



Identifying Undiagnosed Hypertension through Health IT Optimization

September 22, 2020



Housekeeping

- Please keep lines muted when not speaking.
- This session is being recorded.
- Slides and a recording will be available.

Toolbox

- Use the chat box to communicate with the speaker and participants.
- Turn on your webcam.
- Polls and questions via **menti.com**

Welcome



Hannah Stanfield
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Mercy Housing

Health Promotion Research Center

Samoan Nurses Org. in WA (SNOW)

Healthy Gen

Washington State Department of Health

Tacoma-Pierce County Health Department

Columbia Valley Community Health

Seattle Indian Health Board

Tri-Cities Community Health

Community Health Care

Public Health Seattle & King County


NEW Health

CHAS Health

Native Project

HealthPoint

Neighborcare Health



Identifying Undiagnosed Hypertension Through Health IT Optimization

HEALTH INFORMATION TECHNOLOGY,
HIT EQ
EVALUATION, AND QUALITY CENTER

Agenda

- Introduction
- Goal and Value Proposition
- Use of HIT
- Patient Engagement
- Getting Started!

Intro to HITEQ

The HITEQ Center is a HRSA-funded National Cooperative Agreement that collaborates with HRSA partners including Health Center Controlled Networks, Primary Care Associations and other National Cooperative Agreements to support health centers in full optimization of their EHR/Health IT systems.

HITEQ identifies and disseminates resources for using health information technology (IT) to improve quality and health outcomes. HITEQ includes:

- A searchable **web-based health IT knowledgebase** with resources, toolkits, training, and a calendar of related events
- **Workshops and webinars** on health IT and QI topics
- **Technical assistance** and responsive teams of experts to work with health centers on specific challenges or needs

Contact HITEQ for training or technical assistance

HITEQ SERVICES SUPPORT:

- Health IT Enabled Quality Improvement
- EHR Selection & Implementation
- Health Information Exchange
- Health IT/QI Workforce Development
- Value-Based Payment
- Privacy & Security
- Electronic Patient Engagement
- Population Health Management & Social Determinants of Health
- Achieving Meaningful Use
- Telehealth & Telemedicine

email us at hiteqinfo@jsi.com!



Goals and Value Proposition

Why Focus on Undiagnosed
Hypertension?

Value Proposition

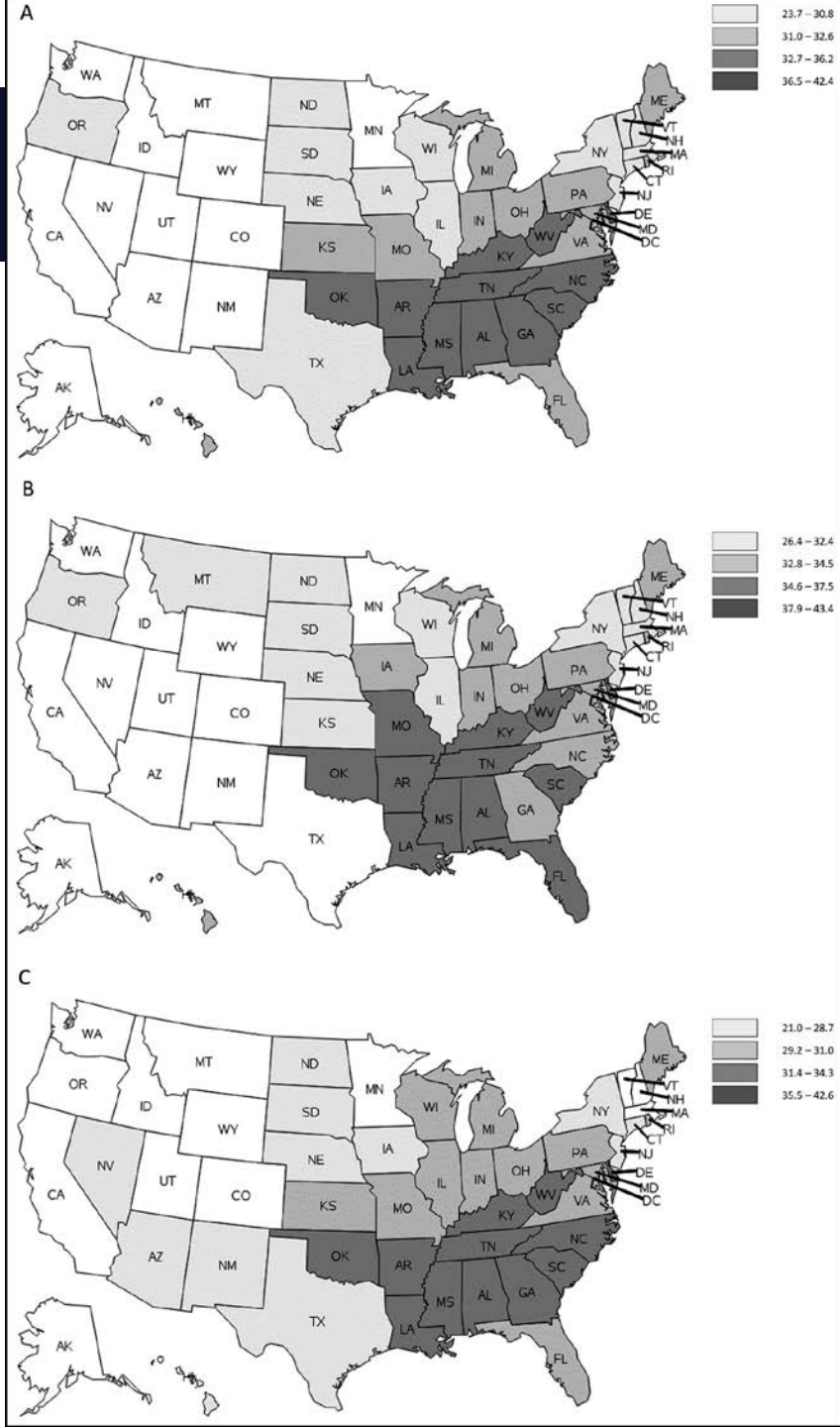
Value Proposition

- Morbidity + mortality
- Your care compared to expected prevalence rates
- COVID + heart health
- Impact of undiagnosed focus on hypertension control rates

Washington Data

Hypertension -> heart attacks + strokes

11.5 unaware and untreated for high blood pressure



Washington Data

Model-based estimates for high blood pressure among adults aged ≥ 18 years - 2017

Start with a location, then choose a measure.

Location Type

- City data by State
- Census tract data by City

State

Washington

Category

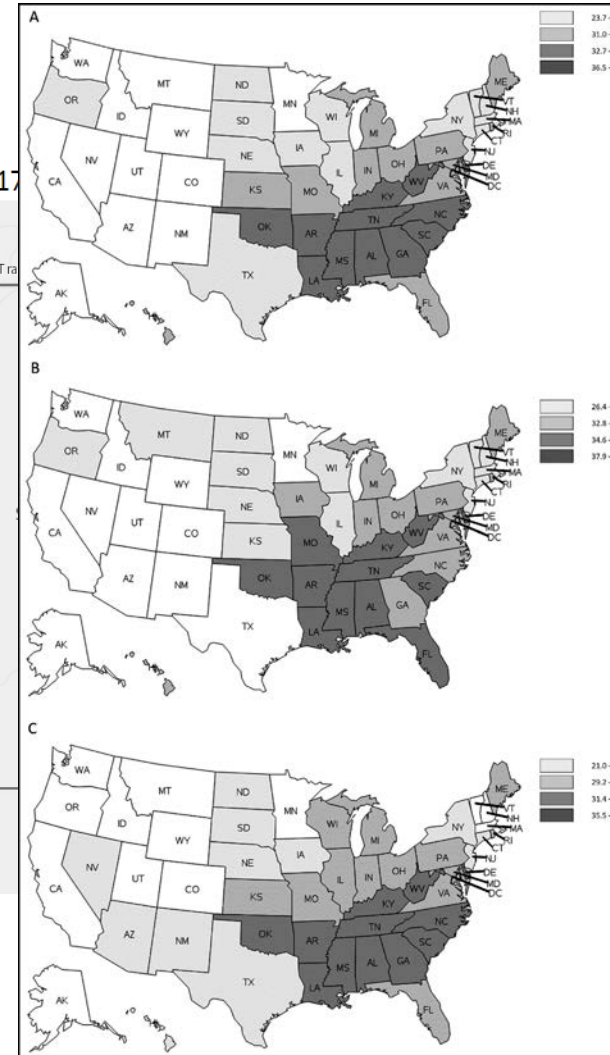
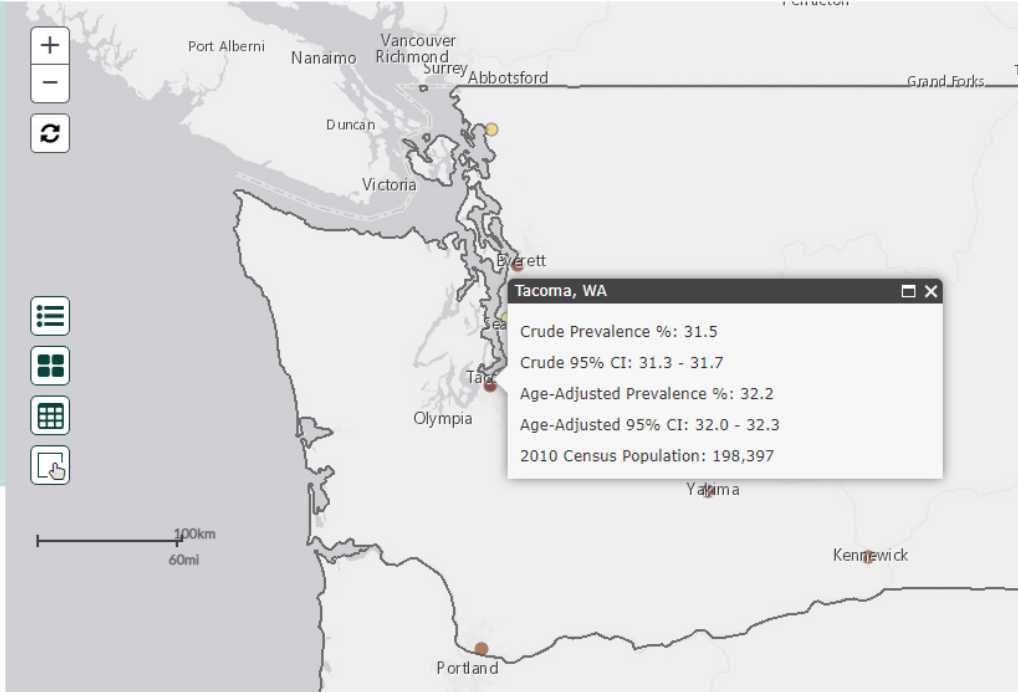
Health Outcomes

Measure

High Blood Pressure

[Measure definitions](#)

GO



Estimating Prevalence

minorityhealth.nhs.gov

18-44 years

45-64 years

65-74 years

75-85 years

Clear All

| Details | Age Group (years) | Race-ethnicity | Number of Comorbidities per Patient ⁱ | Number of Patients | |
|---------|-------------------|--------------------|--|----------------------|----------------------|
| | | | | Men | Women |
| ▼ | 18-44 | Non-Hispanic white | n/a | <input type="text"/> | <input type="text"/> |
| ▼ | 18-44 | Non-Hispanic black | n/a | <input type="text"/> | <input type="text"/> |
| ▼ | 18-44 | Hispanic | n/a | <input type="text"/> | <input type="text"/> |
| ▼ | 18-44 | Other | n/a | <input type="text"/> | <input type="text"/> |
| ▼ | 18-44 | Missing | n/a | <input type="text"/> | <input type="text"/> |

Back

Calculate Expected Prevalence ▶

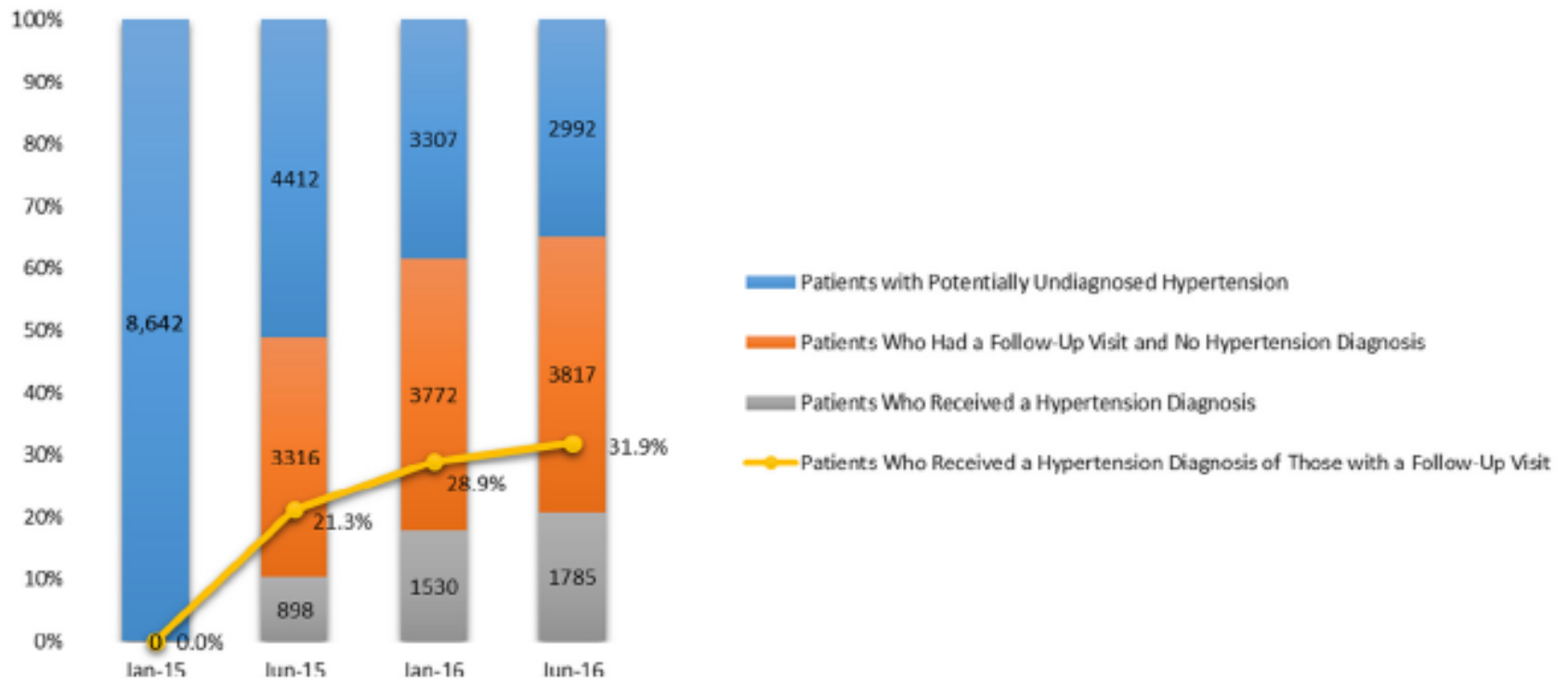
COVID19

| Level of Evidence | Condition | Impact on COVID-19 Severity | Notes |
|---|---|---|---|
| Strongest and Most Consistent Evidence | Serious heart conditions, such as heart failure, coronary artery disease, or cardiomyopathies | Cohort Study [1, 2] Meta Analyses [3, 4] Case Series [5] | On previous version of list as "Serious Heart Conditions" |
| | Cancer | Systematic Review [6] Cohort Study [7, 8] Case Series [9] | New to updated list as of July 17, 2020 |
| | Chronic kidney disease | Case Series [10] | On previous version of list as "Chronic |

| | | | |
|-----------------------|-------------------------|---|---|
| Mixed Evidence | Asthma | Cohort Study [14, 39, 40, 41] Case Series [17] | On previous version of list |
| | Cerebrovascular disease | Meta Analysis [42, 43, 44, 45] Synthesis of Evidence [46] Cohort Study [1, 2, 47, 48, 49] | New to updated list as of June 25, 2020 |
| | Hypertension | Cohort Study [1, 2, 49, 50, 51] Systematic Review [52] Meta Analyses [3, 4, 53] | New to updated list as of June 25, 2020 |

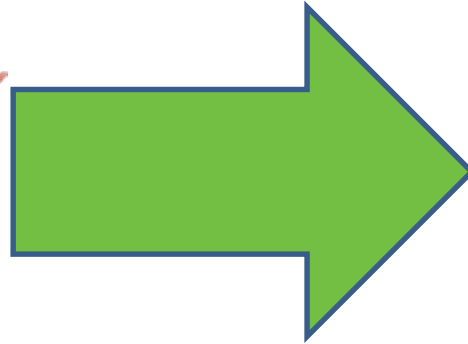
Measurement

Undiagnosed Hypertension Longitudinal Study Group by Follow-Up Visit and Hypertension Diagnosis



Source: Meador, M et al, Improving Identification and Diagnosis of Hypertensive Patients Hiding in Plain Sight (HIPS) in Health Centers

Undiagnosed to



Undiagnosed to



EVIDENCE
BASED
GUIDELINES

SCREEN

TRACK

QI DATA



Health Information Technology

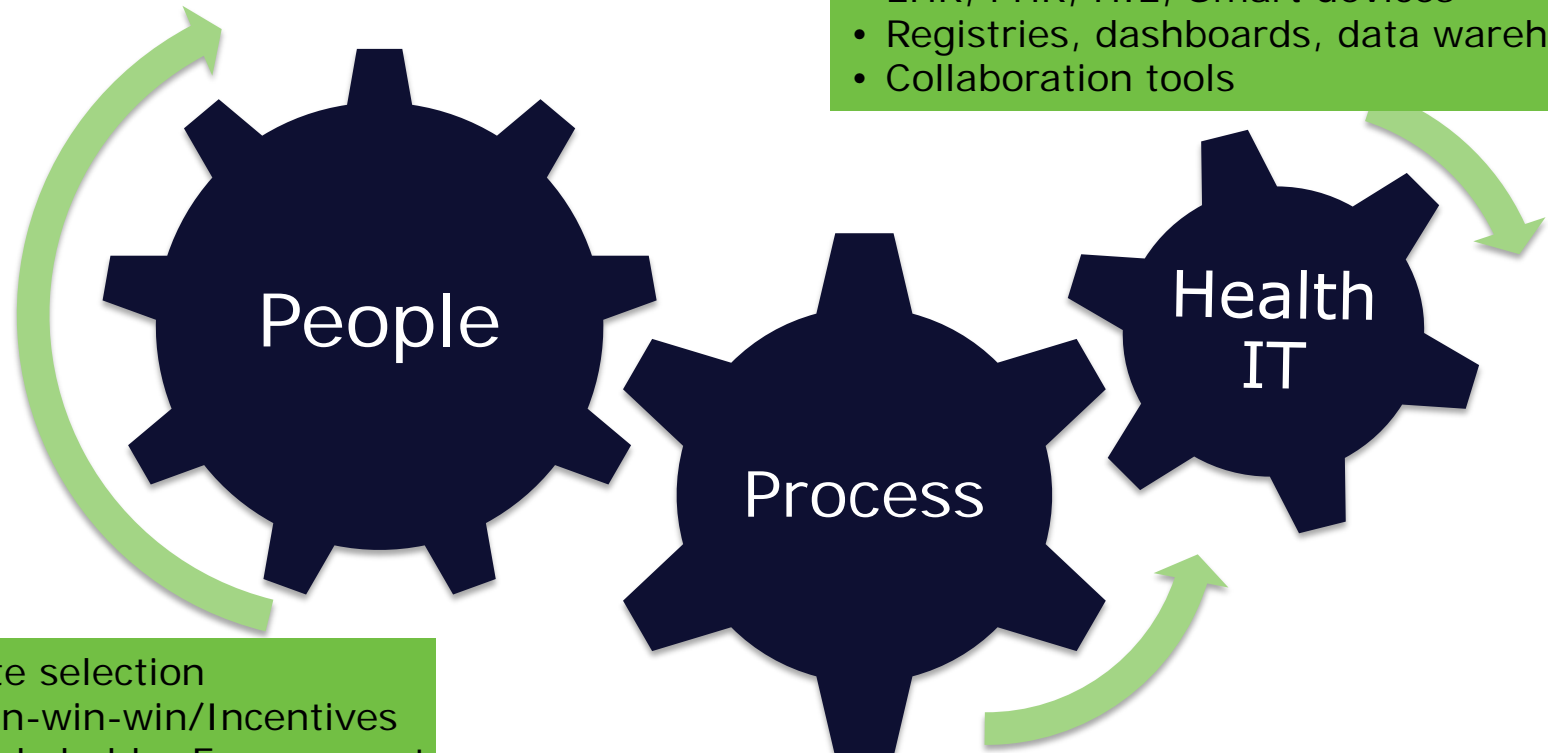
Tools to Get From Unknown to
Diagnosed

HIT

- CDS
- Screening
- Evidence based guidelines
- Coding and Diagnosing
- Registries
- Data driven QI

Focus: People, Process, and Health IT

In That Order!



- EHR, PHR, HIE, Smart devices
- Registries, dashboards, data warehouse
- Collaboration tools

- Site selection
- Win-win-win/Incentives
- Stakeholder Engagement
- Improvement Culture
- Learning/Sharing

- Analyze workflow, improvement opportunities
- Consider best practices
- Design/implement key changes (PDSA cycles)
- Monitor progress toward goals
- Continually improve clinical and QI work

Support Care Decisions/Actions

Clinical Decision Support (CDS)

Definition:

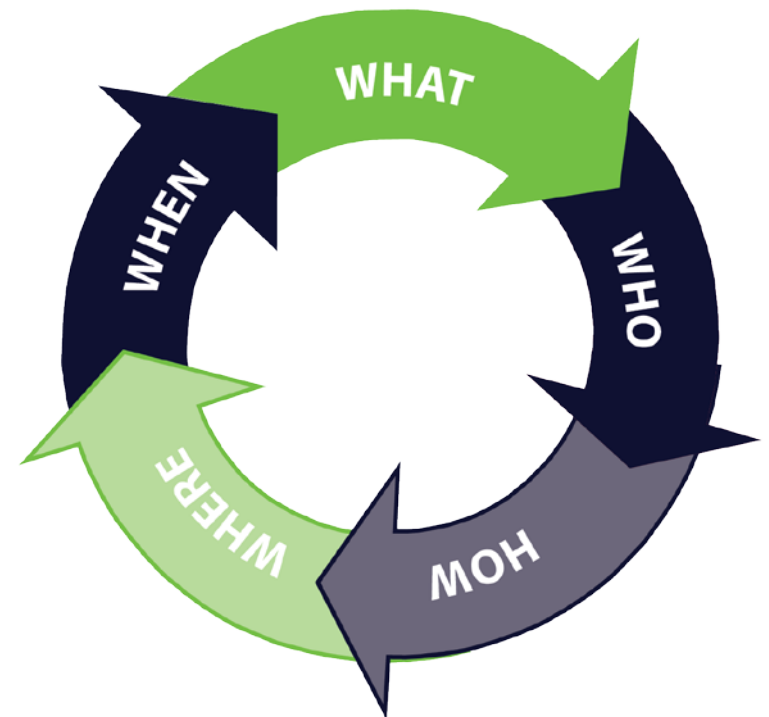
A ***process*** for enhancing health-related decisions and actions with pertinent clinical knowledge and patient information to improve health and healthcare delivery. *Improving outcomes with CDS, 2nd Ed. HIMSS 2012*

- ❑ *Very broad: way beyond alerts, order sets; invites more creative use of data/Health IT*
- ❑ Includes many things health centers are already doing (though perhaps not optimally)

Use CDS 5 Rights Framework

To improve targeted care processes/outcomes, get:

- the right **information**
 - ✓ evidence-based, actionable... [what]
- to the right **people**
 - ✓ clinicians and patients... [who]
- in the right **formats**
 - ✓ Registry reports, documentation tools, data display, care plans... [how]
- through the right **channels**
 - ✓ EHR, patient portal, smartphones, home monitoring, HIE ... [where]
- at the right **times**
 - ✓ key decision/action, prior to visits ... [when]



3 Key HIT/QI Questions

Regarding target-focused workflow/info flow:

What *should* we be doing to produce better processes and results?



What are we currently doing? What are we trying to improve and what is the baseline?

What changes might we make to produce better processes and results?

Screening

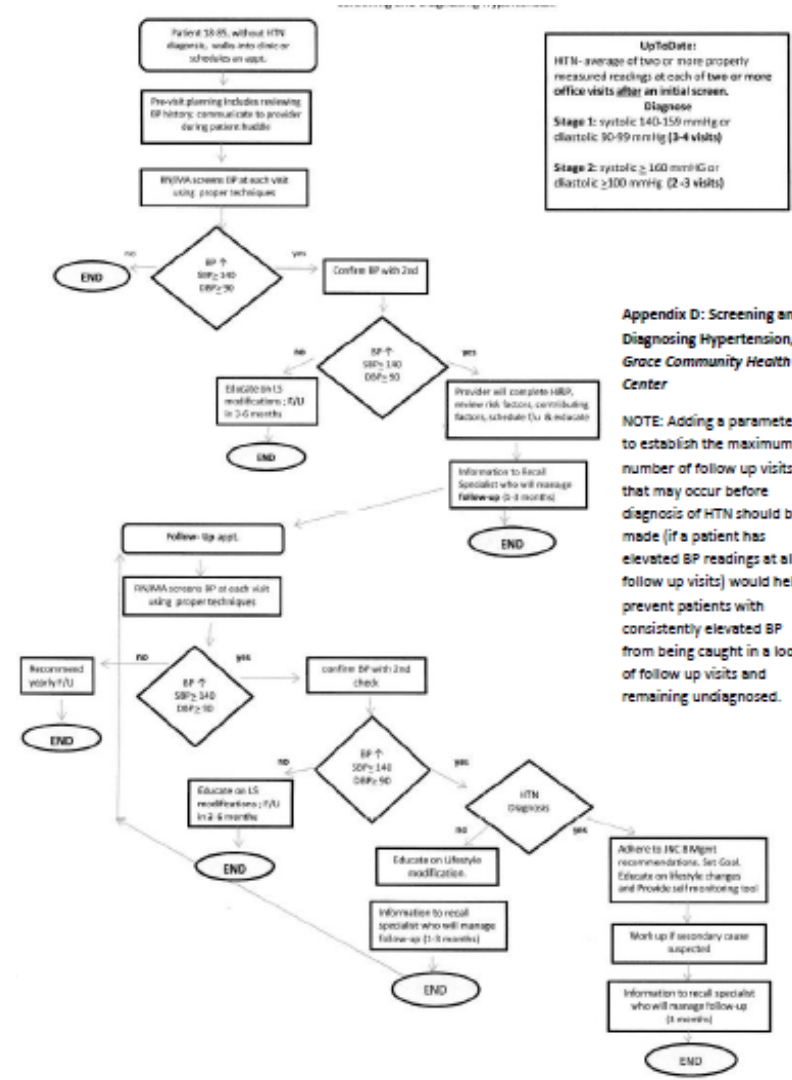
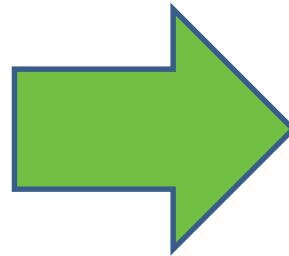
- Screening and diagnosis policy
- Workflow process map
- Registry report for identification
- Flags when BP out of range
- BP measurement flow sheet

Screening & Diagnosis Policy

- How many readings?
 - How to flag for next visit
 - Stage 1 vs Stage 2
- In what time frame?
- Repeating measurement at the visit
- Follow up

Screening – Flowchart

- How many readings?
 - How to flag for next visit
 - Stage 1 vs Stage 2
- In what time frame?
- Repeating measurement at the visit
- Follow up



Screening – EHR Configurations

- BP out of range

Blood Pressure and pulses:  **Blood pressure is elevated.**

Systolic: / Diastolic: mmHg

Position: Sitting

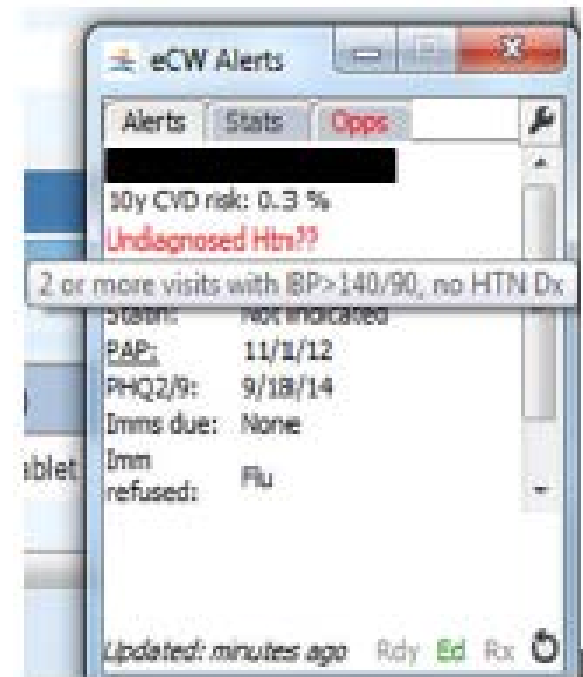
Finger Probe:

Blood Pressure and pulses:  **Blood pressure is elevated.**

Systolic: / Diastolic: mmHg

Position: Sitting

Finger Probe:



eCW Alerts

Alerts Stats Ops

30y CVD risk: 0.3 %

Undiagnosed Htn??

2 or more visits with BP > 140/90, no HTN Dx

Status: not indicated

PAP: 11/1/12

PHQ2/9: 9/18/14

Imms due: None

Imm refused: Flu

Updated: minutes ago Rdy Ed Rx

Screening – EHR Configurations

Appendix Q: Blood Pressure Flow Sheet with Red Framed Alerts for Elevated Blood Pressure Readings – SuccessEHS, ARcare/KYcar

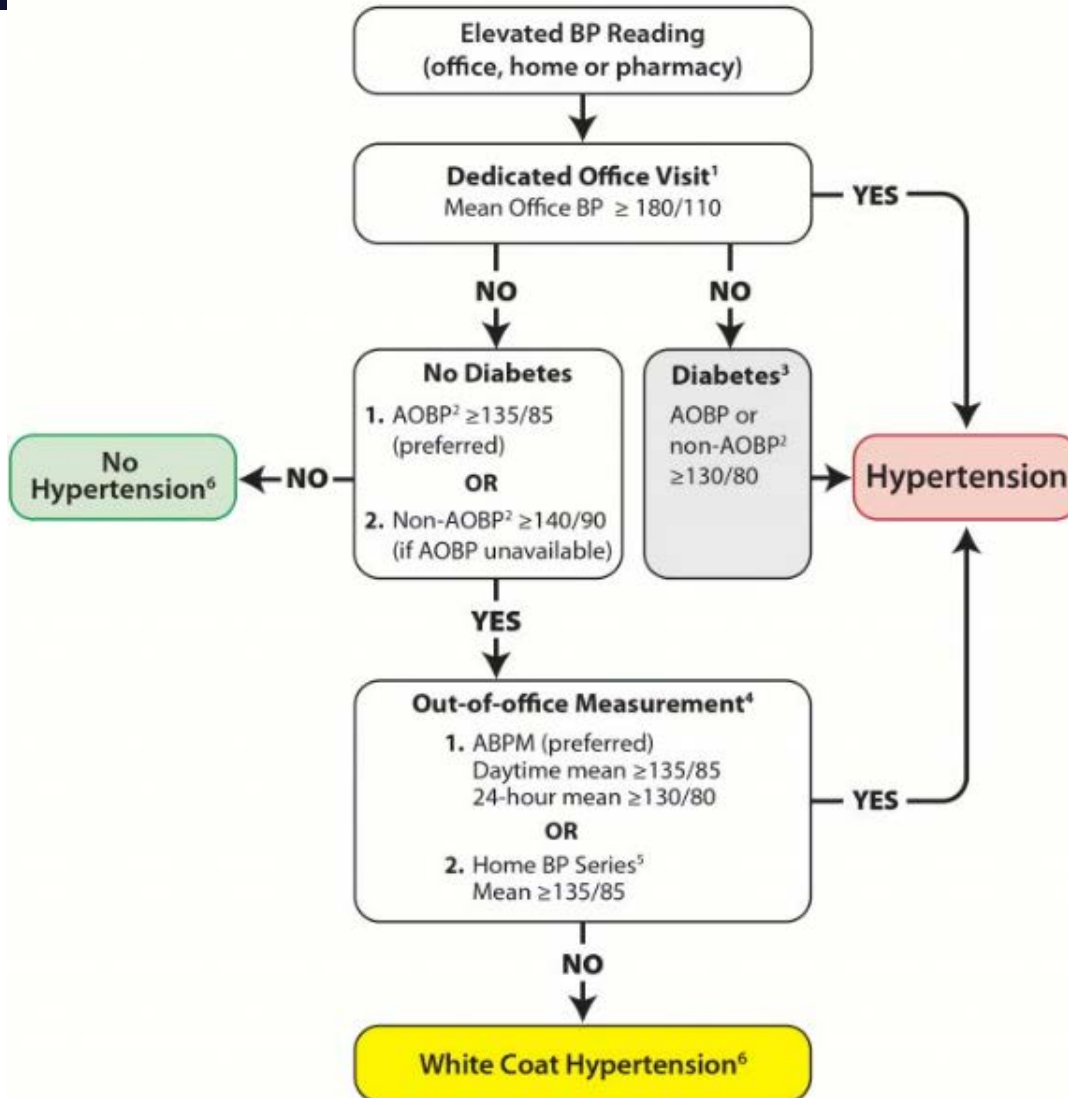
The screenshot displays an EHR interface for a patient's chart overview. The main area shows a 'Vital Signs' table with columns for Date, Temp (F), Pulse, R/R (b), O2 Sat, BP (mm), Ht/Len (ft), HC (in), Weight (lb), Weight (kg), BMI (kg/m²), BSA (m²), Waist, Hips (cm), PA, Details, Tech, and Age. Several BP readings are highlighted with red boxes, indicating alerts for elevated blood pressure. The interface also includes a navigation bar at the top, a left sidebar with a tree view, and a right sidebar with various configuration options.

| Date | Temp (F) | Pulse | R/R (b) | O2 Sat | BP (mm) | Ht/Len (ft) | HC (in) | Weight (lb) | Weight (kg) | BMI (kg/m ²) | BSA (m ²) | Waist | Hips (cm) | PA | Details | Tech | Age |
|------------|----------|-------|---------|--------|---------|-------------|---------|-------------|-------------|--------------------------|-----------------------|-------|-----------|----|---------|----------|--------|
| 03/29/2015 | 98.5 | 69 | 18 | 99% | 115/76 | 5' 7" | | 91.98 | 202.60 | 31.70 | 2.10 | | | 1 | ** | Marilynn | 49 Yrs |
| 04/08/2015 | 98.5 | 80 | 18 | 96% | 121/79 | 5' 7" | | 93.8 | 205.60 | 32.40 | 2.10 | | | 0 | ** | Raulaw | 49 Yrs |
| 03/25/2015 | 98.2 | 76 | 18 | 99% | 128/85 | 5' 7" | | 92.89 | 204.60 | 32 | 2.10 | | | 0 | ** | Marilynn | 48 Yrs |
| 03/19/2015 | 98.5 | 77 | 18 | 97% | 158/98 | 5' 7" | | 96.25 | 212 | 33.20 | 2.10 | | | 5 | ** | Shainap | 48 Yrs |
| 03/18/2015 | 98.7 | 82 | 18 | 98% | 120/80 | 5' 7" | | 95.61 | 210.60 | 33 | 2.10 | | | 0 | ** | Marilynn | 48 Yrs |
| 02/25/2015 | 98.4 | 75 | 18 | 99% | 155/94 | 5' 7" | | 95.07 | 209.40 | 32.80 | 2.10 | | | 0 | ** | Marilynn | 48 Yrs |
| 07/22/2014 | 98.4 | 72 | 18 | 97% | 143/84 | 5' 7" | | 83.45 | 183.80 | 28.80 | 2 | | | 3 | ** | Marilynn | 48 Yrs |
| 06/23/2014 | 98.1 | 76 | 18 | 98% | 113/76 | 5' 7" | | 83.34 | 184 | 28.80 | 2 | | | 9 | ** | Kathys | 48 Yrs |
| 06/19/2014 | 98.4 | 63 | 18 | 98% | 144/83 | 5' 7" | | 84.08 | 185.20 | 29 | 2 | | | 6 | ** | Marilynn | 48 Yrs |
| 05/20/2014 | 98.1 | 68 | 18 | 97% | 120/80 | 5' 7" | | 85.35 | 188 | 29.40 | 2 | | | 6 | ** | Kathys | 48 Yrs |
| 04/17/2014 | 99.1 | 64 | 20 | 97% | 132/85 | 5' 7" | | 84.08 | 185.20 | 29 | 2 | | | 10 | ** | Marilynn | 48 Yrs |
| 03/21/2014 | 98.1 | 70 | 20 | 97% | 137/85 | 5' 7" | | 87.62 | 193 | 30.20 | 2 | | | 8 | ** | Awest | 47 Yrs |
| 03/18/2014 | 98.7 | 71 | 20 | 97% | 127/80 | 5' 7" | | 86.81 | 191.20 | 29.90 | 2 | | | 7 | ** | Dierad | 47 Yrs |
| 03/11/2014 | 98.5 | 64 | 18 | 98% | 133/86 | 5' 7" | | 87.44 | 192.60 | 30.20 | 2 | | | 6 | ** | Dianad | 47 Yrs |
| 01/18/2014 | 100.0 | 74 | 18 | 96% | 126/78 | 5' 7" | | 86.99 | 191.60 | 30 | 2 | | | 9 | ** | Dianad | 47 Yrs |
| 01/06/2014 | 98.3 | 70 | 18 | 99% | 124/75 | 8' 1" | | 88.99 | 195 | 14.60 | 2.50 | | | 6 | ** | Dianad | 47 Yrs |
| 01/17/2014 | 98.4 | 63 | 18 | 98% | 132/76 | 5' 7" | | 88.99 | 196 | 30.70 | 2 | | | 7 | ** | Dianad | 47 Yrs |
| 12/19/2013 | 98.6 | 66 | 18 | 97% | 124/82 | 5' 7" | | 86.99 | 191.60 | 30 | 2 | | | 8 | ** | Marilynn | 47 Yrs |
| 11/18/2013 | 98.2 | 65 | 18 | 98% | 115/75 | 5' 7" | | 87.35 | 192.40 | 30.10 | 2 | | | 9 | ** | Marilynn | 47 Yrs |
| 10/18/2013 | 97.5 | 01 | 18 | 99% | 128/81 | 5' 7" | | 89.35 | 198.80 | 30.80 | 2.10 | | | 8 | ** | Marilynn | 47 Yrs |
| 09/19/2013 | 97.0 | 61 | 18 | 98% | 114/76 | 5' 7" | | 88.44 | 194.80 | 30.50 | 2 | | | 6 | ** | Dianad | 47 Yrs |
| 08/16/2013 | 98.7 | 77 | 18 | 97% | 133/85 | 5' 7" | | 88.62 | 195.20 | 30.60 | 2 | | | 4 | ** | Marilynn | 47 Yrs |
| 07/16/2013 | 97.8 | 74 | 18 | 98% | 127/82 | 5' 7" | | 90.17 | 198.60 | 31.10 | 2.10 | | | 7 | ** | Marilynn | 47 Yrs |
| 06/25/2013 | 98.6 | 73 | 18 | 96% | 146/84 | 5' 7" | | 91.62 | 201.00 | 31.60 | 2.10 | | | 8 | ** | Marilynn | 47 Yrs |
| 06/14/2013 | 97.5 | 72 | 18 | 98% | 139/84 | 5' 7" | | 88.8 | 195.60 | 30.00 | 2 | | | 10 | ** | Marilynn | 47 Yrs |
| 05/20/2013 | 99.0 | 78 | 18 | 96% | 134/85 | 5' 7" | | 88.8 | 195.60 | 30.00 | 2 | | | 8 | ** | Marilynn | 47 Yrs |
| 01/15/2013 | 99.8 | 81 | 18 | 96% | 132/87 | 5' 7" | | 88.76 | 198.90 | 31.10 | 2.10 | | | 1 | ** | Marilynn | 47 Yrs |

Embed Evidence-Based Guidelines into Workflows and Enhancements

- Review guidelines and **select the best one(s)** for your clinical setting. Make sure they are based on the best medical evidence.
 - Identify existing guidelines. **done in the previous steps!*
 - Have providers review and discuss guidelines to develop consensus.
 - Customize guidelines as needed, within the boundaries of the evidence.
 - Review and update guidelines and agreed upon workflows for care regularly.
- Consider conducting a **baseline chart audit** to benchmark your current practice against agreed upon guidelines.
 - Agree *before* the audit which patients to include. Do NOT omit charts because a randomly selected chart is not that of a "typical" patient. **part of data validation*
- Use a **standardized assessment** to diagnose and determine disease control and risk for complications to guide management for all patients. *Be sure that this information is included in accordance with the 5 Rights.*
- Use flowsheets, pathways, or checklists to **embed enhancements/ protocols** into daily practice. Link guidelines to the information system to **provide prompts**.
- **Remove barriers identified with any previous guidelines or workflows.**

Coding and Diagnosing



Notes:

1. If AOBP is used, use the mean calculated and displayed by the device. If non-AOBP (see note 2) is used, take at least three readings, discard the first and calculate the mean of the remaining measurements. A history and physical exam should be performed and diagnostic tests ordered.
2. **AOBP** = Automated Office BP. This is performed with the patient unattended in a private area.
Non-AOBP = Non-automated measurement performed using an electronic upper arm device with the provider in the room.
3. Diagnostic thresholds for AOBP, ABPM, and home BP in patients with diabetes have yet to be established (and may be lower than 130/80 mmHg).
4. Serial office measurements over 3-5 visits can be used if ABPM or home measurement not available.
5. Home BP Series: Two readings taken each morning and evening for 7 days (28 total). Discard first day readings and average the last 6 days.
6. Annual BP measurement is recommended to detect progression to hypertension.

ABPM: Ambulatory Blood Pressure Measurement
AOBP: Automated Office Blood Pressure

Registries

QTracks - [Million Hearts]

File Setup Patients Find Reports Windows Help

Run Date: 5/29/2015 11:00:20 AM
Data Range: 5/1/2015 - 5/29/2015

Million Hearts

| Item | Value | % |
|--|-------|---|
| 1. Appropriate Monitoring for Hypertension (Improved Blood Identification and Diagnosis of Patients Meeting the Clinical Criteria for Hypertension) | | |
| A. Hypertension Prevalence | | |
| 1. All patients ages 18-85 seen for at least one medical visit during reporting period. Excludes pregnancy and ESRD | | |
| a. Patients in the denominator with a diagnosis of HTN anytime during the reporting period or earlier | | |
| B. Hypertension Prevalence Differential Denominator | | |
| 1. All patients ages 18-85 seen for at least one medical visit in the 12 months. Excludes pregnancy and ESRD | | |
| C. Undiagnosed Hypertension Denominator | | |
| 1. Patients ages 18-85 seen for at least one medical visit during reporting period who do not have a diagnosis of HTN. Excludes pregnancy and ESRD | | |
| 2. Appropriate Management of Hypertension | | |
| A. BP Control - NDF 0818 | | |
| 1. Patients ages 18-85 years with a diagnosis of primary HTN (ICD-9) within the first six months of measurement period (or year) and at least one medical visit during the reporting period. Excludes pregnancy and ESRD | | |
| a. Number of patients in the denominator whose most recent -140 mmHg systolic and -90 mmHg diastolic | | |
| B. BP Control - ICD | | |
| 1. Patients ages 18-85 years with a diagnosis of primary or secondary HTN within the first six months of measurement period (or year) seen for at least one medical visit during the reporting period. Excludes pregnancy and ESRD | | |
| a. Number of patients in the denominator whose most recent -140 mmHg systolic and -90 mmHg diastolic | | |

1. Patients in the denominator with a diagnosis of HTN anytime during the reporting period or earlier

Report: Million Hearts
Report Item: Patients in the denominator with a diagnosis of HTN anytime during the reporting period or earlier

| ID | Name | Gender | Age | DOB |
|-------|------|--------|-----|-----|
| 12194 | | M | 58 | |
| 12192 | | F | 35 | |
| 12193 | | M | 44 | |
| 12191 | | M | 44 | |
| 12197 | | M | 30 | |
| 11992 | | F | 40 | |
| 12198 | | M | 26 | |
| 12429 | | M | 30 | |
| 12620 | | M | 38 | |
| 12428 | | F | 33 | |
| 12626 | | F | 46 | |
| 12647 | | F | 33 | |
| 12646 | | F | 38 | |
| 12113 | | F | 37 | |
| 12123 | | F | 40 | |
| 12144 | | M | 38 | |

Registries - Recalling Patients

Grace Community Health Care

Recall Process

Hypertension Patients Hiding In Plain Sight (HIPS)

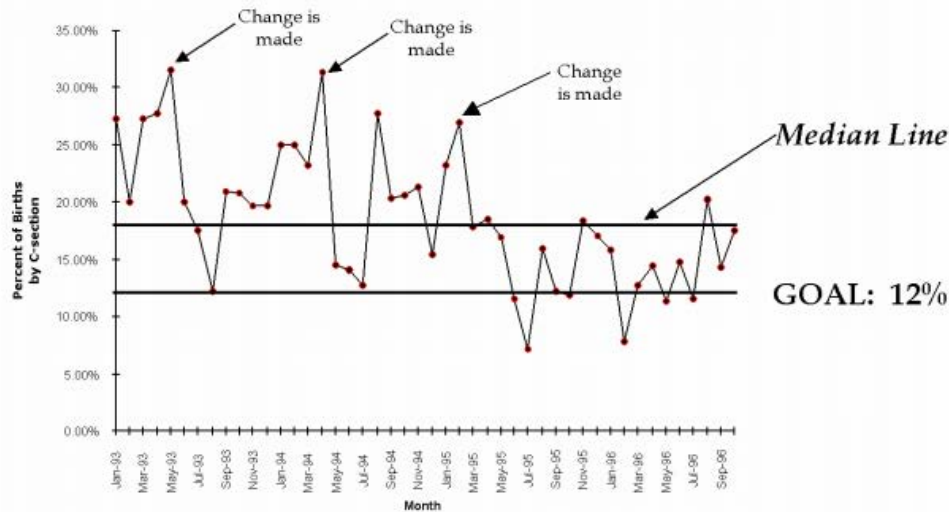
Run "potential missed opportunity" registry reports monthly

1. Provider given information about patients identified during chart review as "potentially a Missed Opportunity". Provider will indicate patients who qualify for a recall.
2. Nurse will call patient and inform them that a chart review revealed that their BP had been elevated during their last couple of visits and ask them to come in for a nurse visit (schedule should coincide with Provider schedule)
 - Document call, including refusal to come in, in telephone template
 - Two (2) attempts at phone calls then if unsuccessful
 - Send the patient a card/letter if not able to reach by phone
3. Blood Pressure taken at Nurse Visit
 - Ideally, patient has rested quietly before you obtain BP
 - Ensure Proper Cuff size
 - Ensure Proper Positioning
4. Nurse Visit: If initial BP Check is
 - **<140/90**: Discuss BP results with patient and educate as appropriate
 - **Stage 1 or Stage 2**: Take 2nd confirmatory BP in 5 minutes. If the **second BP is \leq 140/90** inform patient that their BP is elevated and send a task to inform the provider. If **second BP is \geq 160/100** find provider for direction.
5. Provider will determine next steps; consider diagnosis (HTN or Elevated BP)

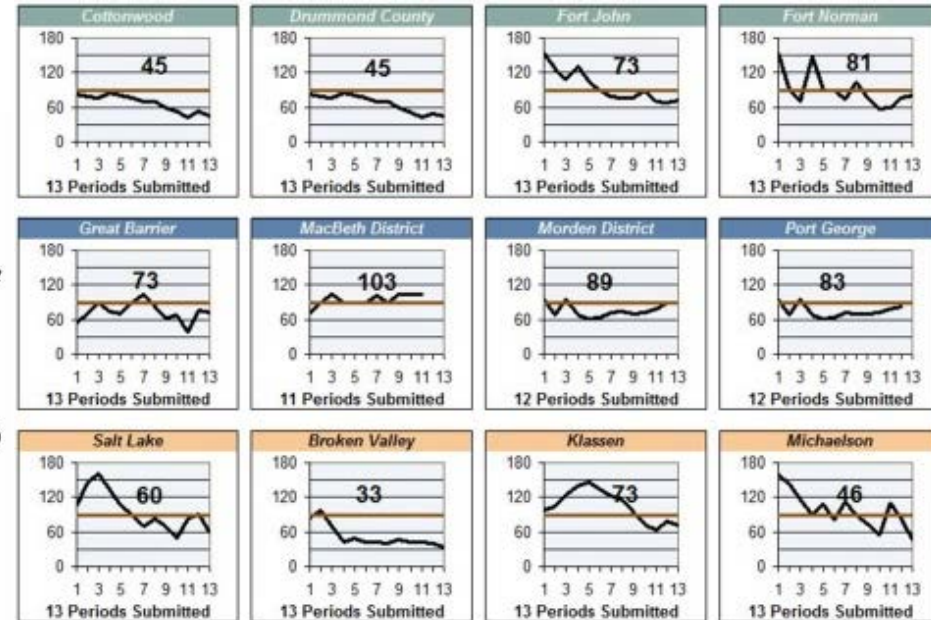
- Scripting
- Method of contact
- Number of attempts
- In office or telehealth

Data Driven QI - Monitoring

- Monitoring data allows you to identify issues as they arise, and act quickly to implement quality improvement activities.



Deliveries per month = 350-450



Available [here](#) on HITEQCenter.org

Collecting Related Data

Data Collection Plan

Issue *(Explain for what specific issue you are collecting data.)*

Questions *(What are you hoping to learn from this data?)*

- 1)
- 2)
- 3)

| | Definition <i>(Characteristic, numerator/denominator)</i> | Measure type <i>(Process, outcome, patient experience)</i> | Baseline <i>(Current or historical levels)</i> | Sample size <i>(n=?)</i> | Who <i>(Responsible team members)</i> | How/Where <i>(Method/source)</i> | By when <i>(Specific deadline)</i> | How often <i>(Frequency of collection)</i> | Reporting Method <i>(Approach to communicating/sharing)</i> |
|----|---|--|--|------------------------------------|---|--|--|--|---|
| 1) | | | | | | | | | |
| 2) | | | | | | | | | |
| 3) | | | | | | | | | |

Review Date: *(Date results are discussed with team)*

What does the data tell us? Did our questions get answered? What information do we still need?

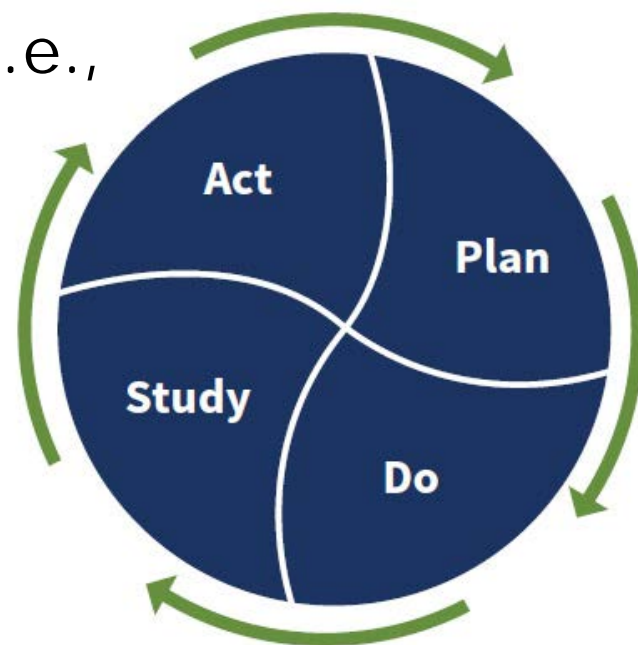
What worked well?

What could be improved?

Creating the Plan

- Using a QI methodology such as [PDSA cycles](#), engage frontline staff and all key stakeholders in care processes and results to design, implement and evaluate the selected enhancements.

Be sure to do this work **with** all the stakeholders and not **to** them (i.e., seek and act on team member and patient input and feedback throughout the process).



Data Driven QI

- Missed opportunities
- Change in number of Dx
- Prevalence of hypertension
- Stratify by race, insurance, etc.



Patient Engagement

SMBP

SMBP is a tool that can be used to confirm diagnosis

- Recent elevated BP in office
- High BP measure out of office

SMBP – Validated Devices

← → ↻ validatebp.org

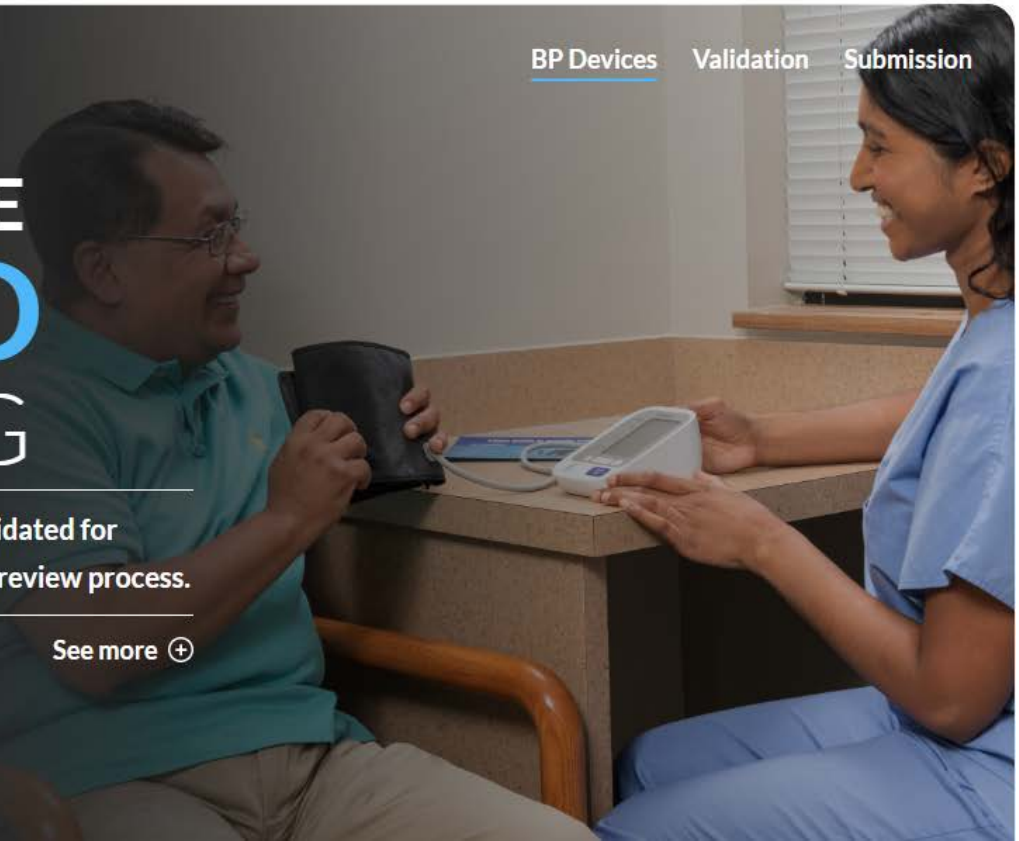


[BP Devices](#) [Validation](#) [Submission](#)

US BLOOD PRESSURE **VALIDATED** DEVICE LISTING

Blood pressure measurement devices that have been validated for clinical accuracy as determined through an independent review process.

[See more](#)



Priority Populations



- Black (42.4%) and Native American(27.2%) populations
 - Prevalence compared to county/state prevalence?
 - Elevated w/o Dx compared to universal patient population
 - Routine vs urgent care visits

Measuring Discrimination

Items

1. Frequently treated with less courtesy than others
2. Frequently treated with less respect than others
3. Frequently received poorer service than others
4. Frequently people think you're not smart
5. Frequently people are afraid of you
6. Frequently people act like you are dishonest
7. Frequently people act better than you
8. Frequently called names/insulted
9. Frequently threatened/harassed



Getting Started

What are you committed to doing next?

- Screen at every visit
- Data driven improvement
- Evidence based guidelines and protocols
- Registries
- Accurate BP Measurement
- Identification of hypertension during visit
- Optimize hypertension diagnosis

Resources

- [CDS/QI Worksheet](#).
- [NACHC HIPS Change Package](#)
- [Measuring Discrimination Resources](#)
- [Improving Identification and Diagnosis of Hypertensive Patients Hiding in Plain Sight \(HIPS\) in Health Centers](#) (article)

Thank you!

Please complete our short evaluation.

Hannah Stanfield
hstanfield@wacommunityhealth.org



**Washington
Association for
Community Health**
Community Health Centers
Advancing Quality Care for All

www.wacommunityhealth.org