Hypertension Control Drivers: Concept and Evidence
Jeff Brettler, MD

HEARTS Training Workshop
Saint Lucia
May 2023
Agenda

Background

Explanation of key driver concept

Evidence for individual key drivers

Evidence and examples of key drivers at system level
A Call to Action

Systolic BP continues to be the most modifiable risk factor for premature morbidity and mortality globally.

Latin America and the Caribbean:
• BP control: 35% of women, 23% of men
• CVD: 2 million deaths annually

11 countries in the Americas with stagnation or reversal of CVD burden decline

Martinez et al, JCH 2020
High BP control can be achieved

Kaiser SCAL HTN Control 2004 - 2010

Canadian Experience: BP Control 12% to 62% from 1992 to 2016

J Sim et al, Can J Cardiol. 2014;30(5):544-552

Campbell et al. Hypertension Feb 2009
Characteristics of High Performing Health Systems

In addition to focusing on outcome measures:

• Identify key drivers
• Translate key drivers into process measures
• Performance feedback to front-line clinicians and clinics
According to the Donabedian health care quality model, quality measures can be characterized as structure, process or outcome measures.
WHO – New Recommendations 2021

- Threshold for the initiation of pharmacological treatment
- Cardiovascular disease risk assessment
- Specific medication classes and use of FDC
- Target blood pressure
- Frequency of assessment
- Treatment by nonphysician professionals
**Driver - Accurate BP Measurement**

**Recommendation:** Repeat BP when initial BP elevated.

**Evidence:** Reliability of single office BP measurement:
- 34% of initially elevated BPs normalized with recheck
- In 24%, SBP dropped more than 10 mm.\(^1\)

**Opportunity:** BP repeated only 23% of time when initial reading elevated\(^2\)


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\(^1\) Burkhard et al, Heart 2018 Jul 104 (14)

\(^2\) Cooper-DeHoff et al, J Am Heart Assoc. 2021: 10:e022224
Recommendation: Use established protocol with FDC

Evidence:
• Most patients require more than one medication.\(^1\)
• FDCs improve adherence, control, and decrease length of time to achieve control.\(^2\)

Opportunity: FDCs used in only 19% of patients in the US 2013-2016.\(^3\)


\(^1\)Whelton et al, JACC 2018; 71 (19)
\(^2\)Derrington et al, JHum Hypertension 2020; 34 (9)
\(^3\)Derrington et al, Hypertension 2020; 75 (4)
ORIGINAL ARTICLE

Blood Pressure Intervention and Control in the SPRINT

SPRINT Lessons

Intensive group: 62% had SBP < 120, 80% < 130, 90% < 140.

- 2.8 meds needed (vs. 1.8 in standard group); higher dosage range usually needed
- ACEI/ARBs, CCBs, thiazide-type diuretic (chlorthalidone 88%)
- Monthly visits to monitor
- SBP of 120 in SPRINT (AOBP) = 130 in routine office practice. SPRINT patients – high-risk.

- Start treatment with 2 medications
- Use standard WHO recommended BP meds and titrate to higher end of dose range
BLOOD PRESSURE CONTROL DRIVERS AT PRIMARY HEALTH CARE CENTERS

1. 1 Tablet of Telmisartan/Amlodipine 40/5 mg

2. Patient above target after repeat measurement
   1 Tablet of Telmisartan/Amlodipine 80/10 mg
   [1 MONTH]

3. Patient above target after repeat measurement
   1 Tablet of Telmisartan/Amlodipine 80/10 mg
   + ½ Tablet of Chlorthalidone 25 mg
   [1 MONTH]

4. Patient above target after repeat measurement
   1 Tablet of Telmisartan/Amlodipine 80/10mg
   + 1 Tablet of Chlorthalidone 25 mg
   [1 MONTH]

Patient above target:
Refer to the next level of care
FIGURE 1: MANAGEMENT OF ADULT BLOOD PRESSURE (BP)

**BP GOALS**
- Treat adults with confirmed hypertension to a goal BP < 140/90 mm Hg.
- In adults with ASCVD, CKD, age ≥ 75 years, or 10-year ASCVD risk ≥ 10%, consider treating to a goal SBP < 130 mm Hg. (Exclude adults with eGFR<20 from this lower target.)

**ACE Inhibitor / Thiazide Diuretic**
- If ACEI intolerant or pregnancy potential
  - **Thiazide Diuretic**
    - HCTZ 25 mg ⇒ 50 mg
    - OR
    - Chlorthalidone 12.5 mg ⇒ 25 mg
  - If not in control

**For ACEI intolerance due to cough, use ARB**
- Add losartan 25 mg daily
  - ⇒ 50 mg daily ⇒ 100 mg daily
  - Do not combine ACEI and ARB.
  - Pregnancy potential: avoid ARBs

**Calcium Channel Blocker (CCB)**
- Add amlodipine 2.5 mg daily ⇒ 5 mg daily ⇒ 10 mg daily
  - If not in control

**Spironolactone* - Aldosterone Receptor Antagonist (ARA)**
- **Spironolactone** 12.5 mg ⇒ 25 mg daily
  - *If on thiazide AND eGFR ≥ 60 mL/min/1.73 m² AND potassium < 4.5 mmol/L
  - If spironolactone eligibility criteria not met:
    - bisoprolol 2.5 mg ⇒ 5 mg daily ⇒ 10 mg daily
    - Titrake to BP; maintain pulse of > 55
Benefits of a Simplified Combination Medication Protocol

- Decreased daily pill burden
- Improved medication adherence
- Faster BP control; less time exposed to CVD-risk
- Facilitates team-based care including titration by provider other than MD
Combination Pill Use and BP Control – Kaiser SCAL

Figure 4. Combination pill use and hypertension control at Kaiser Permanente Southern California. Since 2005, when the combination of lisinopril/HCTZ was advocated, hypertension control rates have steadily increased, paralleling the proportion of those prescribed the lisinopril/HCTZ combination pill. HCTZ, hydrochlorothiazide; HTN, hypertension.

Sim, J et al. Canadian J of Cardiology 30 (2014)
• 43% initiated combination therapy (35% with ACEI-thiazide)
• Those who initiated combination therapy: more likely to achieve BP control; more likely to stay on medication
Treatment Intensification Driver

- In a recent study of 25 US health systems, when medication was added for uncontrolled BP:
  - SBP decreased by 15 mm Hg
- Cooper-DeHoff et al, J Am Heart Assoc. 2021;10:e022224
Treatment Intensification over Time in US

Figure 1. Prevalence of hypertension treatment intensification in the United States 2005–2012.

Lu, Min J Am Heart Assoc. 2016;5
**Driver – Team-based Care**

**Recommendation:** Medication Titration by non-MD

**Evidence:**
- Team-based care with titration by non-MD most effective implementation strategy
- Global shortage of MDs to treat HTN

**Opportunity:** difficult to quantitate but large

**Support:** WHO 2021 HTN guideline, ACC/AHA 2017 (IA recommendation)

1. Whelton et al, JACC 2018; 71 (19)
2. Derrington et al, JHum Hypertension 2020; 34 (9)
3. Derrington et al, Hypertension 2020; 75 (4)
Figure 2. Adjusted mean net reduction in BP associated with implementation strategies.

<table>
<thead>
<tr>
<th>Implementation Strategy</th>
<th>Net Change In BP (95% CI), mm Hg</th>
<th>Studies, n</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Systolic BP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team-based care with titration by nonphysician</td>
<td>-7.1 (-8.9 to -5.2)</td>
<td>10</td>
</tr>
<tr>
<td>Team-based care with titration by physician</td>
<td>-6.2 (-8.1 to -4.2)</td>
<td>19</td>
</tr>
<tr>
<td>Multilevel strategy without team-based care</td>
<td>-5.0 (-8.0 to -2.0)</td>
<td>8</td>
</tr>
<tr>
<td>Health coaching</td>
<td>-3.9 (-5.4 to -2.3)</td>
<td>38</td>
</tr>
<tr>
<td>Electronic decision-support systems</td>
<td>-3.7 (-5.2 to -2.2)</td>
<td>4</td>
</tr>
<tr>
<td>Home BP monitoring</td>
<td>-2.7 (-3.6 to -1.7)</td>
<td>26</td>
</tr>
<tr>
<td>Provider training</td>
<td>-1.4 (-3.6 to 0.7)</td>
<td>5</td>
</tr>
<tr>
<td>Audit and feedback</td>
<td>-0.8 (-2.1 to 0.5)</td>
<td>2</td>
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<tr>
<td><strong>Diastolic BP</strong></td>
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<tr>
<td>Team-based care with titration by nonphysician</td>
<td>-3.1 (-4.1 to -2.2)</td>
<td>10</td>
</tr>
<tr>
<td>Multilevel strategy without team-based care</td>
<td>-2.9 (-5.4 to 0.4)</td>
<td>8</td>
</tr>
<tr>
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<td>16</td>
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<td>37</td>
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<td>-1.5 (-3.23 to -0.8)</td>
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<tr>
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<td>-1.0 (-2.2 to 0.1)</td>
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<tr>
<td>Audit and feedback</td>
<td>-0.6 (-1.3 to 0.1)</td>
<td>2</td>
</tr>
</tbody>
</table>

Mean net reductions were estimated using generalized estimating equations and adjusted for sex, age, baseline systolic (or diastolic) BP, trial duration, type of control group, and all other intervention strategies. Boxes are weighted by sample size. BP = blood pressure.
Global Gap in HTN Clinic Visits

Neupane et al, Hypertension 2021; 78
Structured, Team-Based Care Interventions for Hypertension Control

<table>
<thead>
<tr>
<th>COR</th>
<th>LOE</th>
<th>Recommendation for Structured, Team-Based Care Interventions for Hypertension Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>A</td>
<td>A team-based care approach is recommended for adults with hypertension.</td>
</tr>
</tbody>
</table>
WHO Hypertension Guideline 2021

8. RECOMMENDATION ON TREATMENT BY NONPHYSICIAN PROFESSIONALS

WHO suggests that pharmacological treatment of hypertension can be provided by nonphysician professionals such as pharmacists and nurses, as long as the following conditions are met: proper training, prescribing authority, specific management protocols and physician oversight.

Conditional recommendation, low-certainty evidence

Implementation remarks:

- Community health care workers (HCWs) may assist in tasks such as education, delivery of medications, blood pressure (BP) measurement and monitoring through an established collaborative care model. The scope of hypertension care practiced by community HCWs depends on local regulations and currently varies by country.

- Telemonitoring and community or home-based self-care are encouraged to enhance the control of BP as a part of an integrated management system, when deemed appropriate by the treating medical team and found feasible and affordable by patients.

- Physician oversight can be done through innovative methods such as telemonitoring or similar to ensure access to treatment is not delayed.
Treatment Intensification Rates by Visit Type KP SCAL data July 2021
Encounter Interval Driver - Improved Time to Control

- Retrospective cohort study of over 5,000 patients with diabetes and HTN in Massachusetts
- BP of patients with average interval between encounters ≤ one month normalized at 1.5 months compared to 12.2 months for the encounter interval greater than one month (p < 0.0001 for all).

Figure 1. Encounter Interval and Time to Blood Pressure Normalization
Kaplan-Meier curves for time to normalization of blood pressure during a period of continuously elevated blood pressure were plotted for different average encounter intervals. Distinct periods of elevated blood pressure (from the first elevated to the first normal blood pressure) for the same patient were analyzed separately.

Turchin et al, Hypertension. 2010 July; 56(1): 68–74
Encounter Interval Driver – Improved Outcomes

Retrospective cohort study of primary care practices in the UK in 88K patients with HTN. Delays in titration > 1.4 months associated with increased CV events or death

Xu et al, BMJ 2015;350
### Randomized Controlled Trials Data

#### Reduction of CV outcomes with Renin Angiotensin System blockers-based therapies achieving early BP control trials

<table>
<thead>
<tr>
<th>Trial</th>
<th>Number of patients</th>
<th>Timeframe to reach BP &lt;140/90 mmHg</th>
<th>Mean BP reduction (mm Hg)</th>
<th>CV outcomes</th>
<th>Reduction of CV outcomes in early BP response (%)</th>
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</thead>
<tbody>
<tr>
<td>VALUE</td>
<td>14,400</td>
<td>6 months</td>
<td>12.3/6.1</td>
<td>Total CV events</td>
<td>Stroke</td>
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<td></td>
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<td>All cause death</td>
<td>12</td>
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<td>10</td>
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<td>ALLHAT</td>
<td>42,418</td>
<td>6 months</td>
<td>6.7/4.4</td>
<td>Total CV events</td>
<td>Stroke</td>
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<td>All cause death</td>
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<tr>
<td>ASCOT-BPLA</td>
<td>19,342</td>
<td>1 year</td>
<td>21.9/11.7</td>
<td>Fatal and non-fatal</td>
<td>Total CV events</td>
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<td>stroke</td>
<td>All-cause mortality</td>
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<td>SCOPE</td>
<td>4,964</td>
<td>3 months</td>
<td>21.7/10.8</td>
<td>Fatal and non-fatal</td>
<td>stroke</td>
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<td>24</td>
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</tbody>
</table>

Volpe, et al. Int J of Cardiology 254, 2018
Medication Refill Interval

• 30 vs 90-day refill supply:

• Nonadherence was 40% less likely to occur in those patients who received 90-day supplies of chronic medications

• Hermes et al, Adherence to chronic medication therapy associated with 90-day supplies compared with 30-day supplies. J Manag Care Pharm. 2010;16:141-142.
CVD Risk Assessment

- SPRINT clinical trial: benefit of more intensive treatment in high risk

- Meta-analysis of individual participant data from 11 trials and 48K participants: CVD risk strategy avoided more CV events than BP strategy alone*

- WHO 2021: target SBP < 130 in high-risk patients (CVD, DM, CKD)

- *Karmali et al, PLOS Medicine 2018; 15(3)
CVD Risk Assessment

The Blood Pressure Lowering Treatment Trialists’ Collaboration – Lancet 2014; 384
System for Performance Evaluation with Feedback

- Key finding of high-performing systems
- Only way to evaluate if key drivers implemented successfully.
- Feedback must be frequent and drilled down to individual physicians and staff
Scorecards – BP control
Repeat BP Report – March 2022
## Repeat BP Report – March 2022

<table>
<thead>
<tr>
<th>Urgent Care</th>
<th>18</th>
<th>17</th>
<th>94%</th>
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<td>A</td>
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<td>7</td>
<td>70%</td>
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<td>27</td>
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<td>81%</td>
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<td>11</td>
<td>11</td>
<td>100%</td>
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</tbody>
</table>
Treatment Intensity Rates by Medical Center

![Graph showing treatment intensity rates by medical center. The graph includes bars representing different medical centers with varying intensification rates.]

[Graph credit: PAHO]
IN THE AMERICAS

Treatment Intensity Rates by Physician

Individual physician TI rates at BHC clinic for 3-month period March – May 2021
ORIGINAL RESEARCH


Rhonda M. Cooper-DeHoff, PharmD, MS; Valy Fontil, MD, MAS; Thomas Carton, PhD; Alanna M. Chamberlain, PhD; Jonathan Todd, PhD; Emily C. O’Brien, PhD; Kathryn M. Shaw, MPH; Myra Smith, MPH; Sujung Choi, PhD; Ester K. Nilliss, PhD; Daniel Ford, MD, MPH; Kristen M. Tecson, PhD; Princess E. Dennar, MD; Faraz Ahmad, MD, MS; Shenghui Wu, MD, PhD; James C. McClay, MD, MS; Kristen Azar, RN, MSN/MPH; Rajbir Singh, MBBS; Madelaine Faulkner Modrow, MPH; Christina M. Shay, PhD; Michael Rakotz, MD; Gregory Wocniak, PhD; Mark J. Fletcher, MD, MPH
<table>
<thead>
<tr>
<th>No.</th>
<th>Name (range)</th>
<th>Overall, weighted average(^1) (range(^2))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blood pressure control, (&lt;140/&lt;90) mm Hg, % of patients</td>
<td>62% (44%–74%)</td>
</tr>
<tr>
<td>2</td>
<td>Blood pressure control to 2017 Hypertension Clinical Practice Guidelines goal, (&lt;130/&lt;80) mm Hg, % of patients</td>
<td>30% (20%–38%)</td>
</tr>
<tr>
<td>3</td>
<td>Improvement in blood pressure, % of patients</td>
<td>29% (17%–41%)</td>
</tr>
<tr>
<td>4</td>
<td>Confirmatory repeated blood pressure measurement, % of visits</td>
<td>23% (0%–100%)</td>
</tr>
<tr>
<td>5</td>
<td>Medication intensification after uncontrolled blood pressure, % of visits</td>
<td>12% (0.6%–25%)</td>
</tr>
<tr>
<td>6</td>
<td>Repeat visit in 4 weeks after uncontrolled blood pressure, % of visits</td>
<td>35% (15%–47%)</td>
</tr>
<tr>
<td>7</td>
<td>Average SBP reduction after medication intensification, mm Hg±SD</td>
<td>15±20 (5–18)</td>
</tr>
<tr>
<td>8</td>
<td>Prescription of a CCB or thiazide or thiazide-like diuretic among Black patients prescribed at least one medication, % of patients</td>
<td>75% (32%–80%)</td>
</tr>
<tr>
<td>9</td>
<td>Prescription of fixed-dose combination product among patients prescribed at least 2 classes of medications, % of patients</td>
<td>25% (0%–90%)</td>
</tr>
<tr>
<td>Blood pressure control metrics</td>
<td>Overall, weighted average</td>
<td>Asian, not Hispanic</td>
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<td>15±19</td>
</tr>
<tr>
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<td>75% (32%–60%)</td>
<td>N/A</td>
</tr>
<tr>
<td>Prescription of fixed-dose combination product among patients prescribed at least 2 classes of medications, % of patients</td>
<td>25% (0%–90%)</td>
<td>22%</td>
</tr>
</tbody>
</table>
Circulation: Cardiovascular Quality and Outcomes

ORIGINAL ARTICLE

Clinic-Based Strategies to Reach United States Million Hearts 2022 Blood Pressure Control Goals
A Simulation Study

Bellows, Moran, Fontil. June 2019
### Table 1. Comparison of Key Hypertension Process Inputs Across Simulated Interventions.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Usual Care</th>
<th>Best Observed Values</th>
<th>Perfect Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability of Adhering to Last Antihypertensive Medication at One Year</td>
<td>57.0%(^{17-22})</td>
<td>75.6%(^{22})</td>
<td>100.0%</td>
</tr>
<tr>
<td>Probability of Intensifying Antihypertensive Medication When:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adding/titrating first antihypertensive medication during simulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systolic blood pressure ≥160 mm Hg or blood pressure ≥140/90 mm Hg with diabetes or chronic kidney disease</td>
<td>33.3%(^{13-15})</td>
<td>44.0%(^{14})</td>
<td>100%</td>
</tr>
<tr>
<td>Systolic blood pressure is uncontrolled but &lt;160 mm Hg or blood pressure is uncontrolled but &lt;140/90 mm Hg with diabetes or chronic kidney disease</td>
<td>20.8%(^{11,12})</td>
<td>31.0%(^{11})</td>
<td>100%</td>
</tr>
<tr>
<td>Adding/titrating additional antihypertensive medications</td>
<td>13.0%(^{16})</td>
<td>19.5%(^{16})</td>
<td>100%</td>
</tr>
<tr>
<td>Return Visit Interval When Blood Pressure Uncontrolled</td>
<td>~13.8 weeks(^{12})</td>
<td>1 week(^{12})</td>
<td>1 week</td>
</tr>
</tbody>
</table>

Notes: The table shows the model inputs for the key hypertension management processes, best observed values were preferentially derived from the highest reported mean or calculated using sample size or variance estimates as available. Perfect care values were based on the best input possible for each parameter.
Only 46% of patients who present with uncontrolled BP at the beginning of 2018 would achieve BP control by the end of 2021 under usual care.

80% control rate within 4 years possible with the following: 70% medication adherence, 30% probability of treatment intensification, and having follow-up visits within 4 weeks after an uncontrolled office BP.

Increasing treatment intensification had the most significant impact on achieving 80% BP control.

When the probability of intensification was 62% (usual care 13.0%-33.3%), > 80% of patients achieved BP control, even when patient medication adherence and the return visit interval were kept at usual care.
Measure Accurately, Act Rapidly, and Partner with Patients (2018) – a Classic QI and Key Driver Study

Hypertension Primary Care

Improving Hypertension Control in Primary Care With the Measure Accurately, Act Rapidly, and Partner With Patients Protocol Results at 6 and 12 Months

Brent M. Egan, Susan E. Sutherland, Michael Rakotz, Jianing Yang, R. Bruce Hanlin, Robert A. Davis, Gregory Wozniak

Egan et al, Hypertension. 2018;72:1320–1327
Measure Accurately, Act Rapidly, and Partner with Patients

MAP implemented in 16 practices, 16,000+ hypertensive patients in South Carolina: BP measurement, treatment intensification, monthly dashboard

BP control improved from 64.4% at baseline to 74.3% (P<0.001) at 6 and 73.6% (P<.001) at 12 months

Among adults with uncontrolled baseline BP and no medication changes (n=3654), measure accurately resulted in 11.1/5.1 mm Hg lower BP

During the first 6 months of MAP, therapeutic inertia fell (52.0% versus 49.5%; P=0.01)
KPNC vs. National and California HTN Control

- KPNC: 90%
- CA: 65%
- National: 64%
- 2001: 44%
- 2002: 55%
- 2003: 64%
- 2004: 65%
- 2005: 80%
- 2006: 84%
- 2007: 88%
- 2008: 90%
- 2009: 90%
- 2010: 90%
- 2011: 90%
- 2012: 90%
- 2013: 90%
Kaiser Story - What Happened in 2005?

- **Combination therapy** with lisinopril-HCTZ FDC became 1\textsuperscript{st} step of national KP algorithm
- Widespread implementation of 2-4 week follow-up BP checks with medical assistant or LVN.

Sim, J et al. Canadian J of Cardiology 30 (2014)
Can Kaiser Model Work in Other Settings?

Adapting and evaluating a health system intervention from Kaiser Permanente to improve hypertension management and control in a large network of safety-net clinics

Valy Fontil, MD, MAS\textsuperscript{1,3}, Reena Gupta, MD\textsuperscript{1}, Nathalie Moise, MD, MS\textsuperscript{1,4}, Ellen Chen, MD\textsuperscript{5}, David Guzman, MS\textsuperscript{1,3}, Charles E McCulloch, PhD\textsuperscript{2}, and Kirsten Bibbins-Domingo, PhD, MD, MAS\textsuperscript{1,2,3}

Circ Cardiovasc Qual Outcomes. 2018 July ; 11(7)
Key elements of the Kaiser Permanente Northern California (KPNC) hypertension program adopted in Bring it Down San Francisco

<table>
<thead>
<tr>
<th>Program components</th>
<th>KPNC Hypertension Program</th>
<th>Bring it Down San Francisco</th>
</tr>
</thead>
</table>
| Evidence-based treatment protocol | Designed to accomplish  
  • simple and fast titration of BP treatment to goal  
  • emphasis on increased use of fixed-dose combination pharmacotherapy, and  
  • guidance for management of resistant HTN | Protocol modified to account for:  
  • drug coverage and affordability,  
  • patient complexity, and provider preferences that are pertinent to safety-net patient populations  
  • New evidence and clinical guidelines |
| BP check visits led by non-physician professional staff | Led by medical assistants | Led by nurses and pharmacists  
  • The type of allied health professional or entry-level staff used varied by clinic site based on capacity. |
| Standard BP measurement protocol | Kaiser Permanente already had standardized methods for BP measurement | Partnered with nurse leaders to design a standardized BP measurement protocol |
| Hypertension patient registry | Used to generate performance reports and highlight high-performing sites | Used to generate performance reports |
| Performance reports | Initially distributed every 3 months and then available by query at any time to authorized individuals. | Clinic-level reports, stratified by race, shared with clinic leaders monthly  
  • Hypertension registry available to clinic leaders to generate their own reports and monitor progress |
Adjusted BP control by race over 18 months at 11 safety-net clinics (16K patients)

- Mixed effect logistic regression adjusted for age and gender
Eficacia de una estrategia estandarizada y simplificada para tratamiento de la hipertensión arterial en Chile: la Iniciativa HEARTS en las Américas

Luis Michea,1 Luis Toro,2 Natali Alban,3 Daisy Contreras,3 Patricia Morgado,4 Melanie Paccot,5 Maria Cristina Escobar,6 y Eduardo Lorca7

Forma de citar

Longitudinal observational study in 2 primary family health care centers in Santiago: standardized and simplified protocol versus the usual protocol

Standardized protocol: initiation of treatment immediately after confirming the diagnosis and standardized treatment with at least 2 BP meds in a single pill, taken daily.

Follow-up at 1 year: adherence to treatment and blood pressure control (goal < 140/90 mmHg).
Results of Implementation of Standardized Protocol in Chile

1,490 patients: 562 who used the standardized and simplified protocol, and 928 who were treated with the usual protocol (family health unit 1: 650, family health unit 2: 278).

At 1 year of follow-up, patients in the standardized and simplified protocol group:
• Had a higher proportion BP control - 65% versus 37% and 41%, p<0.001.
• Had a higher percentage of adherence to treatment, compared to those who used the usual protocol - 71% versus 18% and 23%, p<0.001.
Conclusions

To improve BP control:

• Identify key drivers of BP control; translate those key drivers into process measures; use those process measures in a performance feedback system with front-line clinicians and clinics.

• **Key drivers are evidence-based and guideline-supported.**

• **Identifying key drivers and process measures is not an academic exercise. They are practical and essential tools for PHCs and systems to improve BP control rates.**
Drivers Part 2 Tomorrow:

Hearts as a quality improvement platform - implementing hypertension control drivers in primary health care settings.

- HEARTS in the Americas Innovation Group
- Scorecards – HEARTS Process Maturity and HEARTS Performance Indices
- Implementation and Audits
• Introduction/Overview of the Course. Key Hypertension Control Drivers Overview
• Module 1: Overview of quality improvement
• Module 2: Accurate BP Measurement
• Module 3: Medication Titration
• Module 4: Follow-Up Blood Pressure Check
• Module 5: Utilization of Scorecards for Quality Improvement
• Module 6: Community Outreach
• Module 7: Home Blood Pressure Monitoring
• Special module: COVID-19, Hypertension Control and Cardiovascular Disease
Thank you!

Questions:
Jeffrey.W.Brettler@kp.org