

# HYPERTENSION INTERVENTIONS

Maribel Salas MD, DSc, FACP, FISPE  
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## Key Concepts...

### Adherence

- From the Latin word *adhaerere*, which means to cling to, keep close, or remain constant. It implies the tenacity that patients need to achieve in sticking to a therapeutic regimen.



Br J Clin Pharmacol. 2007 Apr; 63(4): 383-384.

### Persistence. Definition

- The time of continuous therapy:
  - Time from initiation of therapy to discontinuation of therapy
  - The length of time between initiation and the last dose immediately preceding discontinuation

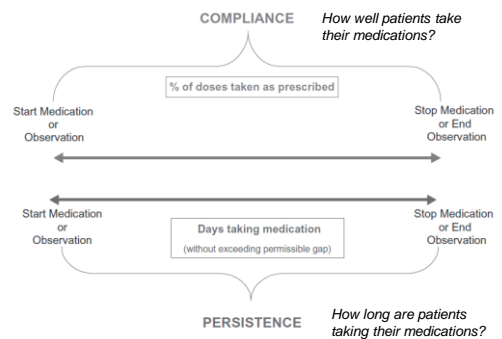
	t=0	t=1	t=2	t=3	t=4	t=5
P1	X	X	X	X	X	X
P2	X	X	X	X		

Value Health 2000;3:417-26; Value Health 2005;8:495-505.

### Adherence/Compliance vs. Persistence

- Two different constructs
- Medication adherence (compliance) refers to the degree or **extent of conformity to the recommendations** about day-to-day treatment by the provider with respect to the **timing, dosage, and frequency.**
- Medication persistence refers to the **act of continuing** the treatment for the prescribed duration. It may be defined as "**the duration of time from initiation to discontinuation of therapy.**"

Value Health. 2008 Jan-Feb;11(1):44-7.

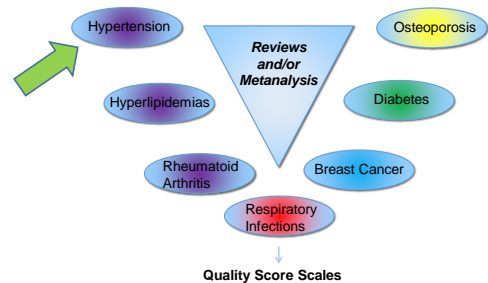


Value Health. 2008 Jan-Feb;11(1):44-7.

## INTERVENTIONS OF COMPLIANCE (ADHERENCE). HYPERTENSION AS AN EXAMPLE ISPOR GROUP: DETERMINANTS OF COMPLIANCE & PERSISTENCE WORKING GROUP

Maribel Salas (Chair), Femida Gwadry-Sridhar, Lincy Lal, Anuja Roy, Elizabeth Manias, Joanne LaFleur, Veronica Decker, Sangeeta Budhia, John Zeber, Dyfrig Hughes, Judy Shinogle, Jasmanda Wu, Monali Bhosle, Andrew M. Peterson, Peter Dale

## Systematic Review of Interventions to Improve Compliance



## Main Methodological Findings

- Interventions were not guided by conceptual model of the determinants of non adherence
- Interventions were not validated
- Interventions provided limited information on different adherence components (initiation, implementation and discontinuation)
- There is limit description of interventions
- The quantification and measurement of medication adherence were inconsistent (e.g. qualitative measure –adherence yes/no; quantitative – continuous measure)

Value in Health, 2013, 16: 863-871

## Continuation....

- Components of medication adherence were inadequately described
- Studies did not measure BP or other clinical biomarker
- Scales to measure adherence were inconsistent across studies (self-reporting to electronic monitoring devices)
- Adherence rates and blood pressure were poorly reported.
- Limited information reported on dropouts and loss to follow-up

Value in Health, 2013, 16: 863-871

## Conclusions from RCT...

- **No single intervention** to improve patient compliance is consistently effective
- Adherence/Compliance is a **multi-factorial issue**
- Interventions should target multiple components: educational, structural, and organization of the health care system.
- The most effective interventions are those focused on: **improving clinical interactions, involving patients in healthcare decisions, promoting patient education and self-management, and improvements at the system level**
- More quantitative information reported in RCT will allow more robust analysis.

## AIDES Method

- Derived from a metaanalysis of 153 studies of interventions to improve adherence, where **combined cognitive behavioral and affective interventions were more effective than single interventions**
- Method for improving adherence to medications:

	Action	Activity
<b>A</b>	Assessment	Assess all Medications
<b>I</b>	Individualization	Individualize the regimen for a patient
<b>D</b>	Documentation	Provide written documentation
<b>E</b>	Education	Provide accurate and continuing education tailored to the needs of the individual
<b>S</b>	Supervision	Provide continuing supervision of the regimen

### Culturally Appropriate Storytelling to Improve Blood Pressure: a Randomized Trial.

Houston TK, Allison JJ, Sussman M, Hom W, Holt CL, Trobaugh J, Salas M, Pisu M, Cuffee YL, Larkin D, Person SD, Barton B, Kiefe CJ, Hullett S.

- Storytelling is emerging as a powerful tool for health promotion in vulnerable populations. However, these interventions remain largely untested in rigorous studies.
- To test an interactive storytelling intervention involving DVDs.
- Randomized, controlled trial in which comparison patients received an attention control DVD. Separate random assignments were performed for patients with controlled or uncontrolled hypertension. (ClinicalTrials.gov registration number: NCT00875225)
- African Americans with hypertension from an inner-city safety-net clinic in the southern United States were included. 3 DVDs that contained patient stories. Storytellers were drawn from the patient population.
- Outcomes were differential change in blood pressure for patients in the intervention vs. the comparison group at baseline, 3 months, and 6 to 9 months.
- 299 African American patients were randomly assigned between December 2007 and May 2008, 76.9% were retained throughout the study, 71.4% were women, and the mean age was 53.7 years. Baseline mean systolic and diastolic pressures were similar in both groups. Among patients with **baseline uncontrolled hypertension, reduction favored the intervention group at 3 months for both systolic (11.21 mm Hg [95% CI, 2.51 to 19.9 mm Hg]; P = 0.012) and diastolic (6.43 mm Hg [CI, 1.49 to 11.45 mm Hg]; P = 0.012) blood pressures.**
- The storytelling intervention produced substantial and significant improvements in blood pressure for patients with baseline uncontrolled hypertension.
- Funding: Finding Answers: Disparities Research for Change, Robert Wood Johnson Foundation.

Ann Intern Med. 2011 Jan 18;154(2):77-84.

Subgroup and Measure	Baseline	3 Months	6-9 Months
<b>All patients</b>			
Patients, n	299	231	231
Systolic blood pressure, mm Hg			
Comparison	132.80	134.12	138.42
Intervention	133.18	128.03	132.38
Diastolic blood pressure, mm Hg			
Comparison	76.19	78.56	81.27
Intervention	76.89	76.21	79.30
<b>Controlled hypertension at baseline</b>			
Patients, n	172	136	138
Systolic blood pressure, mm Hg			
Comparison	120.37	125.56	130.43
Intervention	117.63	121.70	127.21
Diastolic blood pressure, mm Hg			
Comparison	70.89	75.17	78.31
Intervention	69.05	73.52	75.59
<b>Uncontrolled hypertension at baseline†</b>			
Patients, n	123	93	89
Systolic blood pressure, mm Hg			
Comparison	153.06	147.16	149.84
Intervention	152.35	135.24	137.19
Diastolic blood pressure, mm Hg			
Comparison	84.92	83.96	85.70
Intervention	86.62	79.23	83.18

\* Blood pressure measurements were obtained according to a protocol established by the World Health Organization. Unadjusted means were taken from longitudinal data analyses based on random-effects models that nested repeated blood pressure measurements within patients.  
† Defined by the Seventh Report of the Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure.

Mean Systolic and Diastolic Blood Pressures, by Subgroup, Ascertainment Time, and Hypertension Control Status at Baseline\*

Ann Intern Med. 2011;154:77-84.

### Change Over Time in Mean Blood Pressure for the Intervention Versus Comparison Groups

Subgroup and Measure	Baseline to 3 Months		Baseline to 6-9 Months	
	Estimated Regression Coefficient (95% CI)*	P Value	Estimated Regression Coefficient (95% CI)*	P Value
<b>All patients</b>				
Systolic blood pressure	6.43 (1.29 to 11.76)	0.014	6.41 (1.04 to 11.77)	0.019
Diastolic blood pressure	3.05 (-0.10 to 6.21)	0.058	2.66 (-0.60 to 5.94)	0.109
<b>Controlled hypertension at baseline</b>				
Systolic blood pressure	1.12 (-4.71 to 6.95)	0.71	0.44 (-5.74 to 6.62)	0.89
Diastolic blood pressure	-0.19 (-3.39 to 3.55)	0.92	0.88 (-3.10 to 4.86)	0.67
<b>Uncontrolled hypertension at baseline</b>				
Systolic blood pressure	11.21 (2.51 to 19.91)	0.012	11.9 (2.27 to 20.99)	0.007
Diastolic blood pressure	6.43 (1.40 to 11.45)	0.012	4.22 (-1.07 to 9.52)	0.119

\* Positive differences indicate greater blood pressure reduction in the intervention group than in the comparison group. Unadjusted means and 95% CIs are from longitudinal data analyses based on random-effects models that nested repeated blood pressure measurements within patients.

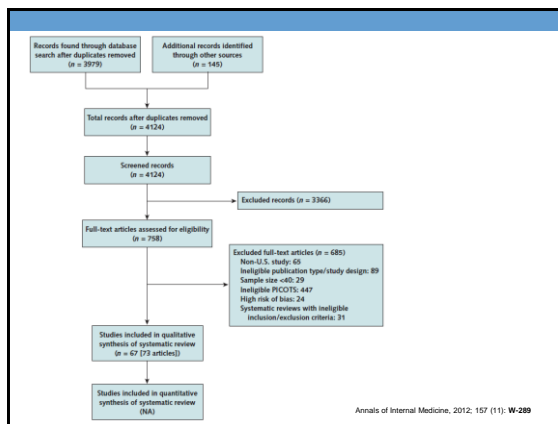
Ann Intern Med. 2011;154:77-84.

### OTHER INTERVENTIONS OF COMPLIANCE (ADHERENCE)

### Interventions to improve adherence to self-administered medications for chronic diseases in the United States: a systematic review. Viswanathan M, Golin CE, Jones CD, et al.

- To assess the comparative effectiveness of patient, provider, systems, and policy interventions that aim to improve medication adherence for chronic health conditions in the US
- Peer-reviewed publications from MEDLINE and the Cochrane Library indexed through 4 June 2012 and additional studies from reference lists and technical experts.
- Randomized, controlled trials of patient, provider, or systems interventions to improve adherence to long-term medications and nonrandomized studies of policy interventions to improve medication adherence.
- From 4124 eligible abstracts, **62 trials of patient-, provider-, or systems-level interventions evaluated 18 types of interventions**; another 4 observational studies and 1 trial of policy interventions evaluated the effect of reduced medication copayments or improved prescription drug coverage. Clinical conditions include hypertension, heart failure, depression, and asthma. Interventions include policy interventions to reduce copayments or improve prescription drug coverage, systems interventions to offer case management, and patient-level educational interventions with behavioral support.
- **Reduced out-of-pocket expenses, case management, and patient education with behavioral support all improved medication adherence** for more than 1 condition. Evidence is limited on whether these approaches are broadly applicable or affect long-term medication adherence and health outcomes.

Ann Intern Med. 2012 Dec; 4:157(11):785-95.



Annals of Internal Medicine. 2012; 157 (11): W-289



### EquiPP: Store Selection of Goal Set

Getting Started:  
Select CMS  
Threshold  
(5-Star Goals)

Taking  
Performance to  
the Next Level:  
Select Top 20%

### EquiPP: Pharmacy Performance Report

Pharmacy	Target	Performance	Score	Score	Score
Pharmacy A	100	85.3%	85.3%	85.3%	85.3%
Pharmacy B	93	92.4%	92.4%	92.4%	92.4%
Pharmacy C	213	6.1%	6.1%	6.1%	6.1%
Pharmacy D	131	82.4%	82.4%	82.4%	82.4%

### Action Steps

- What?
  - Patient identification
- How?
  - Within workflow
  - Outside of workflow
  - Completing targeted interventions
  - Pharmacy management system reporting
  - Vendor solutions
- Resources
  - Measure-specific HRM list
  - Patient target lists

**ACTION STEPS**

1. Monitor your pharmacy's specific performance with EquiPP
  - Enroll if you haven't already — included in Health Mart and AccessHealth membership!
  - Check your Pharmacy Performance Report monthly
2. Utilize your Quality Improvement Action Plan to begin taking action in the next 30 days
  - Complete available Medication Therapy Management Case
  - Mirova: [http://www.mirova.com/us\\_pharmacists](http://www.mirova.com/us_pharmacists) or 866.218.6649
  - Outcomes: <http://www.outcomespharmacy.com> or 915.237.0001
- 3.

- What?
  - Discussion of potential risks with patient
- How?
  - Leveraging behavioral coaching techniques
  - Open ended questions
- Resources
  - Coaching guides
  - Behavioral coaching education
- What?
  - Prescriber communication
- How?
  - Consider leveraging a prescriber fax template
  - 3-day follow-up call
  - Special outreach to select prescribers office
- Resources
  - Review evidence-based guidelines
  - Fax templates

### Improved Adherence Rates and Clinical Outcomes of an Integrated, Closed-Loop, Pharmacist-Led Oral Chemotherapy Management Program

Muluneh B, Schneider M, Faso A, et al.

- To address the growing use of oral anticancer therapy, an integrated, closed-loop, pharmacist-led oral chemotherapy management program was created within an academic medical center.
- An integrated, **closed-loop, pharmacist-led oral chemotherapy management program** was established. From September 2014 until June 2015, demographic information, rates of adherence, patient understanding of treatment, pharmacist interventions, patient and provider satisfaction, and molecular response rates in patients with chronic myeloid leukemia (CML) were collected.
- After full implementation, 107 patients were enrolled in an oral chemotherapy management program from September 2014 until June 2015. All patients were educated before starting oral chemotherapy, and using pre- and post assessment tests, comprehension of oral chemotherapy treatment increased from 43% to 95%. **Patient-reported adherence was 86% and 94.7% for the GI/breast and malignant hematology patient populations, respectively, and these were validated with medication possession ratio, revealing adherence rates of 85% and 93.9% for the GI/breast and malignant hematology patient populations, respectively.** A total of 350 encounters with a clinical pharmacist and 318 adverse effects were reported, which led to 235 interventions. This program led to a higher major molecular response rate (83%) in our CML population compared with published clinical trials (average major molecular response rates, 40% and 60% with 1- and 2-year follow-up, respectively).
- An innovative model was developed and resulted in **improved patient knowledge regarding oral chemotherapy, improved adherence rates that exceeded nationally established thresholds, and superior major molecular response outcomes for patients with CML compared with published literature.** As a result, this model has produced the gold standard in managing patients receiving oral chemotherapy.

*J of Oncology Practice, May 2018*

### In Conclusion....