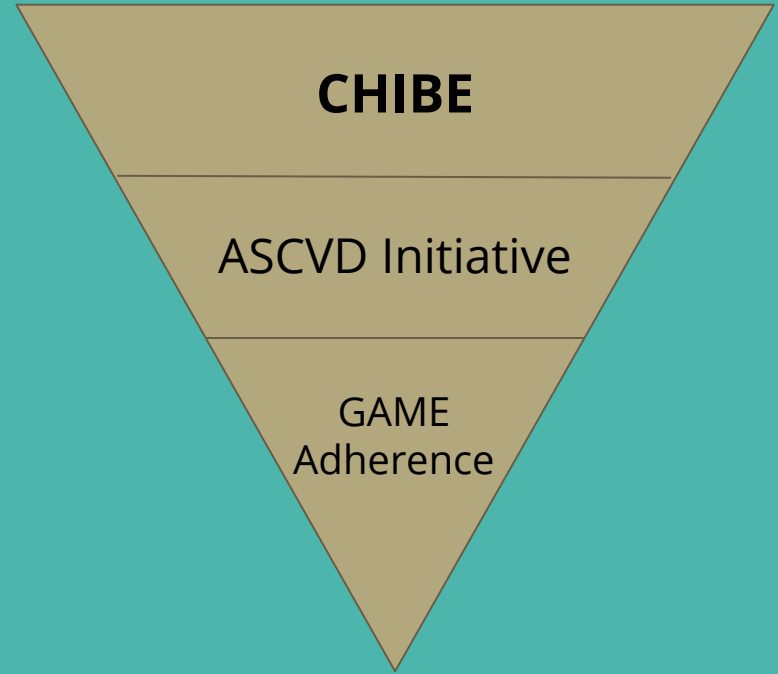

Gamification and Social Incentives to Augment **Medication (GAME)** Adherence

— Devin Brown —

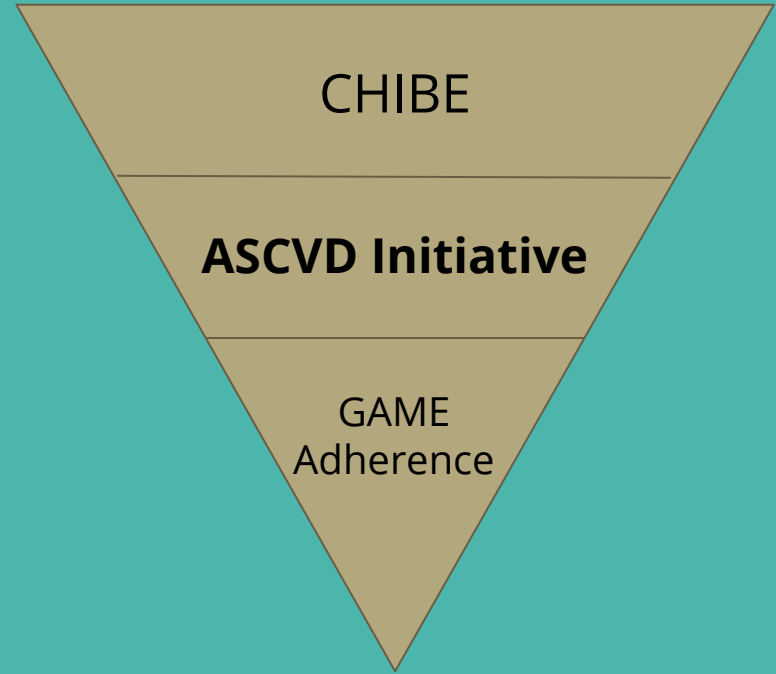
Mentors:
Dr. Alex Fanaroff & Dr. Kevin Volpp

Center for Health Incentives and Behavioral Economics (CHIBE)

Mission: use behavioral economics to
reduce disease burden of major U.S.
public health issues

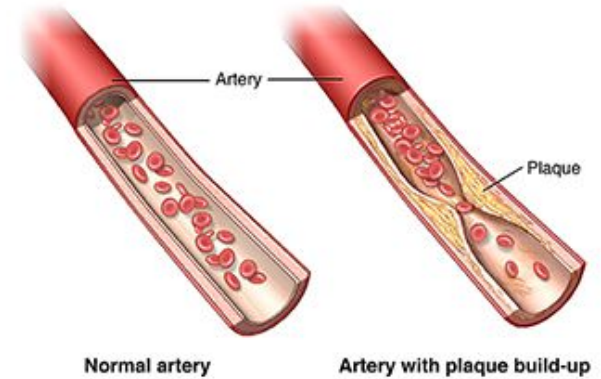


Atherosclerotic Cardiovascular Disease (ASCVD) Initiative



Atherosclerotic Cardiovascular Disease

Source: Johns Hopkins Medicine

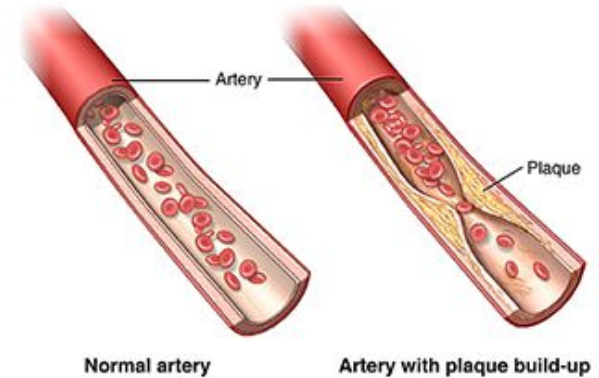


- Group of conditions caused by a build-up of plaque in arterial walls
 - Conditions include, but not limited to, heart attacks, ischemic stroke, and peripheral artery disease

Atherosclerotic Cardiovascular Disease

Source: Johns Hopkins Medicine

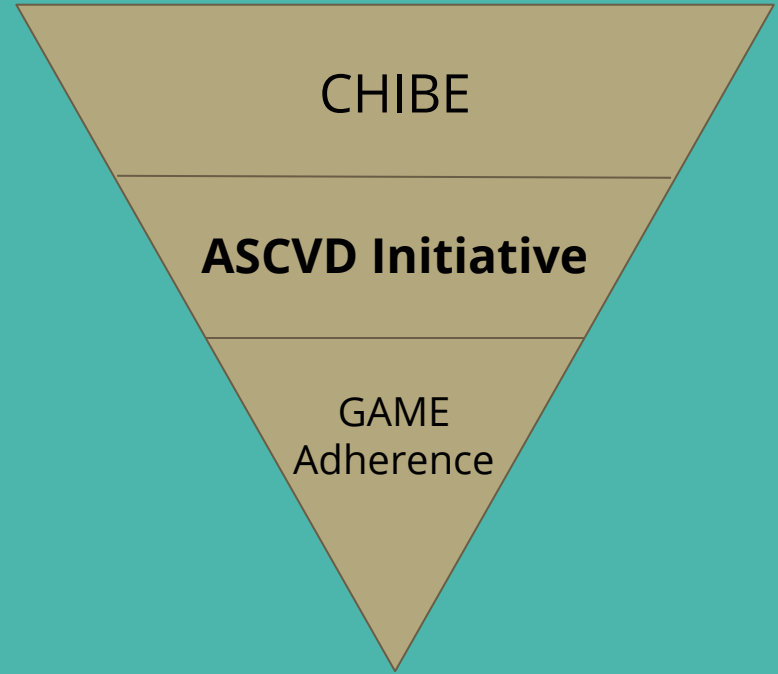
- Significance:
 - Leading cause of morbidity and mortality in the U.S.
 - African American patients = greater prevalence, lower control, and 2x of risk of stroke
 - Similar in low SES communities
 - Major risk factors:
 - Hyperlipidemia and hypertension
- Control
 - Medication adherence, unhealthy behaviors, treatment vs. prevention
 - Low cost cardiovascular drugs = potential to reduce risk by 62-88%



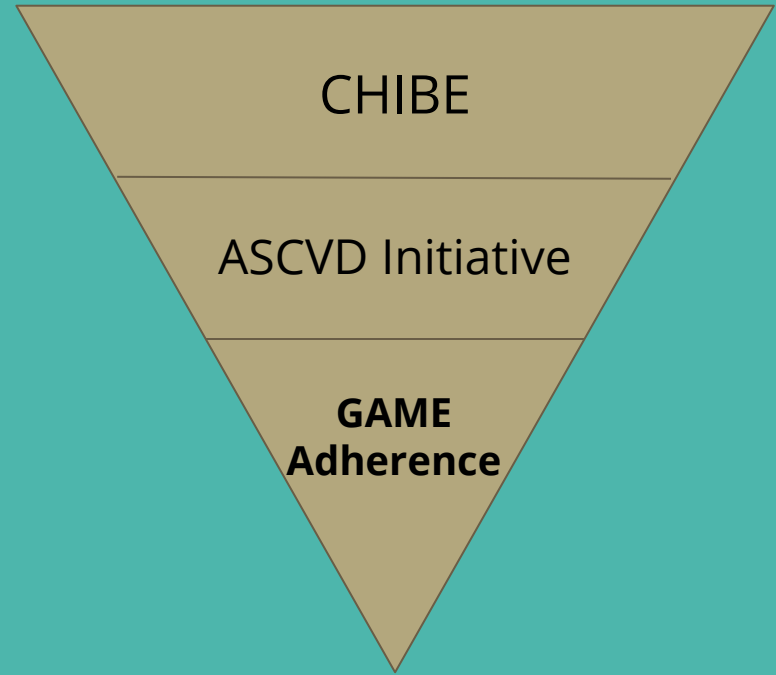
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Atherosclerotic Cardiovascular Disease (ASCVD) Initiative

Goal: to conduct a series of strategically selected pilots focused on achieving reductions in ASCVD risk through improved HTN and cholesterol control

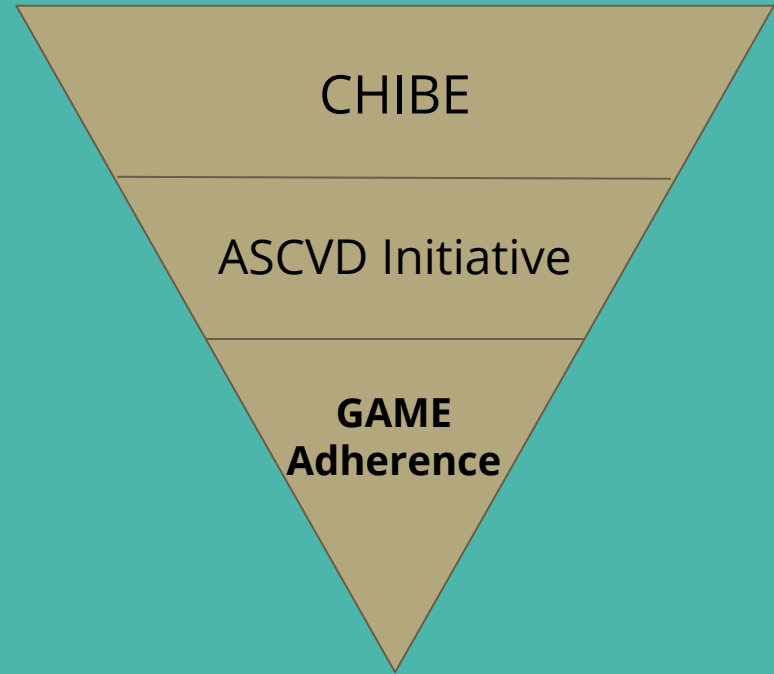


- **Previous interventions to improve medication adherence:**
 - 45 studies
 - Improvements, but not mass scale
 - Labor- and personnel-intensive
- → **Behavioral economics**
 - Previously successful in helping patients achieve desired behaviors for better health outcomes
 - E.g. physical activity
 - Less resource-intensive



Gamification and Social Incentives to Augment Medication (GAME) Adherence

- **Goal:** test the effectiveness of a **behavioral economic-enhanced gamification intervention** paired with **social support** to **improve medication adherence** in patients with hypertension and hyperlipidemia in West and Southwest Philadelphia



Study Design

- 18 weeks
- N = 84
 - West and Southwest Philadelphia
- Hypertension, hyperlipidemia, and low control
- Randomized to one of three arms

Table 2: Provider and Patient Interventions to be Refined for use in ASCVD Risk Reduction Trial
Provider interventions:

<i>Concept</i>	<i>Brief summary of potential intervention</i>
Enhanced active choice	Use pre-pended orders in EHR based on guidelines to address care gaps such as failure to initiate or intensify statins or anti-HTN treatments.
Social norming and feedback	Provide feedback to providers on how their prescribing rates compare with others. Feedback given monthly outside of face to face visits.

Patient interventions:

Social supporter	Each participant asked to sign up a social supporter who receives reports on medication adherence and BP using bidirectional text messaging
Social accountability	Adherence reported to prescribing clinician at regular intervals
Gamification	Behavioral economic approach to motivate performance including endowing with status, loss aversion, regret aversion, goal gradients
Clinical backup	Nurse support if BP/ medication adherence suboptimal (stepped care)

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Study arms

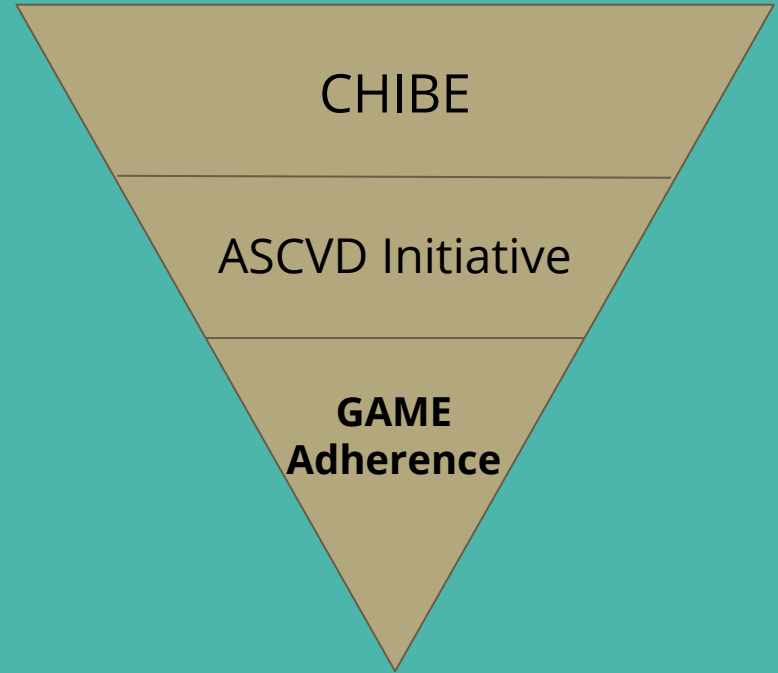
01	Arm 1: Control	<ul style="list-style-type: none">• Daily text messages
02	Arm 2 (+ gamification & social support)	<ul style="list-style-type: none">• Daily text messages• Gamification• Social Support
03	Arm 3 (+ social accountability)	<ul style="list-style-type: none">• Daily text messages• Gamification• Social support• Social accountability

Primary outcome:

- Change in self-reported medication adherence

Secondary endpoints:

- Change in blood pressure



Next Steps

- After IRB Approval
 - Beginning the recruitment process
 - Patients will receive blood pressure cuff through mail
 - Receive \$50 to encourage participation + first prescription fill

My work

- Helping with IRB documents
 - Drafting the protocol
 - Informed consent form
 - Way to Health document



New Understandings

- Research is not speedy → patience
 - Be open to pivots
 - Collaboration takes new forms
 - Unconventional career paths
-