documentation tool utilized for the collection, presentation, and organization of clinical data elements. Templates add an advantage by reminding clinicians to ask patients specific questions to ensure the documentation is complete and accurate. After standardizing your documentation for this planned visit type, move on to visits that may include a comprehensive review of the patient's health or care for acute illness.

Physicians working with their care delivery organizations and within medical neighborhoods should define professional standards regarding clinical documentation practices throughout their organizations and hospital service areas.

Include Subject Matter Experts on the Team

Careful, thoughtful design and the ongoing review of EHR templates and prompts are essential to successful implementation of this strategy. A collaborative approach that includes health information management services (HIMS), clinical documentation improvement (CDI) and information technology (IT) representatives is recommended when implementing EHR changes.

If your team doesn't already include a representative from one of these roles, you may want to consider including one now. Additionally, the team is strongly encouraged to engage its EHR vendors as soon as possible to assist in planning and implementation. Refer to Vendor Engagement Strategies (Appendix I).

Strategy 4 Actions

Action 1: Make a list of information that needs to be accessed, created, or captured related to the hypertension visit. Refer to your new workflow and identify the information that is needed to provide the best possible care to the patient, every time.

Action 2: A suggestion for hypertension visit documentation[1] is on the following page. Compare the data elements currently being captured by the healthcare team with what is suggested below and revise, add, or remove data elements, if necessary.

TABLE 6: PATIENT DEMOGRAPHIC INFORMATION	
Subjective	• Chief Reason for Visit: Hypertension management • Presence/absence of acute problems • Pharmacological management of HTN › Adherence Assessment › Medication List
Objective	• Blood pressure and pulse
Assessment	• Problem List/Diagnosis: Hypertension, (HTN), High BP, Elevated BP, Borderline HTN, Intermittent HTN, History of HTN, Hypertensive vascular disease (HVD), Hyperpiesia, • ICD 10 Code: I10, I16.9, I15, I97.3 • Diabetes Diagnosis: • Smoking status: • Blood Pressure 1: At goal or not? • Blood Pressure 2: At goal or not? • Blood Pressure 3: At goal or not? • Home Blood Pressure Monitoring Readings: At goal or not? • Possible reasons why not at goal: › non-adherence, and reason for non-adherence › diet and exercise › smoking › white coat syndrome › other
Plan	• Medications: Change or no change? • Counseling: › Basics of hypertension › Adherence counseling › Patient teach-back • Self-Management Assistance: › Home BP monitoring kit › Pill box • Referrals › Nutrition › Self-Management Programs › Behavioral health/social work › Community Health Team › Nurse Care Manager › Financial counseling • Return visit
Encounter Code	• 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99341, 99342, 99343, 99345, 99347, 99348, 99349, 99350, G0402, G0438, G0439

Action 3: Review Workflow Background and Knowledge Area Primer (Appendix J).[3]

Action 4: Map the data elements using Data Element Capture Template (Appendix K), based on what is currently occurring. Identify the data elements that are not being documented consistently.

Action 5: Determine guidelines for completing the hypertension template, including how and where information should be documented. Write down the steps in narrative form and show visually in a workflow, using screen shots whenever possible. Get consensus from clinicians and team members responsible for documentation. Specificity is important.

Vendor Request

Ask your EHR vendor for a data workflow diagram to visually depict data flow.

Action 6: Identify a training plan for appropriate staff on what to put into the EHR.

Action 7: Measure success:

- Test the usability of the revised template
- Test the training of the revised template
- Consensus of users

Strategy 4 References:

1. https://millionhearts.hhs.gov/files/NYC_HHC_Hypertension_Protocol.pdf
2. http://library.ahima.org/doc?oid=107665#.WQIQ_LN0zcv
3. https://www.healthit.gov/sites/default/files/onc-beacon-lg3-ehr-data-quality-and-perform-impvt.pdf

Strategy 5 Description

Note that this strategy is more complex and may require a specialized skill set to implement without Information Technology support.

Integrate clinical decision supports (CDS) in the EHR for pre-visit planning, primary care hypertension visits, and continuity of care. CDS is not intended to replace clinician judgment, but rather is a tool to assist care team members in making timely, informed, higher quality decisions. The "Five Rights"[1] concept provides a best practice framework for considering CDS options appropriate for practice. The Five Rights concept states that we can achieve CDS-supported improvements in health outcomes if we communicate:

1. **the right information -** evidence-based guidance. (e.g., recommended dose ranges and drug interactions from the Million Hearts protocol for controlling hypertension in adults).
2. **to the right people** (entire care team – including the patient)
3. **through the right channels** (e.g., EHR, mobile device, patient portal)
4. **in the right intervention formats –** For example, an alert, order set, flow-sheet, or reference information to answer a clinical question.
5. **at the right points in workflow –** at a time of decision or action such as outside encounters, pre-visit, check-in, rooming, during exam, after exam, post-visit (e.g., at medication order entry, at medication verify/dispense, blood pressure measurement and recording, highlighting abnormal blood pressure readings in the EHR).

Strategy 5 Actions

Action 1: Identify your super user/s. The super user/s will function as the in-house expert/s on the EHR and works closely with the healthcare team. The super user/s configures the EHR software, creates templates and order sets, and also develops revised workflows or standard operating procedures to address issues raised by front-line users.

It is often helpful to have the super user be the main point of contact with the EHR vendor.

Action 2: Start simply: adopt one new CDS intervention in the EHR, rather than an entire CDS system. Review the CDS interventions below. Choose the one, or several, that are most simple to implement and/or that you believe will have the most significant impact. See CDS Intervention Rating Scale (Appendix L) to help your team prioritize the CDS interventions. This is not an exhaustive list, and they can be combined.

Knowledge resources and filtered reference information

- Use of the UpToDate® HL7 Infobutton to provide linked clinical decision support and patient information distribution. The Infobutton facilitates quick access to UpToDate tailored content based on your search query http://www.uptodate.com/home/ehr-interface
- Hypertension treatment templates based on evidence-based clinical guidelines, including treatment by stage of hypertension and risk stratification
- Suggestions and exclusions for medications based on concurrent medical conditions
- Reminder of the underlying causes of nonessential or secondary hypertension
- Indications for referral to a hypertensive specialist
- Hypertension management templates with questions about self-care, weight, physical activity level, blood pressure monitoring, and salt intake
- * Prepopulated hypertension order sets, including preferred medications (generics, 90-day supplies)
- Formularies are added to e-prescribing lists to help minimize patient out-of-pocket costs
- Blood pressure medication default to 90-day supply to decrease patient time spent obtaining refills
- Medication refill review tool, such as the Medicare Prescription Drug Improvement and Modernization Act (MMA), to assess adherence
- Prepopulated referrals for nutrition and/or behavioral health counseling
- Targeted highlighting of relevant data

* This intervention is included in Strategy 3.

Interruptive activities such as EHR alerts and reminders

- Reminder to order pertinent labs (creatinine, urine protein, etc.)
- Reminder to order home blood pressure monitor prescription
- Reminder to provide patient education materials on the DASH diet
- Reminder to use a visit summary for 'teach back' to make sure patient understands treatment plan including medications, follow-up appointments, lifestyle goals, etc.

Action 3: Reach out to your vendor/system designer to discuss how the identified CDS intervention/s may support the practice's hypertension control goal.[2]

Suggested questions for a conversation with your EHR vendor/designer:

- Within this cluster of interventions, which have been shown to have the most impact? Which are the easiest to turn on? Which are most likely to be accepted by end-users?
- How can we configure and customize CDS interventions to suit our practice needs and workflow?

- Can we select specific alerts and reminders, or are the rules preset packages of alerts that can only be turned on or off wholesale?
- Do we have the appropriate hardware and software to most effectively use CDS functionality?
- Are there already CDS "components" that we can use, such as logic, rules templates, screen designs, interfaces?

Action 4: Partner with your EHR vendor/system designer to configure the CDS intervention for greatest usability and positive impact.

Develop a CDS specification document for each adopted rule, with a detailed description of the CDS that includes all information explicitly spelled out, including algorithms used to produce data and mapping information. Your EHR vendor should develop this document for your practice.

Action 5: Measure success:

- Progress on plan to implement CDS intervention.
- Usefulness of implemented CDS intervention.
- Usability of implemented CDS intervention.
- Use of implemented CDS intervention.
- Satisfaction with implemented CDS intervention.

Strategy 5 References:

1. Osheroff JA, Teich JM, Levick D, Saldana L, Velasco FT, Sittig DF, Rogers KM, Jenders RA. Improving Outcomes with Clinical Decision Support: An Implementer's Guide. HIMSS press, 2012.

2. https://www.healthit.gov/policy-researchers-implementers/cds-implementation. https://www.healthit.gov/sites/default/files/3-4-3-successful-cds.pdf

   The Office of the National Coordinator for Health Information Technology (ONC) is at the forefront of the administration's health IT efforts and is a resource to the entire health system to support the adoption of health information technology and the promotion of nationwide health information exchange to improve health care. ONC is organizationally located within the Office of the Secretary for the U.S. Department of Health and Human Services (HHS). The position of National Coordinator was created in 2004, through an Executive Order, and legislatively mandated in the Health Information Technology for Economic and Clinical Health Act (HITECH Act) of 2009.

   Healthit.gov is the official website for the ONC: https://www.healthit.gov/providers-professionals/clinical-decision-support-cds

   HIMSS is a global, cause-based, not-for-profit organization focused on better health through information technology (IT). HIMSS leads efforts to optimize health engagements and care outcomes using information technology: http://www.himss.org/

Strategy 6 Description

Measure Blood Pressure accurately and consistently in the office.

Strategy 6 Actions

Action 1: These seven simple tips on the left side below help clinicians and staff obtain accurate blood pressure readings. They avoid the problems noted on the right side of Table 6.

TABLE 6: SOLUTIONS TO COMMON PROBLEMS ACCOUNTING FOR INACCURATE BLOOD PRESSURE READINGS

Do this	To avoid this
Empty bladder first	Full bladder adds 10 mm Hg
Don't have a conversation	Talking or active listening adds 10 mm Hg
Use correct cuff size	Cuff too small adds 2-10 mm Hg
Put cuff on bare arm	Cuff over clothing adds 5-50 mm Hg
Support arm at heart level	Unsupported are adds 10 mm Hg
Keep legs uncrossed	Crossed legs add 2-8 mm Hg
Support back and feet	Unsupported back and feet adds 6.5 mm Hg

See AMA Tips for Accurate Blood Pressure Reading (Appendix M) for tips for taking an accurate blood pressure in a one-page visual from the American Medical Association that is available for download and posting to educate and remind staff.

Action 2: Measure success:

- Satisfactory techniques in staff performance review

Strategy 6 References

1. Pickering, et al. Recommendations for blood pressure measurement in humans and experimental animals part 1: Blood Pressure Measurement in Humans. Circulation. 2005;111:697-716.

2. Handler, J. The importance of accurate blood pressure measurement. The Permanente Journal. Summer 2009. Volume 13. No.3-51.

Strategy 7 Description

Identify specific resources for patient education and insert into the workflow:

Examples of popular patient education resources are available at these links –

A simplified version of the DASH (Dietary Approaches to Stop Hypertension) diet, available at the Vermont Department of Health, has received national acclaim by Million Hearts partners because it has effectively translated the DASH diet for reduced literacy and has incorporated helpful related information in relatively few pages. The DASH eating plan for controlling blood pressure is also a good basic weight control eating plan for type 2 diabetes or prediabetes.

http://www.healthvermont.gov/sites/default/files/documents/2016/12/HPDP-Diabetes_dash%20eating%20plan.pdf

Additional information to help patients reduce dietary sodium is available at the CDC. Tips include how to reduce sodium while shopping in the supermarket and while eating out in restaurants. https://www.cdc.gov/salt/reduce_sodium_tips.htm

The authors of this toolkit assume that practices will have their "favorite" patient education resources. While the Learning Collaborative planned during the initial release of this toolkit is underway, authors will solicit practices' favorite patient education resources for addition to the toolkit.

Strategy 7 Actions

Use these tips for inserting patient education into the workflow.

Action 1: Identify all patient education resources by topic and inform office staff about location (hard copy versus electronic, down-loaded as handout versus electronic link provided to patient).

Action 2: Determine where (treatment room versus reception area), when (during or after visit) most patient resources will be distributed, and by whom (clinical or administrative staff). Note that patients are more likely to consider the detail in a resource when it is introduced interactively (by staff with patient) rather than referenced verbally without a "show and tell" approach.

Action 3: Use other techniques for effective patient engagement:

1. Developing and maintaining good relationships with patients involve face-to-face meetings during office visits and in between.
2. Face-to-face visits use evidence-based communication strategies such as motivational interviewing.
   a. Using open-ended questions: ask questions that require more than a "yes" or "no" answer and that help discover what the patient thinks is important.

Example – "What have been your goals and techniques for improving blood pressure control in the past?"

b. Reflective listening: repeating or rephrasing what a patient says, or asking for clarification to better understand a concern.

c. Positive reinforcement: encourage the healthy ideas or behaviors that patients mention.

d. Ask-tell-ask: elicit information that the patient knows, briefly fill in the gaps, and then ask for the patient's reaction to what you told them. Example – "What do you know about food and blood pressure"? If they answer about sodium restriction, tell them briefly about the DASH diet. Conclude with "Does this DASH diet information interest you?"

e. Teach-back: ask patients to tell you what they took away from the conversation and what they think the next steps should be.

With motivational interviewing clinicians use information from the patient to assist the patient in addressing ambiguities affecting self-management behaviors. The multiple self-management behaviors that impact blood pressure (diet, physical activity, managing stress, taking medication) offer providers many options to engage patients in behavior improvement that matches patients' readiness and interests.

Action 4: Measure success:

- Positive feedback from patients
- Evidence of patient self-management action plans
- Capturing select home BP readings in the EHR
- Clinician and staff satisfaction

Strategy 7 References

1. Patient-Centered Interactions. Engaging Patients in Health and Healthcare. Safety Net Medical Home Initiative. May 2013. http://www.safetynetmedicalhome.org/sites/default/files/Executive-Summary-Patient-Centered-Interactions.pdf

2. Engaging Patients through Evidence-based Communication Strategies. Target BP: http://targetbp.org/wp-content/uploads/2016/10/Communicating-with-Patients-Strategies-and-Skills-Fact-Sheet.pdf

Strategy 8 Description

Encourage home blood pressure monitoring and incorporate into decision making as appropriate.

Strategy 8 Actions

Recommended guidelines for encouraging and distributing home blood pressure (BP) monitors:

Action 1: Provide patient education using a trained health care provider (e.g. pharmacists, nurse practitioners, physician assistants, health educators) before recommending self-monitoring of home BP.

Action 2: Ask the patient about her/his comfort with using the monitor (as demonstrated at the clinical site) and willingness to adhere to recommended standards for obtaining an accurate measurement (seated, at rest, no caffeine, correct body position, placement of cuff, etc.).

Action 3: Confirm that the patient is able and willing to keep written records [see Blood Pressure Log Template (Appendix N) and a completed example in Sample Blood Pressure Log (Appendix O)] and regularly communicate with provider.

Action 4: Concurrently provide support for self-management skills with medication adjustments (type and/or dose).

Action 5: Ask if patient is able to take two or three successive readings (at one-minute intervals) at least twice a day, once in the morning and once in the evening.[1]

Action 6: Ask if patient is willing to participate in ongoing support live or telephonically.

Action 7: Consider the patients' adherence to their currently prescribed regimen.

Action 8: Consider patient characteristics that correspond with successful home BP monitoring - elderly, people with diabetes or chronic kidney disease, pregnant women, patients with suspected or confirmed white coat hypertension[2], and patients with suspected or confirmed masked hypertension (nonelevated BP in the clinic setting that is elevated when assessed by ambulatory monitoring.[3]

Action 9: Consider other characteristics that are contraindicated for home self-monitoring. Some patients may become obsessed about taking readings. The inherent variability of BP means that there will inevitably be some high readings, which in anxious patients may exacerbate their anxiety, leading to further increases of BP and effectively setting up a vicious cycle. In such patients frequent checking of their BP should be discouraged, and in extreme cases it should be discontinued altogether[2].

Action 10: Measure success:

- Evidence of home readings affecting treatment plan
- Patient, clinician and staff satisfaction with home BP monitors
- Capturing select home BP readings in the EHR

Strategy 8 References

1. https://millionhearts.hhs.gov/files/MH_SMBP_Clinicians.pdf

2. Pickering TG, Miller NH, Ogedegbe G, Krakoff LR, Artinian NT, Goff D. Call to action on use and reimbursement for home blood pressure monitoring: A Joint Scientific Statement from the American Heart Association, American Society of Hypertension, and Preventive Cardiovascular Nurses Association. Hypertension. 2008;52:10–29.

3. Wang YC, Shimbo D, Muntner P, Moran A, Krakoff L, Schwartz JE. Prevalence of masked hypertension among US adults with nonelevated clinic blood pressure. American Journal of Epidemiology. 2017;185(3):194-202.

Strategy 9 Description

Assess Medication Adherence. Approximately half of patients with hypertension do not adhere well to their prescribed anti-hypertensive therapy.[1] Medication adherence, which is critical for blood pressure control, is affected by multiple factors.

The following strategies increase adherence and consistency among patients taking medication to control hypertension:[2]

- Keep medication regimens simple (once or twice daily dosing)
- Encourage home self-monitoring of blood pressure
- Use patient portals or email to communicate with patients between visits
- Urge patients to use pill boxes or other methods to organize multiple medications for daily use
- Help patients implement a strategy to refill prescriptions before running out of medications
- Use a team-approach to support patient self-management
- Monitor the cost of medications and the patient's ability to pay for medications

The following factors are associated with non-adherence:[3]

- Limited language proficiency or low literacy
- History of mental health issues (depression, anxiety, addiction)
- Belief that medications are unnecessary or harmful, or disbelief in the treatment benefits
- Concerns about side effects
- Concerns about costs of medications
- Reports of being tired of taking medications

Medication reconciliation, which means comparing medication orders to the list of medications that a patient reports taking, is usually accomplished by primary care staff during the patient visit. This process helps reduce prescription errors and tracks factors impacting nonadherence such as skipped or reduced doses, lack of knowledge about how the medication works (also shown to reduce adherence), and the presence of bothersome side-effects.

The 4-question and 8-question versions of the Morisky Medication Adherence Scale (MMAS) have been used in a pilot by a primary care practice in Vermont to evaluate adherence to anti-hypertensive medications. Front desk staff distribute these questionnaires to hypertensive patients during non-acute appointments. Nurses review the completed MMAS with the patients, identify the causes of poor adherence, and select appropriate interventions. This has resulted in improved blood pressure control.

Many electronic health records may include patient assessments that are designed to measure non-adherence. For example a three item scale is built into the Epic based EHR to assess Commitment, Concern, and Cost.

- Commitment: I am convinced of the importance of my prescription medicine.
- Concern: I worry that my prescription medicine will do me more harm than good.
- Cost: feel financially burdened by my out-of-pocket expenses for my prescription medicine.

The anchors for this 6 point scale are from Agree Completely to Disagree Completely[4]. There is no one ideal patient reported measure of medication adherence according to a recent review[5]. Clinicians are encouraged to use whichever is most appropriate or easy to use in their own settings.

Licensing Information[6] – MMAS Research LLC is the body that provides diagnostic assessment solutions for using the validated Morisky Medication Adherence Scale™. For some uses, there is no fee – but depending on the intended use there may be costs per patient to use the MMAS. Costs are usually associated with publishing data. In addition, there are clinical data and care management programs that have incorporated the Morisky scale into their platforms. These programs include Care Coordinator and Population Health Logistics.

Measure success:

- Usability of medication adherence tool
- Identification of barriers to adherence and solutions
- Improved individual blood pressure control
- Select home BP readings noted in the EHR
- Patient satisfaction

Strategy 9 References

1. Kettani FZ, Dragomir A, Cote R, Roy L, Berard A, Blais, L, Lalonde L, Moreau P, Perreault S. Impact of a better adherence to antihypertensive agents on cerebrovascular disease for primary prevention. *Stroke*. 2009;40:213-220.

2. Hill, MN, Miller, NH et al. ASH position paper: adherence and persistence with taking medication to control high blood pressure. *J Clin Hypertension*. 2010;12:757-764.

3. Improving medication adherence among patients with hypertension, a tip sheet for professionals. Million Hearts: https://millionhearts.hhs.gov/files/TipSheet_HCP_MedAdherence.pdf

4. McHorney, C. A., Victor Spain, C., Alexander, C. M., & Simmons, J. (2009). Validity of the adherence estimator in the prediction of 9-month persistence with medications prescribed for chronic diseases: A prospective analysis of data from pharmacy claims. *Clinical Therapeutics*, 31(11), 2584-607. doi: http://dx.doi.org/10.1016/j.clinthera.2009.11.030

5. Nguyen, T.-M.-U., Caze, A. L., et al. (2014). "What are validated self-report adherence scales really measuring?: a systematic review." British Journal of Clinical Pharmacology 77(3): 427-445.

6. http://morisky.org/solution/MoriskyWidget

Strategy 10 Description

Provide team-based care to support education, adherence, patient engagement, and to maximize self-management. The multidisciplinary team consists of clinicians working within the primary care site as internal staff or in the local community.

The focus of Table 7 is individual patient care:

- **Drivers**
  Problems or situations associated with poor blood pressure control
- **Initial Clinical Approach/Response**
  What the clinician or staff would do initially at the time the problem/situation presents. The initial communication can come from medical office assistant, nurse or other staff in addition to physician, PA, NP, etc. Practice policies for documenting communication and patient response will vary based on team work flow and patient hand-offs before, during, and after the visit.
- **Community-Clinical Linkage**
  Evidence-based programs or other community-based services that are available.
- **Follow-up Action**
  The clinician's next steps after the initial approach

TABLE 7: INDIVIDUAL PATIENT CARE FOR BLOOD PRESSURE CONTROL	
Driver **High BP reading**	**Clinical Approach/Response** Consult Million Hearts protocol for clinical practice guidelines https://millionhearts.hhs.gov/files/Hypertension-Protocol.pdf
	Community-Clinical Linkage If patient has prediabetes refer to YMCA's Diabetes Prevention Program (evidence-based for BP reduction): http://myhealthyvt.org/diabetes-prevention/
	Follow-Up Action Re-check and review readings within one month or three months, depending on current BP.

TABLE CONTINUED NEXT PAGE

TABLE 7: INDIVIDUAL PATIENT CARE FOR BLOOD PRESSURE CONTROL	
Driver **History of medication non-adherence**	**Clinical Approach/Response** Clinician inquires, "Tell me about the reasons you are not taking your medication." Reasons may include; cost, confusion about dosing, forgetfulness, and/or low engagement in treatment plan.
	Community-Clinical Linkage Pharmacist or Behavioral health clinician may help.
	Follow-Up Action Cost? – Instruct patient to call Green Mountain Care: 1-800-250-8427 for prescription assistance information. Or call Partnership for Prescription Assistance 1-888-477-2669 or visit www.pparx.org to check eligibility for help. Confusion about dosing? – Provide explanation about dosing. Ask patient to invite support person to attend future appointment and assist in understanding medications. Forgetfulness? – Assess cognitive status, living arrangement, emotional status, e.g., assess depression (PHQ-2) Low engagement in treatment plan? See Strategy 7 tips for patient engagement (page 35). See Strategy 9 (page 39) for more information about assessing medication adherence.
Driver **Currently smoking cigarettes**	**Clinical Approach/Response** Clinician uses motivational interviewing (MI) to identify stage of change and tailors discussion accordingly.
	Community-Clinical Linkage Smoking cessation program. http://myhealthyvt.org/quitting-smoking/
	Follow-Up Action Referral to a behavioral health clinician within practice, community health team or wider community.
Driver **Not following up with referral or recommendation**	**Clinical Approach/Response** Clinician inquires as to the reasons the patient is not following up with referral or recommendation. Low engagement in treatment plan? Transportation, cost and/or insurance barriers? Forgetfulness? Respond accordingly.
	Community-Clinical Linkage Medicaid beneficiaries may receive transportation to select medical appointments.

TABLE CONTINUED NEXT PAGE

TABLE 7: INDIVIDUAL PATIENT CARE FOR BLOOD PRESSURE CONTROL	
Driver **Has not had a visit in six months or more**	**Clinical Approach/Response** Clinician reinforces the patient for coming in, asks about the reasons for the long interval between visits and emphasizes the importance of compliance with scheduled visits.
	Follow-Up Action Schedule future planned visit(s) and use phone reminders.
Driver **Has five or more unique active prescriptions**	**Clinical Approach/Response** Clinician reviews medications and Million Hearts protocol. Makes appropriate medication change recommendations to reduce total unique prescriptions. Engages in shared decision making with the patient taking into consideration any lifestyle preferences of the patient.
Driver **Has expired or unfilled prescriptions** (visible during home visit or during office visit when patient brings in prescription information and pill containers)	**Clinical Approach/Response** Clinician reviewing medications inquires, "I see you have unfilled prescriptions, tell me more about that?" Transportation, cost and/or insurance barriers? Forgetfulness? Low engagement in treatment plan? Respond accordingly.
	Community-Clinical Linkage Consider coaching patient to consolidate pharmacies and/or align multiple prescriptions for coordinated renewal.
	Follow-Up Action Medication reconciliation at follow-up office visit. See Strategy 9, Assess medication adherence (page 39).

TABLE CONTINUED NEXT PAGE

TABLE 7: INDIVIDUAL PATIENT CARE FOR BLOOD PRESSURE CONTROL	
Driver **Has a BMI of 25 or greater**	**Clinical Approach/Response** Clinician uses motivational interviewing to identify stage of change and tailors discussion to support self-management. Refer to Million Hearts Protocol for suggested lifestyle (diet and exercise) changes: Consider a referral to a behavioral health clinician and/or a dietitian.
	Community-Clinical Linkage Consider WeightWatchers, Curves, Curves Complete, and the YMCA's Diabetes Prevention Program (latter if the patient has prediabetes).
	Follow-Up Action If patient participates in YMCA's Diabetes Prevention Program check back with patient about their food and physical activity records and progress during this year-long program.
Driver **Has a diagnosis of type 2 diabetes**	**Clinical Approach/Response** Refer to Million Hearts protocol https://millionhearts.hhs.gov/files/Hypertension-Protocol.pdf Ask patient if s/he is interested in learning more about managing diabetes. If yes, reinforce e.g., "you must really care about your health to be willing to join a self-management program."
	Community-Clinical Linkage Refer to Healthier Living Workshop-Diabetes http://myhealthyvt.org/diabetes-management/ Depending upon self-tailored action plans patient may select behaviors that improve diabetes and blood pressure management.
	Follow-Up Action Check back with patient about their action plans, and progress during and after the six-week diabetes program
Driver **Has a diagnosis of congestive heart failure (CHF)**	**Clinical Approach/Response** Clinician refers to Million Hearts protocol.
	Community-Clinical Linkage Refer to Healthier Living Workshop – Chronic Disease http://myhealthyvt.org/chronic-disease/ Also check with the VT Assembly of Home Health Agencies about CHF-related programs.
	Follow-Up Action Check back with patients about their accomplishments and satisfaction with participation in community-based programs. Check with local hospital service area about programs and services for CHF.

TABLE CONTINUED NEXT PAGE

TABLE 7: INDIVIDUAL PATIENT CARE FOR BLOOD PRESSURE CONTROL	
Driver **Has resistant hypertension***	**Clinical Approach/Response** Consider underlying causes such as dietary or medication non-adherence, unidentified secondary cause (including NSAID or other competing medication use, Obstructive Sleep Apnea, renal artery stenosis and others), white coat HTN, or a sub-optimal HTN regimen. Experts recommend optimizing volume, and consideration of aldosterone blockade with spironolactone
	Community-Clinical Linkage Refer to CHT for optimization of non-pharmacologic strategies.
	Follow-Up Action Consider a consult with or referral to Medical Center (UVMMC) or Dartmouth Hitchcock Medical Center (DHMC) Nephrology Services. Providers can contact a nephrologist centrally at UVMMC by calling Provider Access Services: 1-800-639-2480 and ask for the nephrologist on call, or a patient's specific nephrologist. See locations below for UVMMC-affiliated Nephrology Clinics. DHMC Nephrology Services are decentralized with nephrologists available at the numbers below for consultation or referral.

* Resistant HTN is defined as BP that remains above goal despite use of three meds of different classes, one of which is a diuretic. Resistant HTN is associated with higher rates of adverse CVD events.

TABLE 8: CONSULTATION WITH AND REFERRAL TO NEPHROLOGISTS		
Dartmouth Hitchcock Medical Center	**NH Town/City**	**Phone Number**
	Keene	603 354-6622 option 3
	Lebanon	603 653-3830
	Manchester	603 695-2640
	Nashua	603 695-2640
University of Vermont Medical Center	**VT Town/City**	**Phone Number**
	Burlington	802 847-3572
	Berlin (CVMC)	802 847-3572
	Milton Family Practice	802 847-3572
	Newport (NCH)	802 847-3572
	Rutland (RRMC)	802 747-6292

Measure success:

- Patient, clinician and staff satisfaction
- Documented referrals to community-based programs and services

Step 2.5
Design the new workflow

Time: One hour

Based on the strategies selected and developed in Step 2.4, describe the future process of caring for a patient with hypertension, which represents the ideal care process. Then, complete the following steps, documenting the results on a white board/flipchart.

Task 1: Develop the new flow of work, including all the selected strategies. Identify a specific patient and briefly describe the patient as s/he is moving through the new process. Keep the patient in mind as you further develop the new workflow.

Task 2: List the process steps in chronological order. Group the process steps into functions with one role per function, and/or time frames. For example, functional groupings might include; check-in, rooming, physician encounter, and check-out. Time frames might include; during the current visit, before the next visit, and during the next visit.

Task 3: Write each functional step on a sticky note and assemble onto a white board/flip chart. Check for missing steps.

Task 4: Now, go back and identify any steps needed to make sure that complete and accurate information is available at each functional step. Think about how your EHR can support this objective.

Task 5: Refer to the AMA Process Map Toolkit (Appendix F), which you may have used to develop your current state workflow. Use the process map symbols and line connectors to further develop your new workflow.

Step 2.6
Draft Implementation Plan

Time: One hour

Using the new flow of work, list all the strategies selected in the left hand column of the team's implementation plan. Refer to Implementation Plan Template (Appendix P).

Task 1: For each strategy selected, identify:

- Any additional information needed to use the strategy
- Any resources needed (people, funds, space) to use the strategy
- Provider or staff training (e.g. use of assessments; telephone scripts)
- The measures used to identify successful implementation
- The actions necessary to put the strategy in place
- A plan to communicate what will happen to those affected by these changes

Task 2: List actions identified above next to each strategy in the Implementation Plan and complete with the name of the team member following up on this work and the date he/she will next update the team on progress.

Task 3: Review again the results of the Practice Survey at Baseline for action steps needed for successful implementation in your practice. Re-issue the Practice Survey and compare outcomes.

Task 4: Document progress for each strategy listed in the right hand column of the Implementation Plan. Add to this worksheet over time.

Step 2.7
Check in with practice leaders

Time: 30 minutes

The project team meets with the Practice Leaders and reviews, at a minimum, the results of Stage 2, steps 2.4, 2.5 and 2.6:

- Stage 2, Step 2.4: Review and select strategies: identify the strategies chosen for improving hypertension management
- Stage 2, Steps 2.5: Design the new flow of work: share the ideal patient care process including new tasks proposed for practice members.
- Stage 2, Step 2.6: Draft implementation plan: share the implementation plan, including information, resources, and training needed to put it into action.

STAGE 3: IMPLEMENT

Project team and other practice members review the team's work and collaborate in putting some or all of the selected strategies in place.

Time: Variable

The time necessary to complete this stage depends on the amount of work identified in the Implementation Plan worksheet, which can vary from one hour/strategy to two hours/strategy. (Changes involving Information Technology support may take longer depending on the software application.)

The two steps in this stage are listed below, with more detail on following pages.

Steps:

3.1 Implementation plan and measures

3.2 Evaluation and closure

Stage 3 References

1. Connie van Eeghen, Charles D. MacLean, Amanda G. Kennedy. Improving Opioid Prescribing: Sustainable Solutions for Vermont. Opioid Prescription Management Toolkit for Chronic Pain, Facilitator Manual. UVM and State Agricultural College. 2014.

Step 3.1
Implementation Plan and Measures

Task 1

Plan Updates: Team members meet separately or together to carry out the Implementation Plan. The team meets weekly to update the Implementation Plan Worksheet, as needed.

Task 2

Progress Measures: Team members measure the progress for each of the strategies selected, as determined in Stage 2, Step 5 and documented in the Implementation Plan.

Task 3

Practice Assessment Post-Project: Survey the entire practice using the same method with which the pre-projectsurvey was conducted. This may be the Practice Readiness Assessment (Appendix A) if you chose to use it.

- Use the same list of clinicians and staff for the previous survey.
- Distribute the survey, with instructions about the date it should be returned and where it should be sent.
- Average the responses for each statement.
- Compare these averages with those calculated for the same statements in the previous survey and review all comments. Decide if the practice has experienced a change and, if so, whether it is a change that represents a success or identifies new issues to be addressed.

Task 4

Chart Reviews: Create a template for future chart reviews based on the strategies selected. Suggested items to collect:

- Blood pressures documented in a captured field
- Number of times a patient with hypertension has a visit in a year
- Monitors based on strategies (for example, patient education provided, home blood pressure monitoring documented, medication adherence assessed, etc.)

Step 3.2
Evaluation and Closure

Task 1

Evaluation: The team determines whether the project has achieved the objective identified in its A3 or whether the team needs to change the implementation plan or any of the strategies selected. As needed, follow up with practice leaders. If complete, the team develops a recommendation for long term monitoring.

Task 2

Closing Report: When the team has determined that the project is sufficiently complete to bring it to a close, it reviews the results of its work with Practice Leaders and provides recommendations for long term monitoring. Team members organize and submit the notes taken during team meetings to document their progress, measures, outcomes, and recommendations.

Task 3

Long Term Monitoring: Practice leaders determine who in the practice should monitor hypertension management by identifying specific measures, an individual to organize data collection, frequency of data collection, and reporting expectations.

Task 4

Completion of Stage 3: Practice leaders confirm the team's work and results. Practice leaders take responsibility for long term monitoring. Everybody celebrates – finishing a project, regardless of size or number of changes, is an accomplishment.

PART 4

Pay for Performance Quality Programs

Leveraging a hypertension control improvement project into financial incentives in pay-for-performance quality programs

Merit-Based Incentive Payment System (MIPS)

MIPS eligible clinicians and groups can choose to report on NQF 18, controlling hypertension, which meets the requirement for a high priority measure. In MIPS, the higher the performance on a measure, the more points earned for that measure. Points get counted toward a final score, which is then assessed by the Center for Medicare to calculate a financial incentive on all Medicare Part B reimbursements in the payment year. The benchmark for NQF 18 is based on 2015 PQRS data.

For providers reporting using the claims method, a performance score of 93% or above will earn the full ten points for this measure.

For providers reporting using the EHR method, a performance score of 81% or above will earn the full ten points for this measure.

For providers reporting using the registry method, a performance score of 91% or above will earn the full ten points for this measure.

See https://qpp.cms.gov/measures/quality for more information about the Quality Payment Program (QPP). On the following page is a screenshot of the hypertension measure from the QPP website.

Controlling High Blood Pressure

ADD

Percentage of patients 18-85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled (<140/90mmHg) during the measurement period

Measure Number

- eMeasure ID: CMS165v5
- eMeasure NQF: N/A
- NQF: 0018
- Quality ID: 236

NQS Domain

Effective Clinical Care

Measure Type

Intermediate Outcome

High Priority Measure

Yes

Data Submission Method

- Claims
- CMS Web Interface
- EHR
- Registry

Specialty Measure Set

- Internal Medicine
- Cardiology
- Obstetrics/Gynecology
- Preventive Medicine
- Thoracic Surgery
- Vascular Surgery
- General Practice/Family Medicine

Primary Measure Steward

National Committee for Quality Assurance

FIGURE 4: HYPERTENSION MEASURE FROM QPP WEBSITE

Shared Savings Programs

Medicare

The OneCare Vermont (OCV) and Community Health Accountable Care (CHAC) provider networks are participating in the Medicare Shared Savings Program (MSSP) for the 2017 reporting year. ACO–28 corresponds with NQF 18, controlling hypertension. The higher the level of performance, the higher the corresponding number of quality points earned. Performance at or above the 90th percentile of the quality performance benchmark earns the maximum points available for the measure. Accountable Care Organizations may receive 4 additional points in a domain by demonstrating quality improvement. The total points earned for measures in each domain, including any quality improvement points, will be summed and divided by the total points available for that domain to produce a domain score of the percentage of points earned relative to points available. The percentage score for each domain will be averaged together to generate a final overall quality score for each ACO that will be used to determine the amount of savings it shares or, if applicable, the amount of losses it owes.

https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/MSSP-QM-Benchmarks-2016.pdf

Medicaid

The Department of Vermont Health Access (DVHA) and OCV have entered into a contract for the Vermont Medicaid Next Generation program for the 2017 calendar year. Controlling High Blood Pressure is one of ten, out of 12 payment measures specified in the contract. An ACO's performance is based on these payment measures which will impact the distribution of funds from a quality incentive pool established by the ACO under the terms of the contract. OCV can earn up to two points per payment measure (including Controlling High Blood Pressure) for the ACO's performance relative to national or multi-state benchmarks, up to a total of 20 points. Quality points are aggregated across measures to obtain the ACO's quality score. The quality score corresponds to the proportion of funds available for allocation to network providers – the share for the incentive pool in 2017 is 0.5%. Any portion of incentive pool funds not distributed to network providers based on their quality scores shall be reinvested into ongoing quality improvement initiatives using an approach mutually agreed upon by OCV and DVHA.

Commercial

Blue Cross Blue Shield of Vermont has entered into agreements for Commercial Shared Savings Programs in 2017 with OCV and CHAC. The State's understanding is that the Controlling High Blood Pressure measure is included in the payment measure set in both agreements, quality points are awarded by measure based on how the ACO performs relative to the national benchmark, and a quality score is determined by aggregating points for all payment measures. The aggregate quality score determines how much shared savings, if any, the ACO receives.

Blueprint Community Health Team (CHT) Payments and Patient-Centered Medical Home (PCMH) Payments

In Vermont, primary care providers and their practice can receive two Per Patient Per Month (PPPM) incentive payments: 1) to employ community health team (CHT) members; and 2) to implement continuous quality improvement related to the National Committee for Quality Assurance (NCQA) Patient Centered Medical Home (PCMH) standards.

The CHT payments are based on high performance on four quality measures. The 2017 quality measures are:

1. Adolescent Well-Care Visits
2. Developmental Screening in the First Three Years of Life

3. Diabetes Poor Control, HbA1c>9%
4. PQI 91 – Chronic Condition Composite

Starting in 2018, one of the four quality measures will be NQF 18, controlling hypertension. Practices who show relative improvement, performance in the top 50th percentile, or performance in the top 90th percentile receive points towards an increased PPPM.

The PCMH payments are based on NCQA PCMH recognition. The NCQA PCMH Standards supports implementing the key interventions identified in the hypertension management toolkit. Key strategies, such as implementing evidence-based guidelines, developing a hypertension panel, providing patient education, promoting self-management through tools and community resources, and measuring the percent of individuals with hypertension that have controlled blood pressure, are factors in the PCMH standards. The six NCQA PCMH standards are:

1. Enhance access and continuity
2. Team-based care
3. Population health management
4. Plan and manage care
5. Track and coordinate care
6. Measure and improve performance

Appendices

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Practice Readiness Assessment (Appendix A)

Practice	
Project	
Name (optional)	**Date**

Instructions: Circle one answer in response to each statement below, based on how you view your practice. The rating scale ranges from 1 (Strongly Disagree) to 5 (Strongly Agree).

	1 Strongly Agree	2	3	4	5 Strongly Disagree
Perceptions					
1. Our process for hypertension needs improvement.	○	○	○	○	○
2. Our primary care hypertension visit process either doesn't exist or needs improvement.	○	○	○	○	○
3. Our pre-visit planning process either doesn't exist or needs improvement.	○	○	○	○	○
4. Our process for maintaining continuity of care with uncontrolled hypertensive patients needs improvement.	○	○	○	○	○
Methods of Change					
5. The providers in our practice are willing to use a structured process to plan and change the way the practice manages hypertension.	○	○	○	○	○
6. The practice is able to support one-two clinicians and two staff in about 8-12 hours of team meetings together.	○	○	○	○	○
7. The practice has a provider leader who will share information with other providers and champion the results of the team's work.	○	○	○	○	○
Managing Change					
8. Our practice is currently able to avoid being distracted or overwhelmed by competing demands (such as other big projects) or financial concerns.	○	○	○	○	○
Motivation					
9. Providers are generally dissatisfied with the way hypertension care is managed in the practice.	○	○	○	○	○
10. I personally think that changing the way we manage hypertension care is the right thing to do in our practice now.	○	○	○	○	○

Issues/questions that should be addressed before starting on this project:

A3 Template (Appendix B)

Practice
Project
Date

Instructions: Use the following current/future state template and recording sheet. (Note: Both are formatted to an 11x17 page size).

CURRENT STATE

FUTURE STATE

CURRENT STATE

TITLE

TEAM; Stage 1 Step 1.4:

Team Members:

Meeting Dates/Times:

BACKGROUND; Stage 1, Step 1.3:

Ask: What do we already know about the issue?

List the answers, including the patient's perspective.

BACKGROUND/CURRENT STATE; Stage 2 Step 2.2:

Describe the current process for caring for a patient with hypertension. Make a list of each step in the process grouping together all tasks done by one job function (receptionist, medical assistant, nurse, provider, etc.). Describe clearly the tasks involved in each process step, including what happens with the patient's information, so everyone shares a complete understanding.

See the process from the patient's perspective and map the step-by-step activities to visually represent the path taken by a typical patient and the care team, from arrival at the office or telephone call to medication choices, referrals, and follow-up care. Be sure to include any steps that are outside of the visit, including calls to the patient.

The resulting diagram will assist the team in visualizing the order of patient flow and perhaps also in discovering flaws, bottlenecks, or gaps in care.

ANALYSIS OR DRIVERS; Stage 2 Step 2.3:

For each step or space with a long delay, ask:	**For each step missing, incomplete, or inaccurate data, or materials, ask:**
Why?	Why?
Why?	Why?
Why?	Why?
Why?	Why?
Why?	Why?

FUTURE STATE

COUNTERMEASURES/ STRATEGIES; Stage 2 Step 2.4:

For each delay or missing, incomplete, or inaccurate item, consider:	**Look at new strategies adopted in the literature or by exemplar practices:**
A standard method that everyone agrees to	Clinical strategies
Visually easy signals	Operational strategies
New roles for staff	Financial strategies
Updated reward and recognition systems	Select those that can be included in the new process at this time
Improved work place layout	

FUTURE STATE; Stage 2 Step 2.5:

Draw the steps horizontally.
Identify the new changes or strategies used in each step.
Identify practice-specific resources needed (e.g. changes to IT system)

IMPLEMENTATION PLAN; Stage 2 Step 2.6:

Test of Change	Start Date	Who	Scope	Due Date	Status	Measure of Success

SUSTAINABILITY PLAN/ ACT; Stage 3 Steps 3.1 and 3.w2:

What (Implementation Milestones)	Who (Name)	When (Due Date)
1.		
2.		
3.		

NQF 18 Measure Specification (Appendix C)

Measure #236 (NQF 0018): Controlling High Blood Pressure – National Quality Strategy Domain: Effective Clinical Care

2016 PQRS OPTIONS FOR INDIVIDUAL MEASURES:
CLAIMS, REGISTRY

DESCRIPTION:
Percentage of patients 18 through 85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled (< 140/90 mmHg) during the measurement period

INSTRUCTIONS:
This measure is to be reported a minimum of once per reporting period for patients with hypertension seen during the reporting period. The performance period for this measure is 12 months. The most recent quality code submitted will be used for performance calculation. This measure may be reported by clinicians who perform the quality actions described in the measure based on the services provided and the measure-specific denominator coding.

NOTE: *In reference to the numerator element, only blood pressure readings performed by a clinician in the provider office are acceptable for numerator compliance with this measure. Do not include blood pressure readings that meet the following criteria:*

- *Blood pressure readings from the patient's home (including readings directly from monitoring devices).*
- *Taken during an outpatient visit which was for the sole purpose of having a diagnostic test or surgical procedure performed (e.g., sigmoidoscopy, removal of a mole).*
- *Obtained the same day as a major diagnostic or surgical procedure (e.g., stress test, administration of IV contrast for a radiology procedure, endoscopy).*

If no blood pressure is recorded during the measurement period, the patient's blood pressure is assumed "not controlled".

Measure Reporting via Claims:
ICD-10-CM diagnosis codes, CPT or HCPCS code, and patient demographics are used to identify patients who are included in the measure's denominator. Quality-data codes are used to report the numerator of the measure.

When reporting the measure via claims, submit the listed ICD-10-CM diagnosis codes, CPT or HCPCS codes and the appropriate quality-data code. The reporting modifier allowed for this measure is: 8P- reason not otherwise specified. All measure-specific coding should be reported on the claim(s) representing the eligible encounter.

Measure Reporting via Registry:
ICD-10-CM diagnosis codes, CPT or HCPCS codes, and patient demographics are used to identify patients who are included in the measure's denominator. The listed numerator options are used to report the numerator of the measure.

The quality-data codes listed do not need to be submitted for registry-based submissions; however, these codes may be submitted for those registries that utilize claims data.

DENOMINATOR:
Patients 18 through 85 years of age who had a diagnosis of essential hypertension within the first six months of the measurement period or any time prior to the measurement period

Denominator Criteria (Eligible Cases):
Patients 18 through 85 years of age on date of encounter
AND

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Diagnosis for hypertension (ICD-10-CM): I10
AND
Patient encounter during reporting period (CPT or HCPCS): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350, G0402, G0438, G0439

NUMERATOR:
Patients whose blood pressure at the most recent visit is adequately controlled (systolic blood pressure < 140 mmHg and diastolic blood pressure < 90 mmHg) during the measurement period

Numerator Instructions: To describe both systolic and diastolic blood pressure values, **each must be reported separately**. If there are multiple blood pressures on the same date of service, use the lowest systolic and lowest diastolic blood pressure on that date as the representative blood pressure.

Numerator Quality-Data Coding Options for Reporting Satisfactorily:
Most Recent Blood Pressure Measurement Performed
Systolic pressure ***(Select one (1) code from this section):***
***Performance Met*: G8752:** Most recent systolic blood pressure < 140 mmHg

OR
***Performance Not Met*: G8753:** Most recent systolic blood pressure ≥ 140 mmHg

AND
Diastolic pressure (***Select one (1) code from this section*):**
***Performance Met*: G8754:** Most recent diastolic blood pressure < 90 mmHg

OR
***Performance Not Met*: G8755:** Most recent diastolic blood pressure ≥ 90 mmHg

OR
Patient not Eligible for Recommended Blood Pressure Parameters for Documented Reasons
***Other Performance Exclusion*: G9231:** Documentation of end stage renal disease (ESRD), dialysis, renal transplant or pregnancy.

OR
Blood Pressure Measurement not Documented, Reason not Given
***Performance Not Met*: G8756:** No documentation of blood pressure measurement, reason not given

RATIONALE:
Hypertension is a very significant health issue in the United States. Fifty million or more Americans have high blood pressure that warrants treatment, according to the National Health and Nutrition Examination Survey (NHANES) survey (Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure 2003). The United States Preventive Services Task Force (USPSTF) recommends that clinicians screen adults aged 18 and older for high blood pressure (United States Preventive Services Task Force 2007).

The most frequent and serious complications of uncontrolled hypertension include coronary heart disease, congestive heart failure, stroke, ruptured aortic aneurysm, renal disease, and retinopathy. The increased risks of hypertension are present in individuals ranging from 40 to 89 years of age. For every 20 mmHg systolic or 10 mmHg diastolic increase in blood pressure, there is a doubling of mortality from both ischemic heart disease and stroke (Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure 2003).

Better control of blood pressure has been shown to significantly reduce the probability that these undesirable and costly outcomes will occur. The relationship between the measure (control of hypertension) and the long-term clinical

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outcomes listed is well established. In clinical trials, antihypertensive therapy has been associated with reductions in stroke incidence (35-40 percent), myocardial infarction incidence (20-25 percent) and heart failure incidence (>50 percent) (Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure 2003).

CLINICAL RECOMMENDATION STATEMENTS:

The United States Preventive Services Task Force (2007) recommends screening for high blood pressure in adults age 18 years and older. This is a grade A recommendation.

Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (2003):

Treating systolic blood pressure and diastolic blood pressure to targets that are < 140/90 mmHg is associated with a decrease in cardiovascular disease complications.

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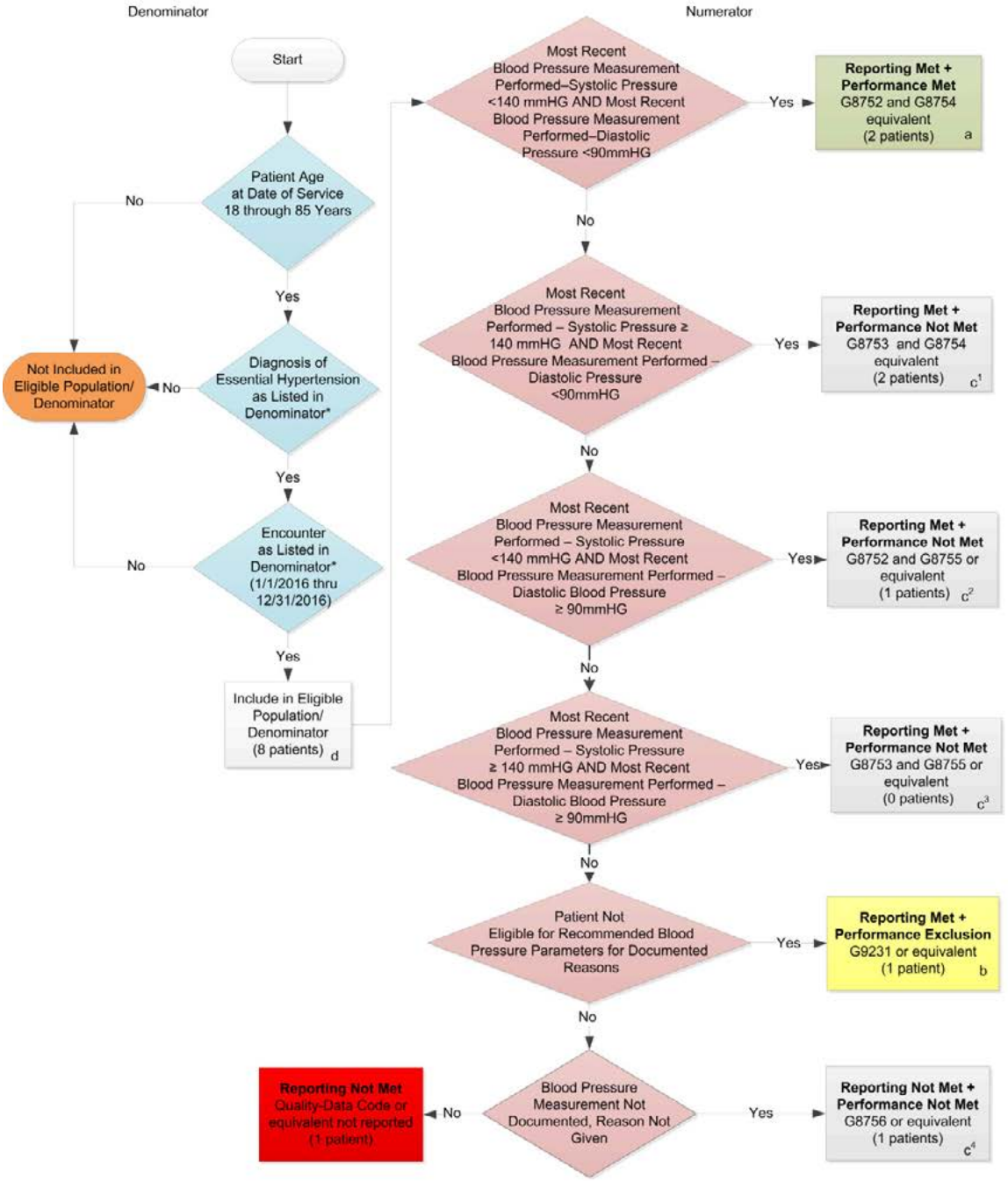
2016 Claims/Registry Individual Measure Flow
PQRS #236 NQF #0018: Controlling High Blood Pressure



SAMPLE CALCULATIONS:

Reporting Rate=

Performance Met (a =2 patients) + Performance Exclusion (b=1 patient) + Performance Not Met ($c^1+c^2+c^3+c^4$ =4 patients) = 7 patients / Eligible Population / Denominator (d=8 patients) = 8 patients = **87.50%**

Performance Rate=

Performance Met (a=2 patients) / Reporting Numerator (7 patients) - Performance Exclusion (b=1 patient) = 6 patients = 2 patients = **33.33%**

*See the posted Measure Specifications for specific coding and instructions to report this measure.
NOTE: Reporting Frequency: Patient-Intermediate

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v2

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2016 Claims/Registry Individual Measure Flow
PQRS #236 NQF #0018: Controlling High Blood Pressure

Please refer to the specific section of the Measure Specification to identify the denominator and numerator information for use in reporting this Individual Measure.

1. Start with Denominator
2. Check Patient Age:
   a. If the Age is equal to 18 thru 85 years of age on Date of Service equals No during the measurement period, do not include in Eligible Patient Population. Stop Processing.
   b. If the Age is equal to 18 thru 85 years of age on Date of Service equals Yes during the measurement period, proceed to check Patient Diagnosis.
3. Check Patient Diagnosis:
   a. If Diagnosis of Essential Hypertension as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
   b. If Diagnosis of Essential Hypertension as Listed in the Denominator equals Yes, proceed to check Encounter Performed.
4. Check Encounter Performed:
   a. If Encounter as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
   b. If Encounter as Listed in the Denominator equals Yes, include in the Eligible population.
5. Denominator Population:
   a. Denominator population is all Eligible Patients in the denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 8 patients in the sample calculation.
6. Start Numerator
7. Check Most Recent Blood Pressure Measurement Performed - Systolic Pressure <140 mmHG AND Most Recent Blood Pressure Measurement Performed -Diastolic Pressure <90 mmHG:
   a. If Most Recent Blood Pressure Measurement Performed - Systolic Pressure <140 mmHG AND Most Recent Blood Pressure Measurement Performed -Diastolic Pressure <90 mmHG equals Yes, include in Reporting Met and Performance Met.
   b. Reporting Met and Performance Met letter is represented in the Reporting Rate and Performance Rate in the Sample Calculation listed at the end of this document. Letter a1 equals 2 patients in Sample Calculation.
   c. If Most Recent Blood Pressure Measurement Performed - Systolic Pressure <140 mmHG AND Most Recent Blood Pressure Measurement Performed -Diastolic Pressure <90 mmHG equals No, proceed to Most Recent Blood Pressure Measurement Performed- Systolic Pressure ≥140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure <90 mmHG.

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8. Check Most Recent Blood Pressure Measurement Performed- Systolic Pressure ≥140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure <90 mmHG:

    a. If Most Recent Blood Pressure Measurement Performed- Systolic Pressure ≥140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure <90 mmHG equals Yes, include in Reporting Met and Performance Not Met.

    b. Reporting Met and Performance Not Met letter is represented in the Reporting Rate in the Sample Calculation listed at the end of this document. Letter c1 equals 2 patients in the Sample Calculation.

    c. If Most Recent Blood Pressure Measurement Performed- Systolic Pressure ≥140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure <90 mmHG equals No, proceed to Most Recent Blood Pressure Measurement Performed- Systolic Pressure <140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure ≥90 mmHG.

9. Check Most Recent Blood Pressure Measurement Performed- Systolic Pressure <140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure ≥90 mmHG:

    a. If Most Recent Blood Pressure Measurement Performed- Systolic Pressure <140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure ≥90 mmHG equals Yes, include in Reporting Met and Performance Not Met.

    b. Reporting Met and Performance Not Met letter is represented in the Reporting Rate in the Sample Calculation listed at the end of this document. Letter c2 equals 1 patient in the Sample Calculation.

    c. If Most Recent Blood Pressure Measurement Performed- Systolic Pressure <140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure ≥90 mmHG equals No, proceed to Most Recent Blood Pressure Measurement Performed- Systolic Pressure ≥140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure ≥90 mmHG.

10. Check Most Recent Blood Pressure Measurement Performed- Systolic Pressure ≥140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure ≥90 mmHG:

    a. If Most Recent Blood Pressure Measurement Performed- Systolic Pressure ≥140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure ≥90 mmHG equals Yes, include in Reporting Met and Performance Not Met.

    b. Reporting Met and Performance Not Met letter is represented in the Reporting Rate in the Sample Calculation listed at the end of this document. Letter c3 equals 0 patient in the Sample Calculation.

    c. If Most Recent Blood Pressure Measurement Performed- Systolic Pressure ≥140 mmHG AND Most Recent Blood Pressure Measurement Performed- Diastolic Pressure ≥90 mmHG equals No, proceed to Patient Not Eligible for Recommended Blood Pressure Parameters for Documented Reasons.

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11. Check Patient Not Eligible for Recommended Blood Pressure Parameters for Documented Reasons:

    a. If Patient Not Eligible for Recommended Blood Pressure Parameters for Documented Reasons equals Yes, include in the Reporting Met and Performance Exclusion.

    b. Reporting Met and Performance Exclusion letter is represented in the Reporting Rate and Performance Rate in the Sample Calculation listed at the end of this document. Letter b equals 1 patient in the Sample Calculation.

    c. If Patient Not Eligible for Recommended Blood Pressure Parameters for Documented Reasons equals No, proceed to Blood Pressure Measurement Not Documented, Reason Not Given.

12. Check Blood Pressure Measurement Not Documented, Reason Not Given:

    a. If Blood Pressure Measurement Not Documented, Reason Not Given equals Yes, include in the Reporting Met and Performance Not Met.

    b. Reporting Met and Performance Not Met letter is represented in the Reporting Rate in the Sample Calculation listed at the end of this document. Letter c4 equals 1 patient in the Sample Calculation.

    c. If Blood Pressure Measurement Not Documented, Reason Not Given equals No, proceed to Reporting Not Met.

13. Check Reporting Not Met

    a. If Reporting Not Met equals No, Quality Data Code or equivalent was not reported. 1 patient has been subtracted from the reporting numerator in the sample calculation.

SAMPLE CALCULATIONS:

Reporting Rate=

Performance Met (a =2 patients) + Performance Exclusion (b=1 patient) + Performance Not Met ($c^1+c^2+c^3+c^4$ =4 patients) = 7 patients / Eligible Population / Denominator (d=8 patients) = 8 patients = **87.50%**

Performance Rate=

Performance Met (a=2 patients) / Reporting Numerator (7 patients) - Performance Exclusion (b=1 patient) = 6 patients = 2 patients = **33.33%**

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Team Member Template (Appendix D)

Position	Responsibilities	Name of Person in the Practice Who Will Assume Role
Physician Champion *Examples: Medical Director, Physician*	Someone with authority to test and implement the change and to deal with issues that arise.	
Clinical Technical Expert *Examples: Physician, Nurse*	Someone who knows the subject intimately and who understands the processes of care.	
QI Technical Expert *Examples: Practice Facilitator or Health Care Consultant*	Someone with knowledge of improvement methods and can help the team determine what to measure, assist in design of simple, effective measurement tools, and provide guidance on collection, interpretation, and display of data.	
Day-to-Day Leadership *Examples: Physician, Nurse, Practice Manager*	This is the driver of the project, who assures tests are implemented and oversees data collection, understands not only the details of the system, but also the various effects of making change(s) in the system. Works effectively with the physician champion(s).	
Project Sponsor *Examples: Chief Medical Officer or Chief Operating Officer, Medical Director*	Someone with executive authority who can provide liaison with other areas of the organization, serve as a link to senior management and the strategic aims of the organization, provide resources and overcome barriers on behalf of the team, and provide accountability for the team members.	
Patient and/or Family Representative	Someone who is receiving treatment for hypertension and is willing to attend meetings when requested.	

Sample Agendas for Team Meetings (Appendix E)

Practice			
Participant Names			
Date		**Time**	

Hypertension Management QI Planning

SESSION 1 AGENDA

1. **Introduction (as needed)**
2. **Purpose of this Quality Improvement (QI) project**
   - Generally: hypertension management
3. **The QI process (how the project works)**
   - Who is involved
     - Practice members
     - Non-practice members
   - How long it will take
     - Sources of data, especially EHR
     - Survey for all providers and staff – email or paper surveys
4. **Background**
5. **Current State**
6. **Next steps**
   - Email addresses for practice members
   - Communication: Who needs to know what and when
   - Next meeting:

Practice	
Participant Names	
Date	**Time**

Hypertension Management QI Planning

SESSION 2 AGENDA

Topic	Leader	Time
1. Start Up		
• Re-introduction for new team members	Leader	5 min
• Questions since last meeting?	Facilitator	5 min
2. Review: Issue and Background Conversation with two patients from the practice who have been diagnosed with Hypertension. This is a learning and listening exercise, not a time for team talking. Questions that may be used to prompt patient conversation: • How long have you been coming to the practice? (ice breaker question) • We are trying to improve the way we manage hypertension. Is there anything we could do (could have done) to make the process easier for you? • Do you have any advice for us?	Facilitator	5 min
3. Current State and measures	Group	30 min
4. Problem Identification	Group	15 min
5. Plan for Next Meeting	Facilitator	5 min
6. Adjourn	Leader	

Practice	
Participant Names	
Date	**Time**

Hypertension Management QI Planning

SESSION 3 AGENDA

Topic	Leader	Time
1. Start Up	Leader	5 min
2. Review Current State and Measures	Group	5 min
3. Problem Identification	Group	15 min
4. Best Practice Strategies • Action Items: • Next Meeting:	Facilitator	20 min
5. Adjourn	Leader	

Practice	
Participant Names	
Date	**Time**

Hypertension Management QI Planning

SESSION 4 AGENDA

Topic	Leader	Time
1. Start Up	Leader	5 min
2. Review Problem Identification	Group	5 min
3. Discuss Best Practice Strategies	Group	30 min
4. Opportunities & Future State	Group	15 min
5. Plan for Next Step	Facilitator	5 min
6. Measures		
7. Next Meeting:		
8. Adourn		

Practice	
Participant Names	
Date	**Time**

Hypertension Management QI Planning

SESSION 5 AGENDA

Topic	Leader	Time
1. Start Up	Leader	5 min
2. Review Future State	Facilitator	5 min
3. Update Implementation Plan • How will you know if the plan is successful?	Group	30 min
4. Final Review of Strategies • Add to Implementation Plan • What If Scenarios	Facilitator	15 min
5. Next Steps • Future meetings • Plan for follow up survey	Facilitator	5 min
6. Adjourn	Leader	

Practice	
Participant Names	
Date	**Time**

Hypertension Management QI Planning

SESSION 6 AGENDA

Topic	Leader	Time
1. Start Up	Leader	5 min
2. Review and Complete Future State	Facilitator	15 min
3. Measures	Group	10 min
4. Implementation Plan	Group	10 min
5. Next Meeting:	Facilitator	
6. Adourn	Leader	

Practice	
Participant Names	
Date	**Time**

Hypertension Management QI Planning

SESSION 7 AGENDA

Topic	Leader	Time
1. Start Up	Leader	5 min
2. Review Future State	Facilitator	5 min
3. Update Implementation Plan • How will you know if the plan is successful?	Group	30 min
4. Final Review of Strategies • Add to Implementation Plan	Facilitator	15 min
5. Next Steps • Future meetings • Plan for follow up survey	Facilitator	
6. Adjourn	Leader	

Practice	
Participant Names	
Date	**Time**

Hypertension Management QI Planning

SESSION 8 AGENDA

Topic	Leader	Time
1. Start Up	Leader	5 min
2. Update Implementation Plan	Facilitator	20 min
3. Measures • Plan for follow up survey?	Group	10 min
4. Additional Issues • Add to Implementation Plan	Facilitator	20 min
5. Next Steps • Future meetings • Plan for follow up survey – when?	Facilitator	5 min
6. Adjourn	Leader	

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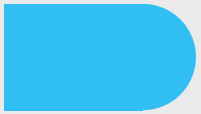
PROCESS MAP TOOLKIT

MOST COMMON PROCESS MAP SYMBOLS

Which symbols should you use? Most process maps can be created using a few basic flowchart symbols. Here are some common symbols and their meanings. To create your own map, copy and paste these symbols into a new slide.

Process represents a step or activity in your process.

Terminal points indicate the starting or ending points of a process.



Delay represents a waiting period where no value-added activity takes place.

Decision indicates a point where the outcome of a decision dictates the next step. There can be multiple outcomes, but often there are just two - yes and no.

Document represents a step that requires or results in a document.

Kaizen bursts indicate improvement opportunities.

Preparation indicates an action that helps prepare for the next step in the process.

Manual operation indicates an operation or adjustment to the process that can be made manually.

CONNECTORS

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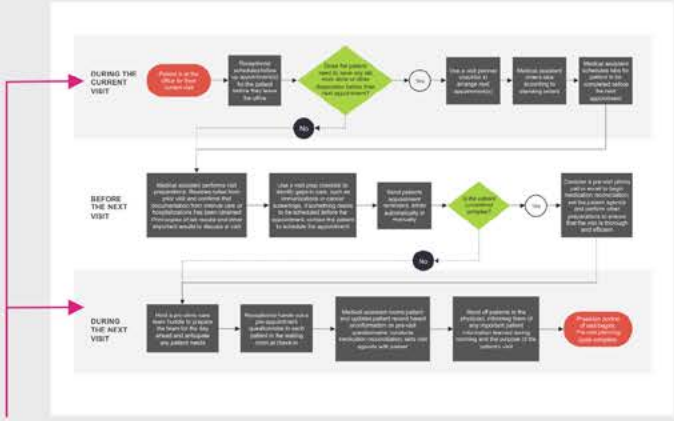
Connectors are lines that link different flowchart symbols. Once placed, connectors will stay connected to the symbols they are linked to. Move linked symbols and their connecters will automatically reorient with them.

Solid lines are used to connect the flowchart symbols.

Dotted lines indicate an alternate process.

Arrow on both ends indicates that the process flow can move in either direction between the two steps.

Arrow on one end indicates the direction of the process flow.



Swim lanes can be used to delineate roles and responsibilities within your practice. Lanes can be arranged horizontally or vertically. See EXAMPLE 2 for swim lane element.

PRE-VISIT PLANNING PROCESS EXAMPLE WITH SWIM LANES

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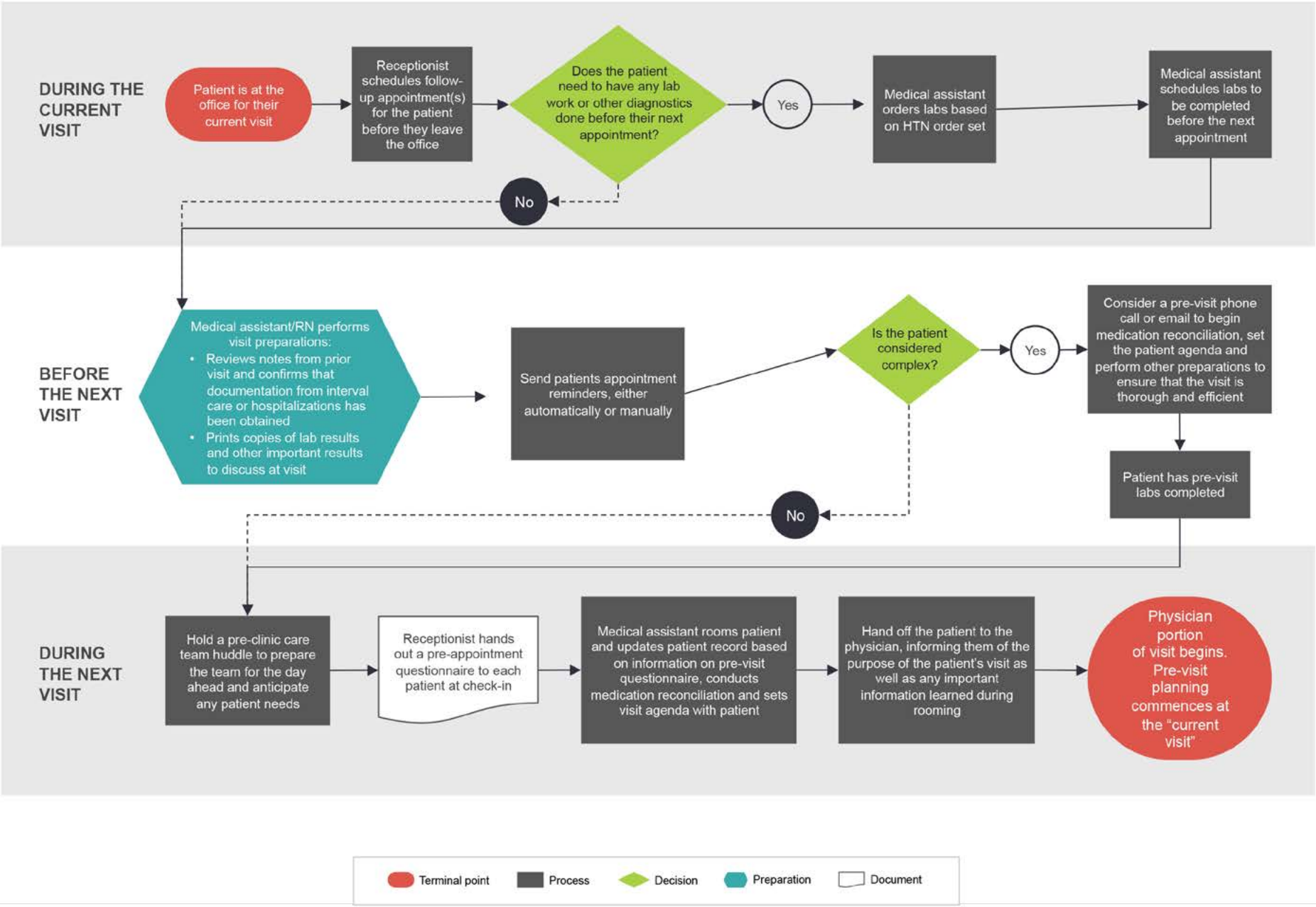

EXAMPLE 1: PATIENT WAIT TIME PROCESS FLOW

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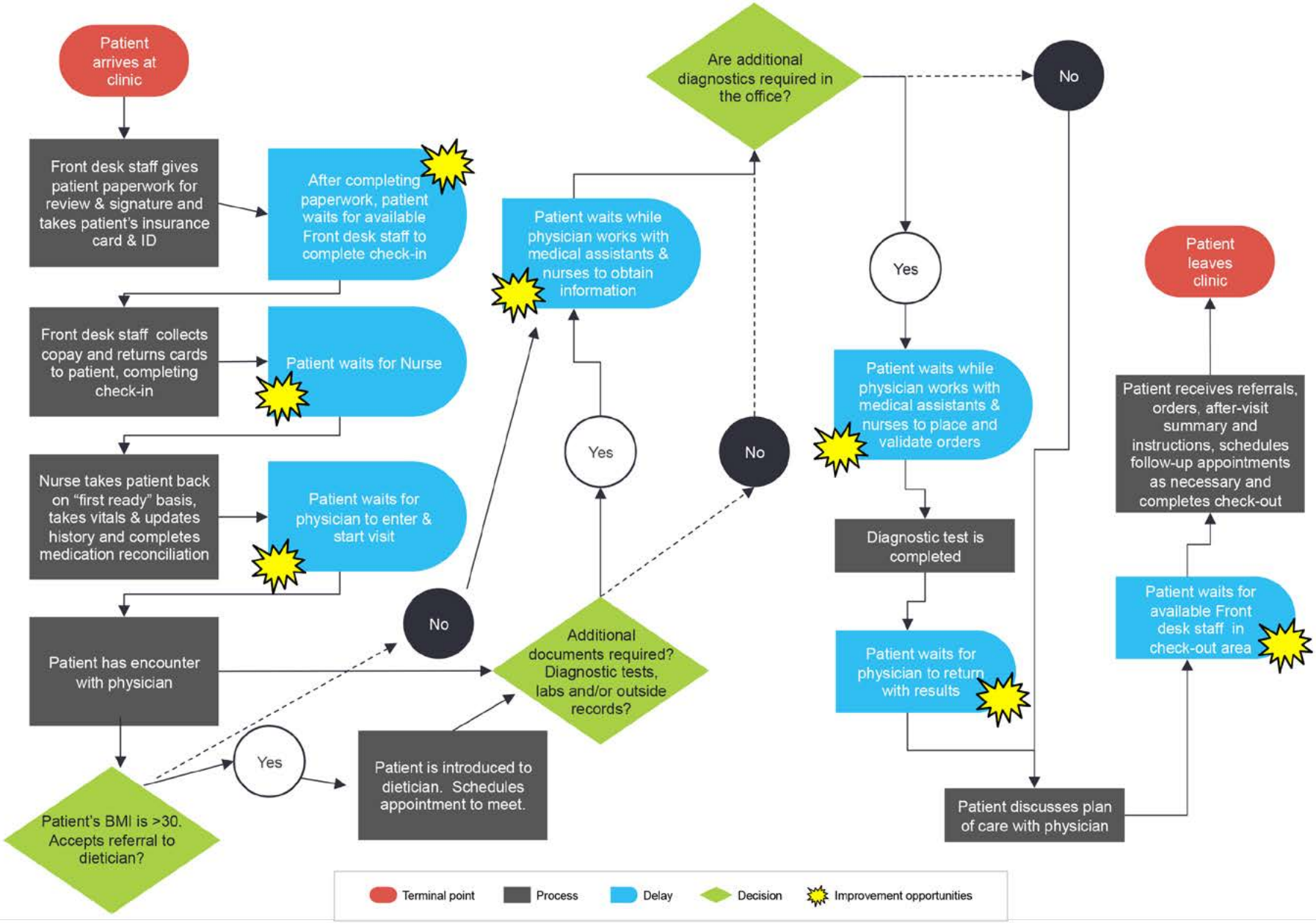


Cause and Effect Diagram (Appendix G)

Practice
Project
Date

Instructions: Consider drawing your fish on a flip chart or white board. Then, as a team, carry out the steps listed below. Make sure to leave enough space between the major categories on the diagram so you can add minor detailed causes later.

1. Agree on the problem statement (also referred to as the effect). This is written at the mouth of the fish. Be as clear and specific as you can about the problem. In this case, the problem is likely, *Insufficient Hypertension Control*.

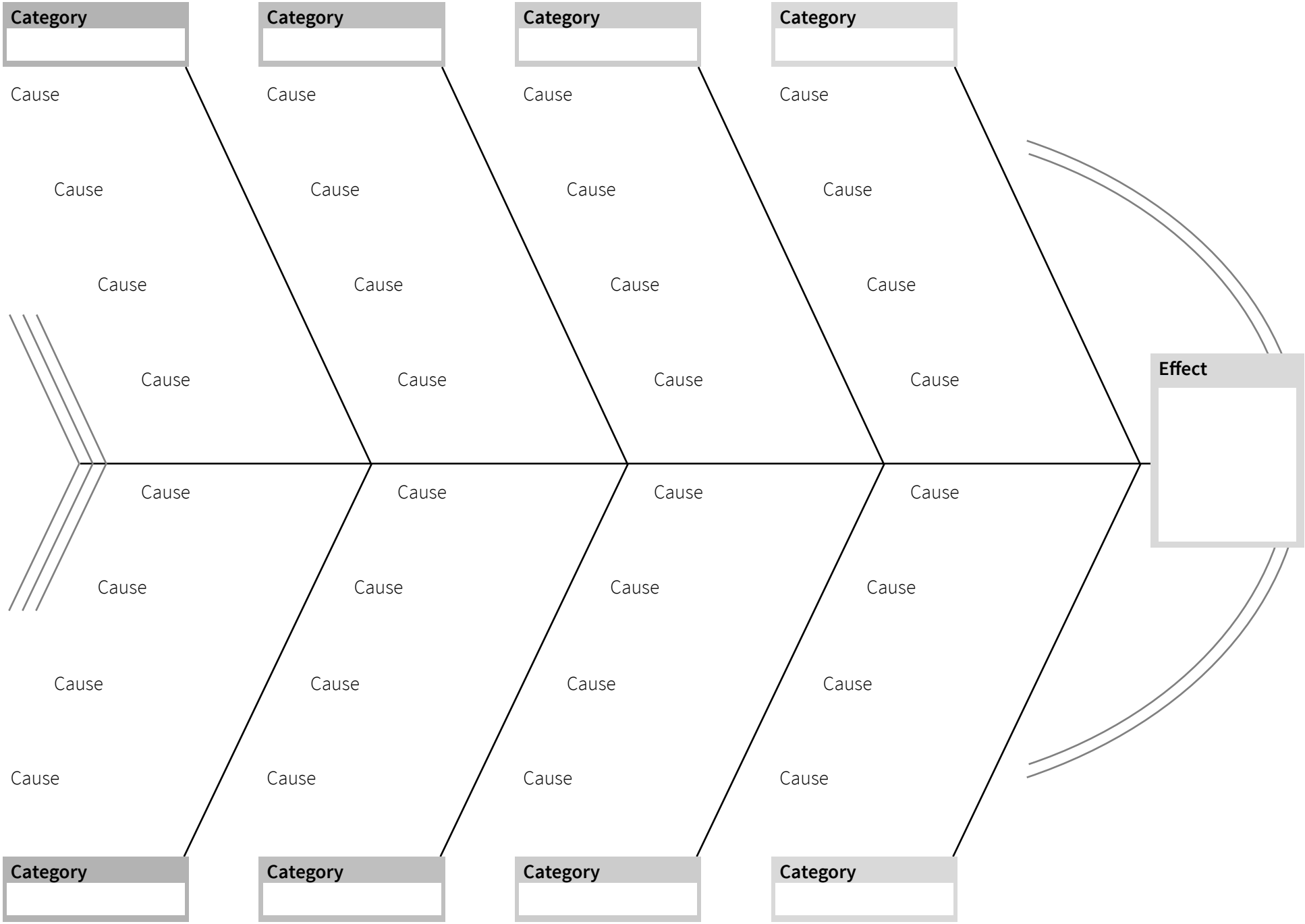
2. Agree on the major categories of influence (written as the bones of the main arrow). For the purpose of hypertension control, these arms might be labeled as *Treatment, Patient, Medical Staff, Documentation, Measurement, and Environment*.

3. Brainstorm all the possible causes of the problem. Ask "Why does this happen?" As each idea is given, the facilitator writes the causal factor as a branch from the appropriate category. In this case, causes may be *no one person to focus on HTN, high copays for medication, poor information flow between primary care and specialist, or inaccurate blood pressure measurement*.

4. Again ask, "why does this happen?" about each cause. Write sub-causes branching off the main cause branches

5. Continue to ask, "why?" and generate deeper levels of causes and continue organizing them under related causes or categories.

6. You might have team members write each cause on a sticky note, going around the room asking each person for one cause. Continue going through the rounds, getting more causes, until all ideas are exhausted.


Category
Category
Category
Category
Cause
Effect
Category
Category
Category
Category

Hypertension Order Set Checklist (Appendix H)

Patient Name	
Next Appointment Date	**Date of Last Annual Exam**

Test	Interval	Condition
Office Visit	6 months	If BP controlled to <140/90
Office Visit	1 month	If BP >140/90
Lipid Profile	1 year	
Basic Metabolic Profile	1 year	
Urine Alb/Creat. Ratio	1 year	Patients with no Hx of Abn UACR
Urine Alb/Creat. Ratio	6 months	If UACR was ever >30

Complete these labs on all my patients with hypertension whenever the Standing Orders are due.

_____

Signature

_____

Date

Use this template to create your own checklist if you find it needs to be modified to meet the needs of your practice. Update the checklist based on your patient population and current guidelines before implementing. Practices are encouraged to use this as a guide to streamline electronic order entry and order sets in their electronic health record.

Vendor Engagement Strategies (Appendix I)

Consult with EMR system designers and vendors about ways CDS might help to improve your clinical goals and related objectives.[1]

Finding the appropriate intervention(s) for a clinical goal can be challenging. For example, care of patients with diabetes normally entails managing a cluster of symptoms and physiological states. Improving care for these patients, then, may require focusing on a number of objectives including HbA1c testing, blood pressure monitoring, lipid management, patient education and behavior change, and so forth. Likewise, a cluster of CDS interventions may be needed to assist with each of these objectives, including various reminders and computer-based guidance for specific tests and procedures (e.g., foot/eye exams, HbA1c monitoring, blood pressure monitoring, LDL control, patient education). A conversation with your system designer or your vendor can help to gauge what is available to achieve a clinical goal, what clinical objectives might be most appropriate, and how CDS interventions correspond to both.

Important in this discussion is determining the ability to customize a given CDS intervention to support local needs of end-users. For example, a practice or specialty within may want to change the value of then an alert "triggers" an alert. When thinking about types of CDS interventions, certain types of functionality or capabilities may have to be in place for rules to gain the functionality required to meet clinical goals and objectives—for example linkage between the laboratory and pharmacy systems. This type of consideration should be discussed with your vendor, and system redesign or complex reprogramming should be avoided as much as possible.

Questions for a Conversation with Your Vendor/Designer
What types of CDS interventions (relevant data display, alerts, reminders, etc) are available within the EMR system to address our clinical goals and objectives?
Within this cluster of interventions, which have been shown to have the most impact? Which are the easiest to turn on? Which are most likely to be accepted by end-users?
How can we configure and customize CDS interventions to suit our practice needs and workflow? Can we select specific alerts and reminders, or are the rules preset packages of alerts that can only be turned on or off wholesale?
Do we have the appropriate hardware and software to most effectively use CDS functionality?
Are there already CDS "components" that we can use, such as logic, rules templates, screen designs, interfaces?

Appendix I Reference

1. Osheroff, Teich, Levick et al., 2012. Improving outcomes with CDS: an implementer's guide, Second Edition.

Workflow Background and Knowledge Area Primer (Appendix J)

Designation of Role-Based Access to Data

Role-based access to the data—sometimes referred to as create, read, update, and delete authority—must be defined, enforced, and built into system security functionality. Clear policies on the information access needed by a specific role or relationship to patient types must be developed. This is determined by the role and location of staff. Roles need to be identified and access provided based on the Health Insurance Portability and Accountability Act's (HIPAA) minimum necessary requirement, which states that staff should have access only to the information they need to do their job.

Creation of Data Dictionaries

A data dictionary exists for each information system, with standard data field definitions for each data element. These definitions should be clearly communicated to all staff accessing the record—especially those responsible for reporting EHR data. In addition, periodic validation of access must be in place. The data dictionary can also be built into system functionalities to ensure adherence on many levels. As an example, the distinction between ethnicity and race should be understood and consistently applied during the registration process. Selection options for these fields should be limited to choices that are in compliance with the data dictionary.

For all the systems that feed the EHR, clear policies, standards, procedures, and functionalities should be established to define who owns and has responsibility for maintaining and creating the data dictionary for each system and module. Having a single owner over the various dictionaries is helpful in reducing reporting errors. The consistent capture of key data is crucial.

Use of Standardized Formats To Ensure Consistency

A standardized format is used to ensure consistency. For example, to satisfy Meaningful Use requirements, the problem list is developed using the SNOMED format to record current, active, and past diagnoses. Format validation is another method to improve consistency. Data fields can be set to force users to enter dates as mm/dd/yyyy or assigned a reference range to warn users that certain values do not make sense for that field, such as a heart rate of 1000 beats per minute. In addition, the use of standardized templates, checklists, and online forms should be required to the greatest extent possible for provider and staff documentation. Many EHRs also allow configuration of a set of screens that walk the user through the most important documentation steps. These should be appropriate for the role and guide users to fill out the key data elements. This too can be built into the system's functionality but should be developed with the appropriate key stakeholders involved in the process.

Use of Structured Data

Use of structured data is important to enable the sharing and exchange of health information via HIEs with other organizations. For example, consider using structured fields for medication information such as route, dose, and frequency rather than entering this

information in a free-text instructions field. No matter what system body temperature or BP is entered into, the format is always the same and can be more easily shared across systems. If the information were entered as free text, the formatting might be lost and the information misinterpreted.

Systems can also use structured drop-down lists that can be customized or network to a larger file (e.g., a SNOMED database for diagnoses codes) to reduce the challenges associated with inconsistency because of free-text entry, such as by constraining a physician to select a frequency of "twice daily" rather than type "BID" when ordering a medication.

Careful Use of Item Requirements

Required items, sometimes called hard stops, prevent the user from advancing through documentation until required information has been input into system, such as a patient's Social Security number during registration or preventing staff from marking a patient visit as "complete" or "closed" until missing information is entered. These items prevent users from missing important data elements but should be used judiciously and thoroughly tested to avoid negatively affecting user productivity. For example, if a user is unable to fill in a required field because of a unique patient situation, the system may prevent the user from advancing to other documentation.

Creation of Documentation Dashboards

Some organizations create dashboards in the system or on a computer screensaver that displays to staff or managers the status of key documentation elements for a particular patient. These can be related to missing or incomplete documentation or to a patient's progress toward health goals.

Adherence to State and Federal Laws

State and federal laws and regulations; accreditation standards; medical staff bylaws, rules, and regulations; and organizational policies and procedures mirror standardization decisions and should be followed by providers and staff. The Joint Commission's Information Management and Record of Care standards, HIPAA rules, CMS Conditions of Participation, and Federal Rules of Civil Procedure related to electronic discovery are just a few of the standards that should be kept in mind when developing standards and procedures.

Compliance with Data Integrity Policies and Procedures

Data integrity policies and procedures must be followed. These policies may apply to processes for new patient file creation, handling duplicate records, and addressing overlays because two patients have been assigned the same unique identifier. It is important to implement policies and procedures to maintain the integrity of the data throughout the patient encounter for all information entered into the EHR. Individuals dedicated to the continuous auditing and EHR correction processes, monitor the system proactively and correct errors as they are identified.

Appendix J Reference

1. https://www.healthit.gov/sites/default/files/onc-beacon-lg3-ehr-data-quality-and-perform-impvt.pdf

Data Element Capture Template (Appendix K)

Data Elements: Captured to report on NQF measure #18, Controlling Hypertension.

Numerator: The number of patients in the denominator whose most recent BP is adequately controlled during the measurement year. For a patient's BP to be controlled, both the systolic and diastolic BP must be <140/90 (adequate control). To determine if a patient's BP is adequately controlled, the representative BP must be identified.

Denominator: Patients 18 to 85 years of age by the end of the measurement year who had at least one outpatient encounter with a diagnosis of hypertension during the first six months of the measurement year.

Description: Define data element.

Performance: How frequently is the data in the appropriate field?

Location of Data in EHR: Where data can be found. Provide screenshot, when possible.

Structured Data Field? Can the data be extracted into a usable report?

Action Needed: Which data elements require action to correct?

#	Data Element Name (examples)	Description	Performance	Location of Data Field in EHR. Provide screenshot, when possible.	Structured Data Field? Able to be pulled into report via code or value?			Action Needed	
					Yes	No	Unsure	Yes	No
	Adult Outpatient Visit			Encounter	○	○	○	○	○
	Annual Wellness Visit			Encounter	○	○	○	○	○
	Chronic Kidney Disease, Stage 5			Condition/Diagnosis/ Problem	○	○	○	○	○
	Dialysis Education			Intervention	○	○	○	○	○
	Dialysis Services			Procedure	○	○	○	○	○
	Diastolic Blood Pressure			Physical Exam	○	○	○	○	○

#	Data Element Name (examples)	Description	Performance	Location of Data Field in EHR. Provide screenshot, when possible.	Structured Data Field? Able to be pulled into report via code or value?			Action Needed	
					Yes	No	Unsure	Yes	No
	ESRD Monthly Outpatient Services			Encounter	○	○	○	○	○
	End Stage Renal Disease			Condition/Diagnosis/ Problem	○	○	○	○	○
	Essential Hypertension			Condition/Diagnosis/ Problem	○	○	○	○	○
	Ethnicity			Individual Characteristic	○	○	○	○	○
	Face-to-Face Interaction			Encounter	○	○	○	○	○
	Home Healthcare Services			Encounter	○	○	○	○	○
	Kidney Transplant			Procedure	○	○	○	○	○
	ONC Administrative Sex			Individual Characteristic	○	○	○	○	○
	Office Visit			Encounter	○	○	○	○	○
	Other Services Related to Dialysis			Intervention	○	○	○	○	○
	Payer			Individual Characteristic	○	○	○	○	○
	Pregnancy			Condition/Diagnosis/ Problem	○	○	○	○	○

#	Data Element Name (examples)	Description	Performance	Location of Data Field in EHR. Provide screenshot, when possible.	Structured Data Field? Able to be pulled into report via code or value?			Action Needed	
					Yes	No	Unsure	Yes	No
	Preventive Care Services - Established Office Visit, 18 and Up			Encounter	○	○	○	○	○
	Preventive Care Services-Initial Office Visit, 18 and Up			Encounter	○	○	○	○	○
	Race			Individual Characteristic	○	○	○	○	○
	Systolic and Diastolic Blood Pressure			Physical Exam	○	○	○	○	○
	Vascular Access for Dialysis			Procedure	○	○	○	○	○
	Smoking status				○	○	○	○	○
					○	○	○	○	○
					○	○	○	○	○
					○	○	○	○	○
					○	○	○	○	○
					○	○	○	○	○
					○	○	○	○	○

CDS Intervention Rating Scale (Appendix L)

Instructions: As a group (the project team), prioritize the CDS interventions, based on your belief in the ease of implementation and effectiveness of resolving the problem. There are spaces at the bottom to add your own CDS interventions. There is no right or wrong answer.

1. Choose only one rating per strategy.
   1 – Simple and effective; we should definitely do this.
   2 – Simple or effective; we should possibly do this.
   3 – Much less simple or effective; we should do this only after trying the others.

2. Begin with the CDS strategies that the team rated as "1" and then move onto the "2" rated strategies and so on.

#	CDS Intervention	Rating		
		1	2	3
	Use of the UpToDate® HL7 Infobutton to provide linked clinical decision support and patient information distribution. The Infobutton facilitates quick access to UpToDate tailored content based on your search query.	○	○	○
	Hypertension treatment templates based on evidence-based clinical guidelines, including treatment by stage of hypertension and risk stratification	○	○	○
	Suggestions and exclusions for medications based on concurrent medical conditions	○	○	○
	Reminder of the underlying causes of nonessential or secondary hypertension	○	○	○
	Indications for referral to a hypertensive specialist	○	○	○
	Hypertension management templates with questions about self-care, weight, physical activity level, blood pressure monitoring, and salt intake	○	○	○
	Prepopulated hypertension order sets, including preferred medications (generics, 90 - day supplies)	○	○	○
	Formularies are added to e-prescribing lists to help minimize patient out-of-pocket costs	○	○	○
	Blood pressure medication default to 90-day supply to decrease patient time spent obtaining refills.	○	○	○
	Medication refill review tool (such as the MMMA) to assess adherence	○	○	○
	Prepopulated referrals for nutrition and/or behavioral health counseling	○	○	○

#	CDS Intervention	Rating		
		1	2	3
	Targeted highlighting of relevant data	○	○	○
	Reminder to order pertinent labs (creatinine, urine protein, etc.)	○	○	○
	Reminder to order home blood pressure monitor prescription	○	○	○
	Reminder to provide patient education materials on the DASH diet	○	○	○
	Reminder to use a visit summary for 'teach back' to make sure patient understands treatment plan including medications, follow-up appointments, lifestyle goals, etc.	○	○	○

AMA Tips for Accurate Blood Pressure Reading (Appendix M)

https://www.ama-assn.org/sites/default/files/media-browser/public/iho/iho-graphic-7-tips.pdf

Blood Pressure Log Template (Appendix N)

Is my blood pressure at goal?

Name

Record your blood pressure (BP). Write **TOP Number** (systolic BP) in **Column 1 (green) if it is 139 or lower** or in **Column 2 (pink) if it is 140 or higher. Record bottom BP number and heart rate (pulse).**

		COLUMN 1	**COLUMN 2**		
Date	Time	TOP BP 139 or lower	TOP BP 140 or higher	Bottom BP (Diastolic BP)	Pulse
	AM				
	PM				
	AM				
	PM				
	AM				
	PM				
	AM				
	PM				
	AM				
	PM				
	AM				
	PM				
	AM				
	PM				

If there are more TOP BP in the 1st column (GREEN) than in the 2nd column (PINK) your BP *IS* at goal.

If your BP *IS NOT* at goal, contact:

Contact

Sample Blood Pressure Log (Appendix O)

Is my blood pressure at goal?

Name

Record your blood pressure (BP). Write **TOP Number** (systolic BP) in **Column 1 (green) if it is 139 or lower** or in **Column 2 (pink) if it is 140 or higher. Record bottom BP number and heart rate (pulse).**

Date	Time	COLUMN 1 TOP BP 139 or lower	COLUMN 2 TOP BP 140 or higher	Bottom BP (Diastolic BP)	Pulse
5/23	10:30 AM		141	79	55
	8:00 PM		161	63	54
5/24	9:00 AM		146	79	52
	8:00 PM		157	68	57
5/25	8:00 AM	138		81	63
	8:30 PM		148	77	57
5/26	9:00 AM		151	78	52
	8:30 PM	137		70	52
5/27	9:00 AM		161	77	58
	8:35 PM		142	59	57
5/28	8:30 AM	134		79	57
	9:00 PM		157	79	60
5/29	9:00 AM		151	71	56
	7:30 PM	137		77	57

If there are more TOP BP in the 1st column (GREEN) than in the 2nd column (PINK) your BP *IS* at goal.

If your BP *IS NOT* at goal, contact:

Contact

Implementation Plan Template (Appendix P)

Instructions: Develop an implementation plan for each step in the new care process. Identify each task, along with who will take the lead and by what time the task should be finished or reviewed for an update. Select measures to track to help make sure that the strategies are working. See suggestions for measuring at the bottom of each "strategy" page in the Toolkit.

What	Who	By When	Outcome & Next Step
CURRENT PLAN (List selected strategies)			
MEASUREMENT (Based on selected strategies)			

Implementation Plan Sample (Appendix Q)

Instructions: Develop an implementation plan for each step in the new care process. Identify each task, along with who will take the lead and by what time the task should be finished or reviewed for an update. Select measures to track to help make sure that the strategies are working. See suggestions for measuring at the bottom of each "strategy" page in the Toolkit.

What	Who	By When	Outcome & Next Step
NEW FLOW OF WORK			
Maintain registry of patients with hypertension	Staff A All providers	Ongoing	• Staff A will run a new report of patients with HTN and will identify patients with inadequately controlled blood pressure. • Staff A will review this smaller sample for additional drivers. • Track patients who need follow-up based on the practice's protocols.
Schedule patients for future appointments at the conclusion of each visit	Staff B	March 24	• Staff B will re-appoint the patient at the conclusion of the visit.
Measure blood pressure accurately and consistently in the office	Nursing staff A and B, Practice Manager	March 31	• Post AMA's poster in each exam room. • At next staff meeting, watch webinar on how to take an accurate blood pressure and practice on one another.
Identify patient education resources and integrate into workflow.	Providers and Nursing staff, Practice Manager	March 15	• Review patient resources at next staff meeting for accessible resources. • Make copies available for handouts in each exam room. • Contact EHR vendor to inquire about patient education resources.
MEASUREMENT			
Chart review to identify if patient education was provided	Nurse A, Practice Manager	May 1 to May 30	• Bring results to staff meeting
Run a report on all patients with HTN and identify the number without a follow up appointment	Nurse B and Practice Manager	Monthly for three months: May to July	• Call patients to schedule appointment.

From 70 to 80 percent: The Hypertension Management Toolkit
v1.0 06/17

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