Objectives

• Describe factors that contribute to uncertainty about what a patient's true blood pressure is in the office setting.

• Describe how clinical inertia and limited patient engagement contribute to suboptimal blood pressure control rates.

• Demonstrate how to use the "Act rapidly assessment tool" to identify factors contributing to uncontrolled hypertension at your practice or health center.

• Describe common barriers that contribute to successfully overcoming clinical inertia.
Blood pressure variability

Significant short and long term BP variability exists in all patients

- Physical activity
- Emotional stimuli
- Sleep
- Central BP oscillations
- Mechanical forces from ventilation
Blood pressure variability

Typical variability in a 24 hour period
Blood Pressure Variability

White coat effect

**White coat effect (WCE)** is a transient increase in blood pressure due to being in a medical environment.

WCE is a major problem in clinical practice because:

• It prevents BPs obtained in a clinical setting from being representative of a patient’s “true” BP

• WCE can be > 25 mm Hg in some patients

• People with hypertension may continue exhibit WCE making it difficult to determine when control has been achieved

Blood pressure variability

Almost all patients will experience some degree of alerting response

- **White coat hypertension**: Office BP $>140/90$ mm Hg in a patient whose out of office BP is not elevated

But some will experience none at all…

- **Masked hypertension**: Office BP $< 140/90$ mm Hg in a patient whose out of office BP is $> 140/90$
Blood pressure variability

Additional factors contributing to BP variability:

• Lack of use of standardized BP measurement protocols contributes to BP variability and inaccurate BP measurements
The importance of measuring blood pressure accurately

Why is minimizing variability and standardizing BP technique so important?

1. Accurate BP readings are needed to make sound clinical decisions

2. For office BPs to be predictive of future cardiovascular events (outcomes) they must be representative of a patient’s actual BP
The importance of measuring blood pressure accurately

The leading reason clinicians fail to diagnose Hypertension and treat elevated office BPs is uncertainty about whether the BP is representative of the patient’s “true” BP

• This leads to poor clinical decisions (diagnostic or therapeutic)

The most common factors contributing to uncontrolled hypertension

1. Clinicians miss opportunities to treat patients with BPs $\geq$ 140/90 because of:
   • Failure to make a diagnosis of hypertension
   • Failure to initiate or escalate therapy during an office visit
   • Failure to recommend frequent follow up until BP is controlled

   **CLINICAL INERTIA** = Diagnostic + Therapeutic inertia

2. Patients are non-adherent to treatment plans:
   • Usually due to not taking medications as instructed
1. **Measure blood pressure accurately**
   - increases reliability of BP measurements provides actionable Information to make effective clinical decisions in diagnosing HTN
   - more accurate registries ensure the right people can be targeted with treatment

2. **Act rapidly to manage uncontrolled patients**
   - evidence-based treatment protocol
   - emphasize single pill combination therapy
   - frequent follow up until BP controlled
   - outreach to patients with uncontrolled blood pressures

3. **Partner with patients (families and communities) to promote self-management using**
   - evidence-based communication strategies
   - self-measured blood pressure monitoring (SMBP) otherwise known as home BP monitoring
   - diet and exercise

4. **Use a team approach / Create a culture of quality / Use data to drive improvement**
   - to deliver safer, more effective care
Act Rapidly to Manage Uncontrolled BP

1. Use an evidence-based treatment protocol
2. Emphasize frequent follow up until BP is controlled
3. Use single-pill combinations to improve medication adherence and BP control
Use an evidence-based treatment protocol

1. Provides a systems approach that can be implemented by all members of the care team
2. Like a playbook for the whole team to follow
3. Tells you who needs treatment, what treatment to use, when to change or escalate therapy how soon follow up should occur
4. Keeping protocols simple helps, and they should be adjusted to the needs of a community or population where they are being used
Use Single-pill Combination Therapy
Therapeutic Inertia is an Impediment to Achieving Blood Pressure Control

Individuals in the lowest TI quintile were 33 times more likely to have their BP controlled at the last visit than those in highest quintile.

By multivariable analysis, TI accounted for 19% of total variance in BP control.

If TI decreased from ~7/8 to ~2/3 visits, BP control would increase from the observed 45.1% to a projected 65.9% in 1 year.

What are some reasons for clinical Inertia?
Factors leading to clinical inertia

CLINICIAN

• Failure to initiate treatment
• Failure to titrate to goal
• Failure to recommend follow-up
• Failure to identify and manage comorbid conditions
• Not enough time

Factors leading to clinical inertia

PATIENT
  • Medication side effects
  • Failure to take meds
  • Too many medications
  • Cost of medications
  • Denial of disease
  • Absence of symptoms

Adapted from Milani RC et al J Am Coll Cardiol. 2013; 62: 2185-2187
Factors leading to clinical inertia

HEALTH SYSTEM

- Lack of treatment guideline
- Lack of care coordination
- Poor communication between office staff
- No hypertension registry
- No patient outreach

Adapted from Milani RC et al J Am Coll Cardiol. 2013; 62: 2185-2187
Use the ACT RAPIDLY Assessment Tool to target improvement work

BP high → Did you treat? → Did you reassess & adjust? → Is the patient’s BP controlled?

Interventions to
• reduce clinical uncertainty
• manage competing demands
• engage patients
• prescribe preferred medications

Interventions to
• improve follow-up
• improve follow-through

Interventions to
• assess adherence barriers
• support adherence
• educate patients
• engage patients
# EXERCISE: ACT RAPIDLY Assessment Tool Worksheet

**Review date:**

**Clinician:**

### Visit Date | Patient Identifier (+/- DOB or MR#) | BP at visit | Action Taken (Select all that apply) | Eight - Week Outcome (Select one) | Notes (Select all that apply)
--- | --- | --- | --- | --- | ---
__/__/ |__/__/ | | | | |
__/__/ |__/__/ | | | | |
__/__/ |__/__/ | | | | |
Use your appointment scheduler to find office visits from ~8 weeks earlier
Look for patients with BP >140/90 mmHg
Look at the plan – what was done?
Scan the chart for BP values since the visit – is the BP controlled now?
# Exercise: ACT Rapidly Assessment Tool Worksheet

**Review date:**  
**Clinician:**  

<table>
<thead>
<tr>
<th>Visit Date</th>
<th>Patient Identifier (+/- DOB or MR#)</th>
<th>BP at visit</th>
<th>Action Taken (Select all that apply)</th>
<th>Eight - Week Outcome (Select one)</th>
<th>Notes (Select all that apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>BP unknown</td>
<td>Unsure about &quot;true&quot; BP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Arranged for follow-up BP</td>
<td>BP still high</td>
<td>Competing priorities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prescribed home BP monitor/ABPM</td>
<td>BP controlled</td>
<td>Medication complexity concern</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Increased/added medication</td>
<td></td>
<td>Medication adherence concern</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Counseled diet/lifestyle change</td>
<td></td>
<td>Patient does not want treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td></td>
<td>Other:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Follow-up issue</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Uncontrolled hypertension</td>
</tr>
</tbody>
</table>

|            |                                    |             | None                                | BP unknown                         | Unsure about "true" BP        |
|            |                                    |             | Arranged for follow-up BP           | BP still high                      | Competing priorities          |
|            |                                    |             | Prescribed home BP monitor/ABPM     | BP controlled                      | Medication complexity concern |
|            |                                    |             | Increased/added medication          |                                   | Medication adherence concern  |
|            |                                    |             | Counseled diet/lifestyle change     |                                   | Patient does not want treatment|
|            |                                    |             | Other                               |                                   | Other:                        |
|            |                                    |             |                                     |                                   | Follow-up issue               |
|            |                                    |             |                                     |                                   | Uncontrolled hypertension     |

|            |                                    |             | None                                | BP unknown                         | Unsure about "true" BP        |
|            |                                    |             | Arranged for follow-up BP           | BP still high                      | Competing priorities          |
|            |                                    |             | Prescribed home BP monitor/ABPM     | BP controlled                      | Medication complexity concern |
|            |                                    |             | Increased/added medication          |                                   | Medication adherence concern  |
|            |                                    |             | Counseled diet/lifestyle change     |                                   | Patient does not want treatment|
|            |                                    |             | Other                               |                                   | Other:                        |
|            |                                    |             |                                     |                                   | Follow-up issue               |
|            |                                    |             |                                     |                                   | Uncontrolled hypertension     |
What does clinical inertia look like in practice?

A 75 year-old woman comes in for a BP check. She has known HTN and is on hydralazine (vasodilator) 10 mg four times daily and atenolol (beta-blocker) 25 mg once daily. She has no other medical problems. She reports fatigue.

- BPs have been running 160/95 in the office and at home

What do you do?
What does clinical inertia look like in practice?

Case 4: A 75 year-old woman comes in for a BP check. She has known HTN and is on hydralazine (vasodilator) 10 mg four times daily and atenolol (beta-blocker) 25 mg once daily. She has no other medical problems. She reports fatigue.

**Why clinical inertia may occur:**
- Unsure of medication adherence
- Unsure of true BP
- Possible uncontrolled hypertension

**What you can do:**
- Use an evidence-based communication strategy
- Early follow up can reduce uncertainty
Barriers to Overcoming Clinical Inertia

1. Unreliable blood pressure measurements
2. Lack of USING a treatment protocol
3. Variable treatment adherence
4. Competing factors (# chronic conditions)
5. Patient-physician communication
QUESTIONS?

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