STUDY OF A TELE-PHARMACY INTERVENTION FOR CHRONIC DISEASES TO IMPROVE TREATMENT ADHERENCE

THE STIC2IT RANDOMIZED CONTROLLED TRIAL

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BACKGROUND

Medication non-adherence is extremely common

- **One-half of patients with cardiometabolic conditions do not adhere to their prescribed medications**
  - Leads to adverse clinical consequences and $100-$300 billion in preventable health spending each year in the U.S. alone
- **Interventions to improve adherence have been modestly effective**
  - Do not adequately address each individual's unique adherence barriers
  - Imprecisely targeted to patients who do not need adherence assistance
- **Even effective interventions are difficult to sustain**
  - Often Require new infrastructure and/or are expensive

OBJECTIVE

STIC2IT: Study of a Tele-pharmacy Intervention for Chronic diseases to(2) Improve Treatment adherence

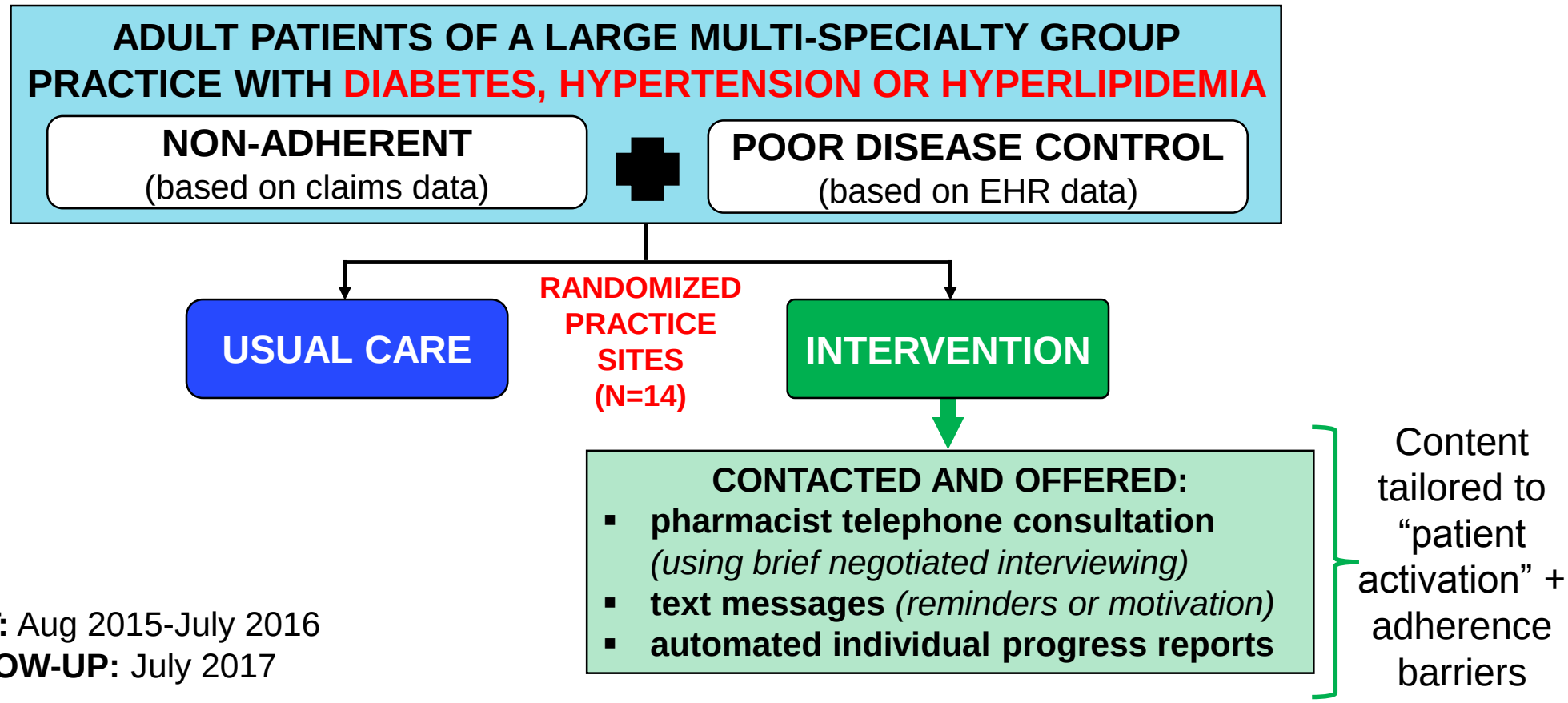
- To evaluate the effect of a medication adherence intervention for diabetes, hypertension, and hyperlipidemia that was:

Targeted	→ **FOCUSED ON PATIENTS MOST LIKELY TO BENEFIT**
Multi-component	→ **ADDRESSED MULTIPLE BARRIERS**
Behaviorally-tailored	→ **PERSONALIZED TO PATIENT NEED**
Delivered by practice-embedded pharmacists	→ **INTEGRATED INTO EXISTING CARE**
Technologically-enabled	→ **IMPROVED EFFICIENCY**

SOURCE: Choudhry et al. American Heart Journal 2016; 180: 90-97

DESIGN

Open-label, pragmatic cluster-randomized trial



- **ENROLLMENT:** Aug 2015-July 2016
- **END OF FOLLOW-UP:** July 2017

METHODS

Outcomes assessed using routinely-collected data

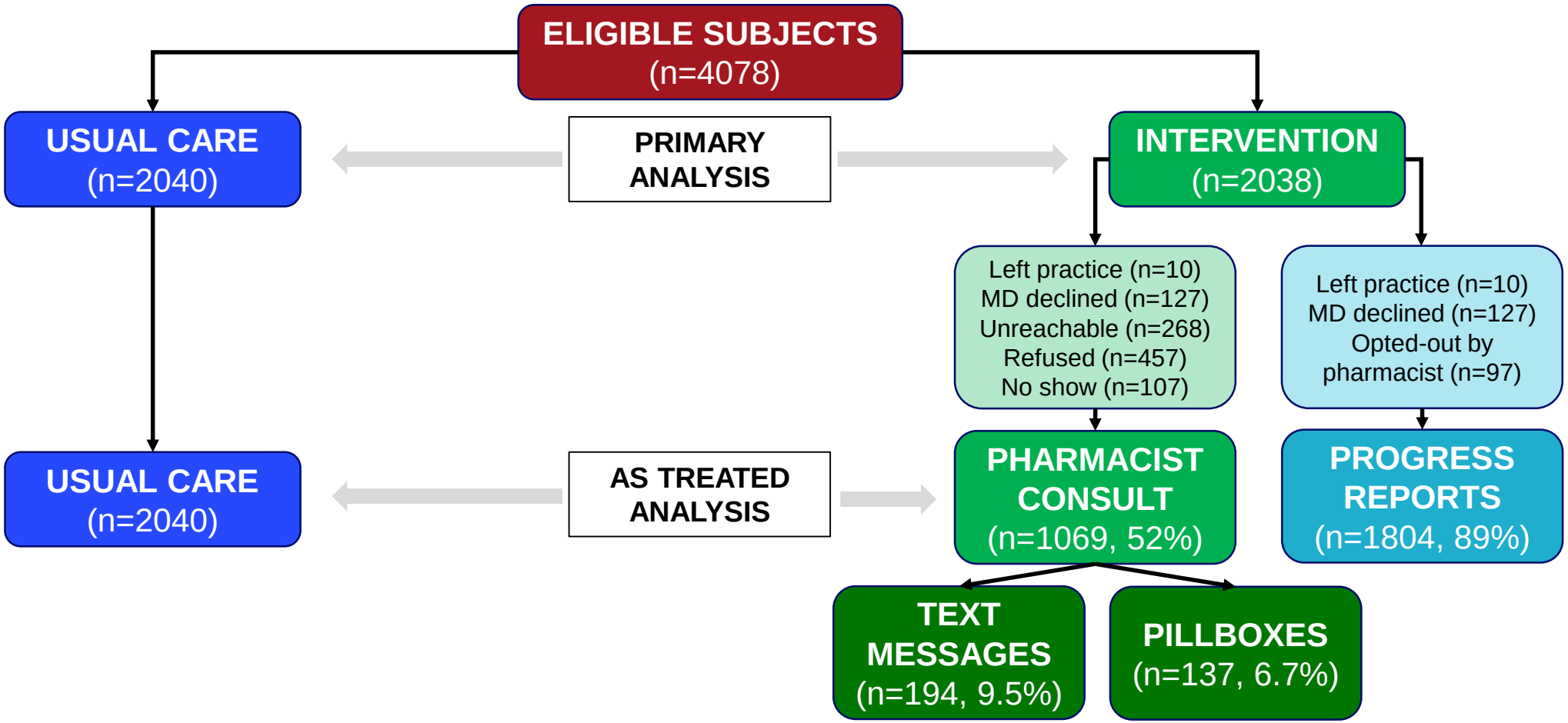
- **Outcomes assessed during the 12 months after randomization**

	Outcome	Data Source	Definition
1°	**Medication adherence**	Prescription health insurance data	Average adherence ("proportion of days covered") for eligible medications at the time of randomization
2°	**Disease control**	Electronic health record data	Proportion of patients meeting guideline targets for: (a) all eligible conditions and (b) at least 1 eligible condition

- **Primary analyses conducted on an intention-to-treat basis**
  - Powered for a 2.5% mean improvement in adherence assuming that <50% of patients would agree to a pharmacist consultation

RESULTS

Enrollment



Clinical pharmacist telephone consultations lasted a mean of 24.9 minutes; 1050 (98.2%) patients completed at least 2 calls and 175 (16.4%) patients received 3 or more calls

RESULTS

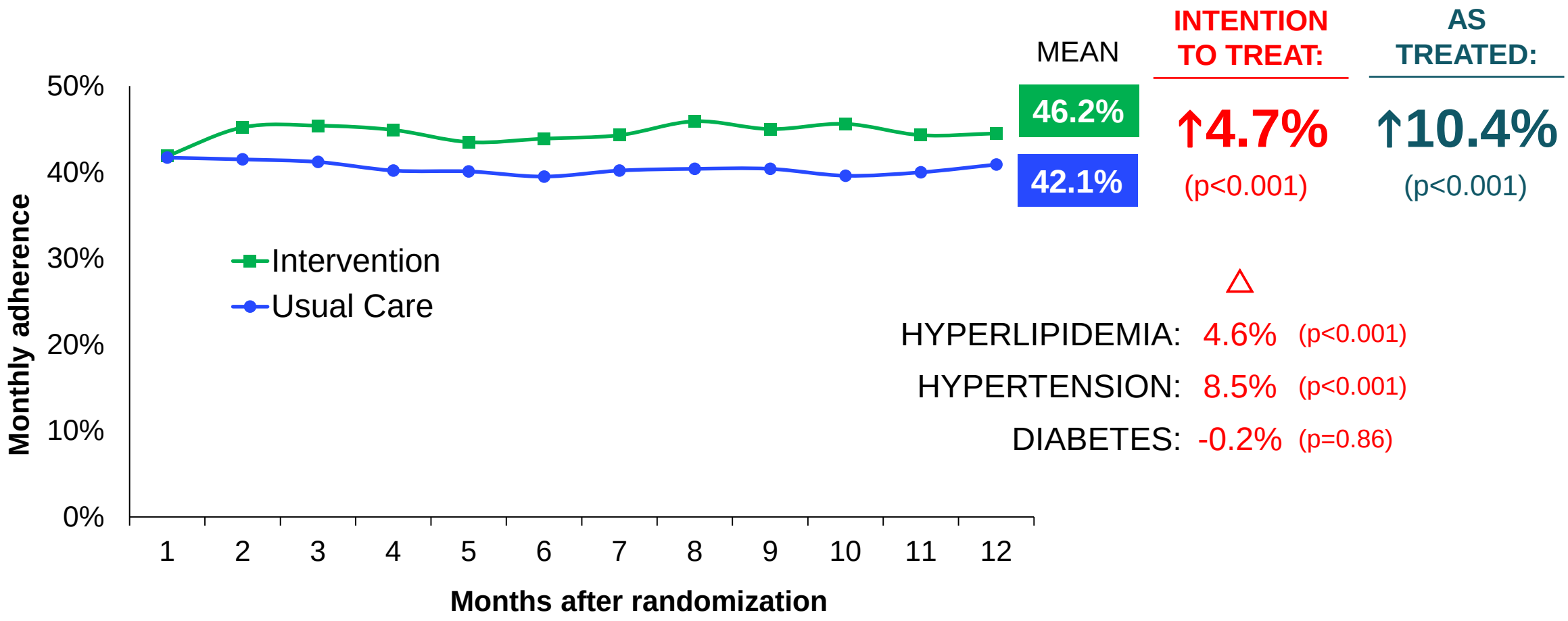
Baseline characteristics

CHARACTERISTIC	USUAL CARE (N=2040)	INTERVENTION (N=2038)
Age, mean years*	60.4	59.2
Male sex	54.7%	55.0%
White race*	53.6%	60.6%
Qualifying conditions		
Hyperlipidemia	72.0%	73.7%
Hypertension	25.9%	23.8%
Diabetes	12.1%	11.9%
Charlson comorbidity score, mean	0.90	0.74
Baseline disease control		
LDL cholesterol, mean mg/dL,	204.8	207.8
Systolic blood pressure, mean mmHg	149.9	149.2
Hemoglobin A_{1c}, mean	9.8	9.5
Baseline adherence, mean	57.0%	57.2%

* Standardized mean difference for age and race/ethnicity were >0.1;there were no other significant differences

PRIMARY OUTCOME

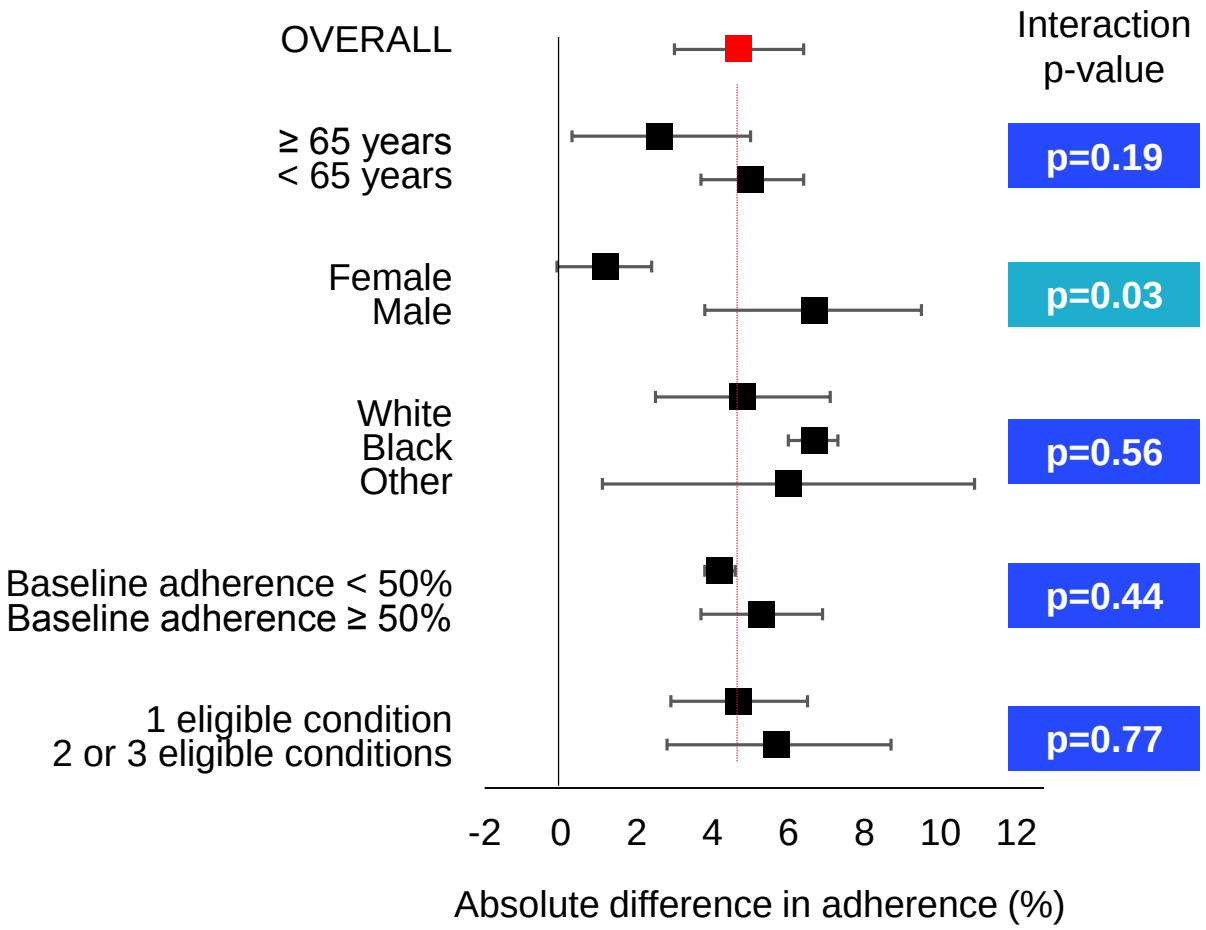
Adherence



Median (IQR) time from randomization to pharmacist call (when it occurred): 22 (17 to 32) days

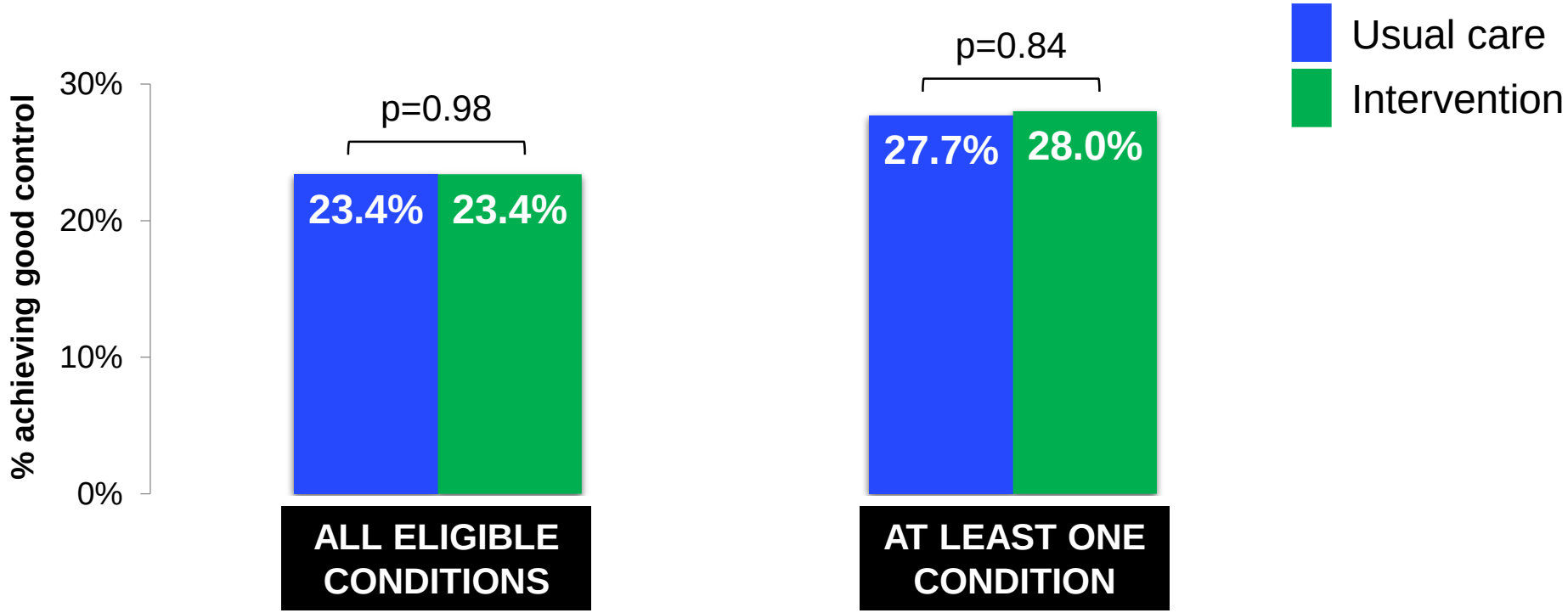
SUBGROUP ANALYSES

Adherence



SECONDARY OUTCOMES

Good disease control

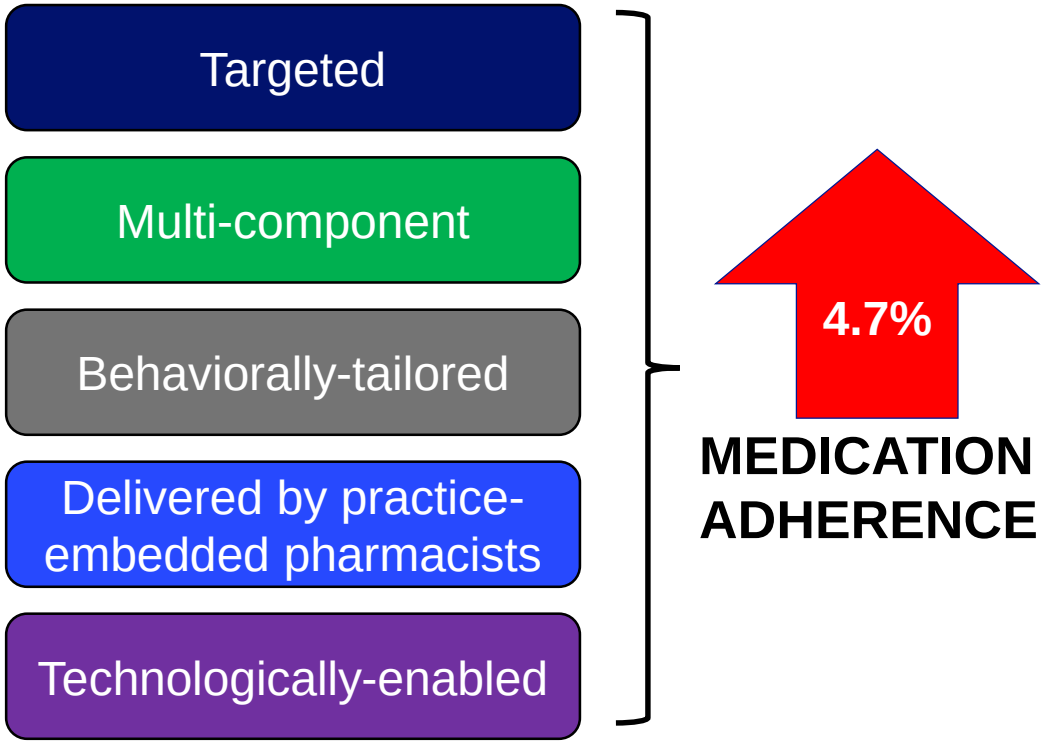


Mean duration between randomization and outcome assessment: 229.2 days

SUMMARY

The STIC2IT intervention improved adherence

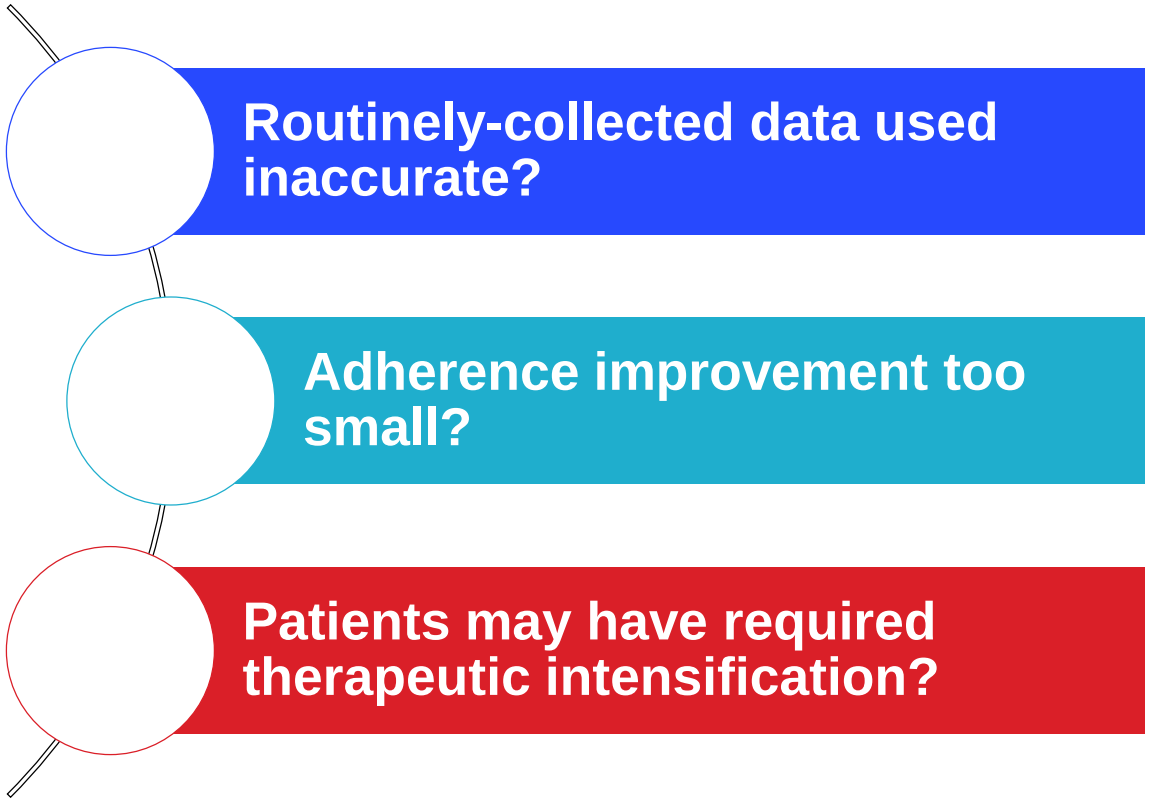
- An intervention for patients with diabetes, hypertension, and hyperlipidemia with poor medication adherence and suboptimal disease control:



- Effect size was similar to those achieved by more labor intensive interventions
- Used highly-pragmatic research methods to facilitate the generalizability of the results

SUMMARY AND IMPLICATIONS

Intervention did not improve secondary clinical outcomes



FUTURE INTERVENTIONS MAY NEED TO:

- Be more intensive while still pragmatic
- Focus on a more impactable patient population
- Simultaneously address adherence and other barriers to optimal disease control

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