

# Presenter Disclosure Information

## FINANCIAL DISCLOSURE

**Grants/Research support: Dr. Bushnell receives research support from Bristol Myers Squibb/Sanofi Aventis partnership for Co-PI status on AVAIL registry**

**UNLABELED/UNAPPROVED USES DISCLOSURE: None**

# Strategies to Improve Compliance and Adherence After Discharge

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# Objective

- Review strategies and QI initiatives that identify factors associated with medication compliance and patient adherence after hospital discharge
- Adherence eValuation After Ischemic stroke—Longitudinal (AVAIL): Lessons learned from a large stroke registry

# AVAIL: Background and Rationale

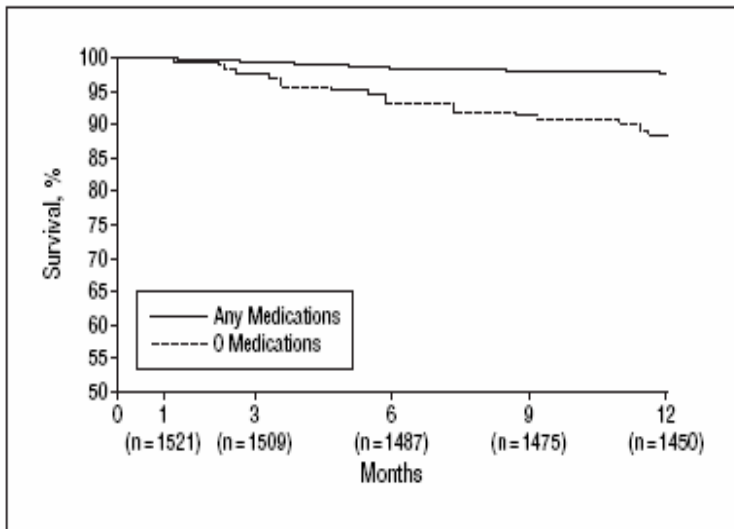
- **Secondary prevention of ischemic stroke requires recognition and ongoing treatment of established risk factors.**
- **Medication adherence is likely to impact clinical outcomes (and vice versa)**
- **Understanding variation and predictors of adherence may help improve patient behaviors and outcome**

# Background: Adherence Studies

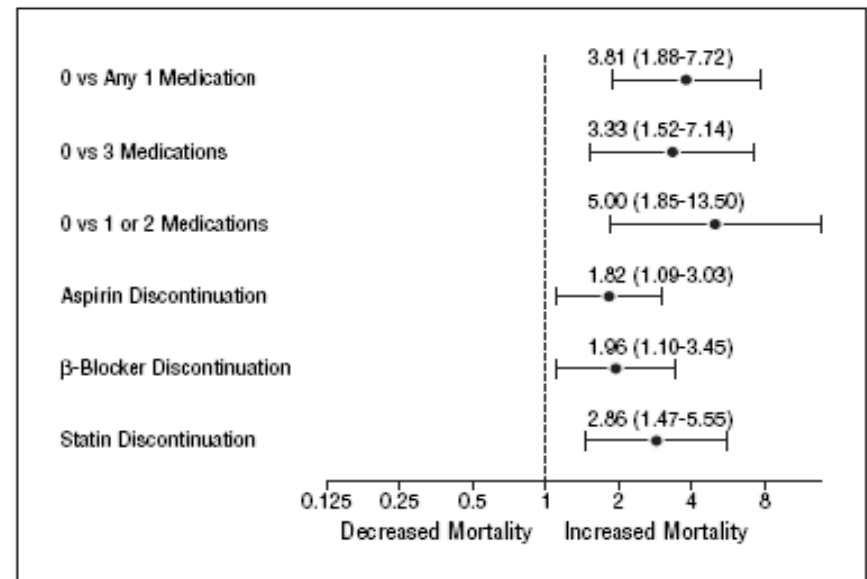
- **Cardiovascular prevention medication adherence is associated with increased 1-year mortality after MI (PREMIER Study)**

Ho, et al Arch Intern Med 2006;166:1842-1847

# Background: PREMIER study



**Figure 2.** Kaplan-Meier survival curve comparing patients discontinuing use of all medications at 1 month with patients continuing use of 1 or more medications among patients discharged with all 3 medications (log-rank test,  $P < .001$ ).



**Figure 3.** Adjusted (for all Table 1 variables) hazards ratios for patient subgroups. Statins include 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitor medications. Error bars indicate 95% confidence intervals.

Ho, et al Arch Intern Med 2006;166:1842-1847

# Background: Definitions

## ■ Adherence

- “The extent to which patient’s behavior, with respect to taking medication, corresponds with agreed recommendations from a health care provider.”

## ■ Persistence

- “Accumulation of time from initiation to discontinuation of therapy.”

# Objective of AVAIL

- **To measure stroke prevention medication adherence for 1 year following discharge from acute stroke hospitalization**
- **To determine whether barriers to adherence are related to patient/caregiver, health care provider, or health care system level factors**

# AVAIL Design

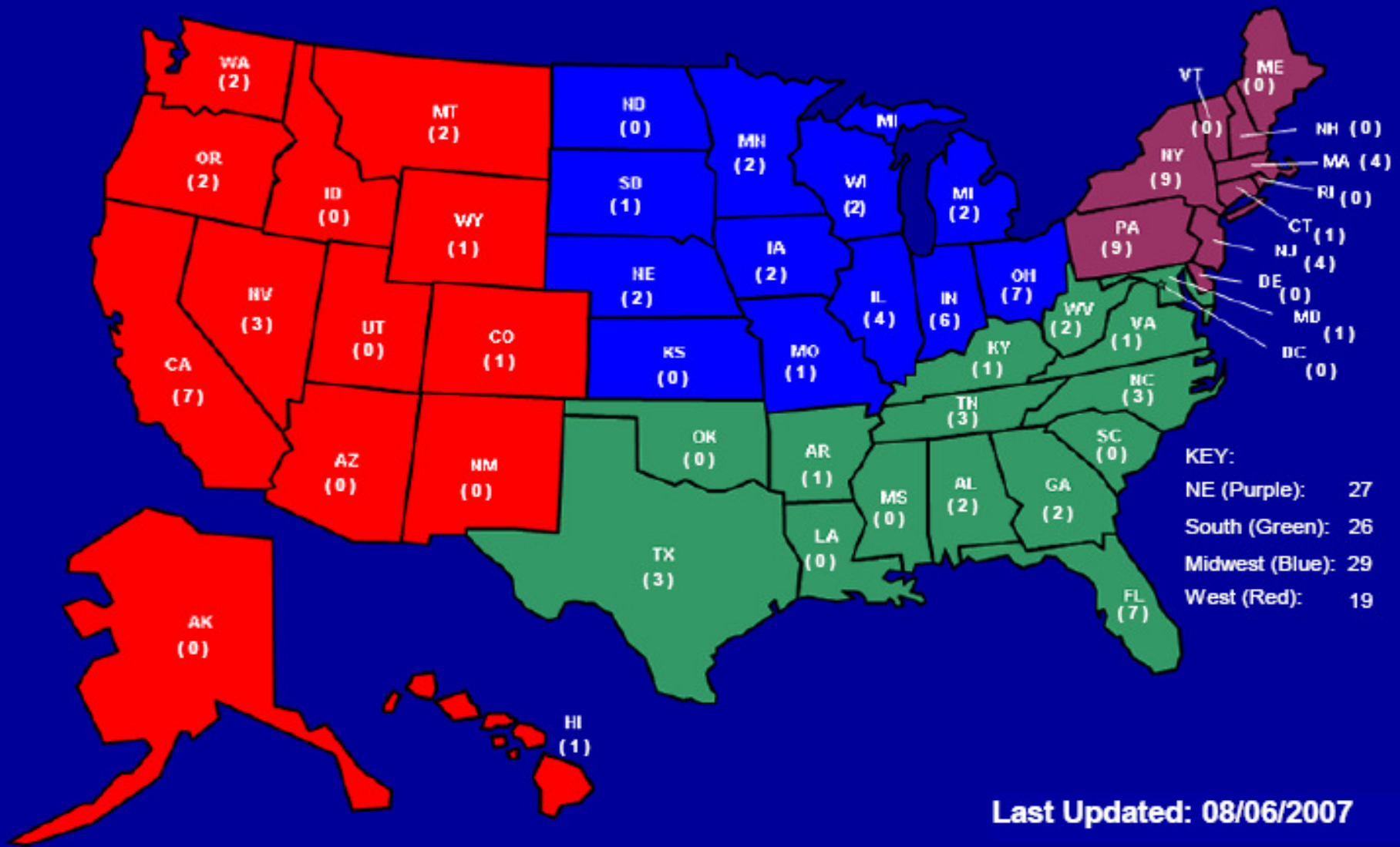
- **A multicenter, longitudinal, observational study at participating Get With The Guidelines – Stroke sites**
- **Inclusion criteria: Subjects with ischemic stroke or TIA over age 18**
- **Exclusion criteria: hemorrhagic stroke**
- **Primary outcome: Medication adherence at 3 and 12 months post- ischemic stroke or TIA**
- **Other outcomes: re-hospitalization, functional status, quality of life, depression, perceived burden of medication cost, socioeconomic status**

# AVAIL Registry Timeline

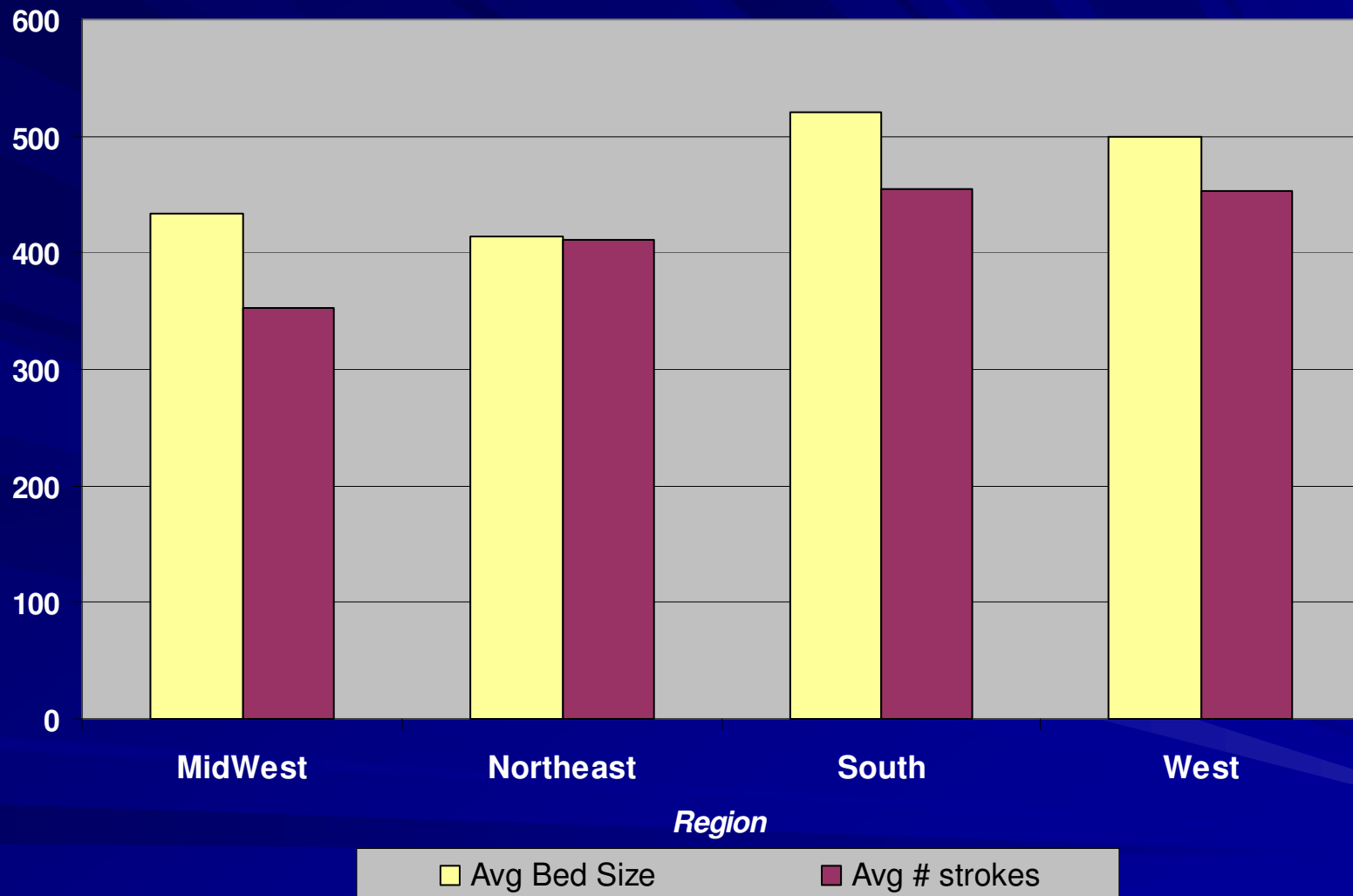
- **July 2006: Enrollment began**
- **August 2007: Site activation complete (n=105)**
- **March 2008: Complete enrollment (3000 subjects)**
- **May 2009: Complete 12 month follow-up interviews + close-out**

# Total Site Distribution by State

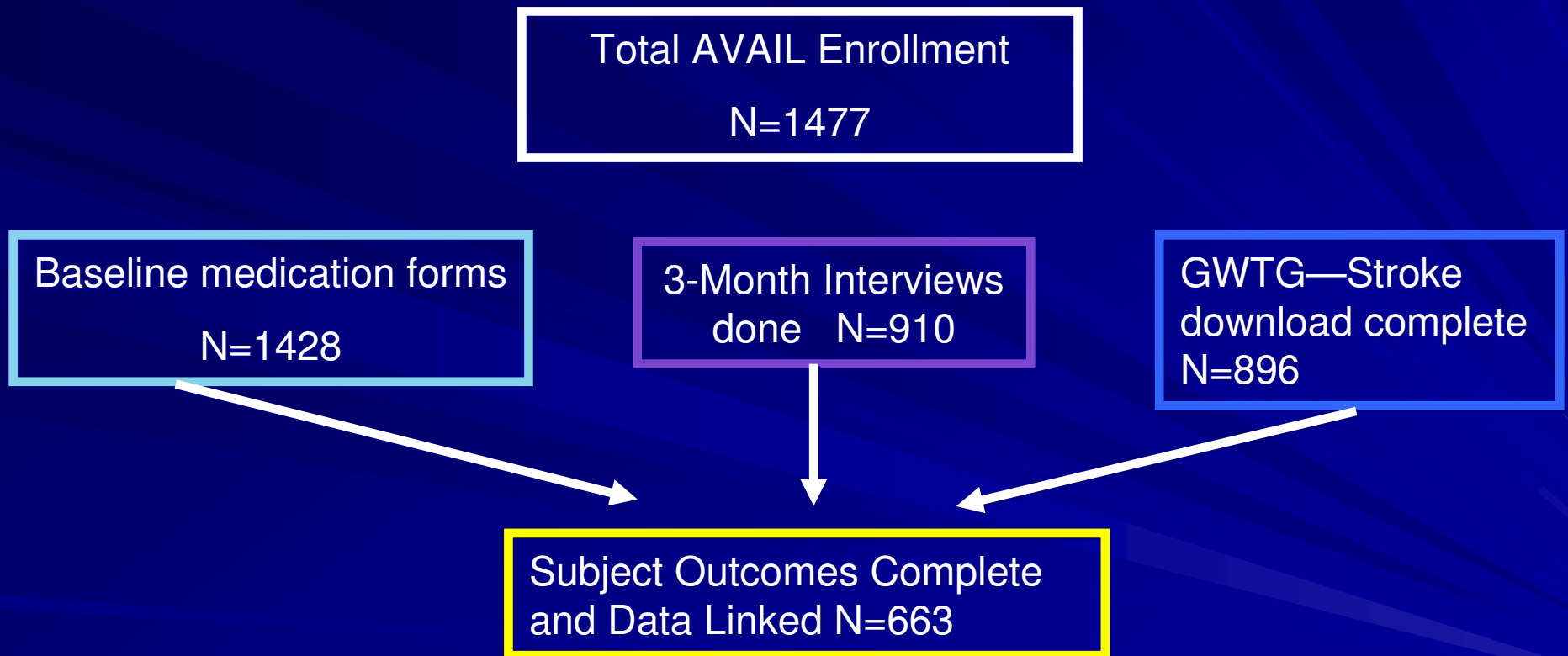
ACTIVATED SITES = 101



# AVAIL Hospital Characteristics



# AVAIL Data Linking



# Analysis

- Frequency of use
  - % of patients on each class of med at 3 months
  - % of patients on all 3 classes at 3 months
- Adherence from discharge to 3 months
$$\frac{\text{\# med classes self-reported at 3 months}}{\text{\# med classes prescribed at discharge}}$$

# Medication Adherence

- 3 Medication classes of interest:
  - Antithrombotics
  - Antihypertensives
  - Lipid-lowering

# AVAIL Baseline Characteristics

Variable	Total N = 662
Age, mean (std)	67 (13.3)
Gender, n (%)	
Women	311 (47)
Men	351 (53)
Race, n (%)	
White	549 (83)
Non-white	110 (17)
BMI, mean (std)	29 (6.0)

# Baseline Characteristics (n=814)

Insurance for medications	N (%)
Private	476 (58.5)
Medicaid	73 (9.0)
Medicare	324 (39.8)
Other Insurance	99 (12.2)
Reimbursement Plan	2 (0.25)
Prescription Assistance Program	50 (6.2)
Moderate to extreme financial hardship	187 (21)
Not filled script—too expensive	78 (8.7)

# Functional status and outcome at 3 months

- **569 (52%) had rehabilitation, PT, or OT**
  - 132 (28%) with inpatient rehab stay
  - 220 (47%) had  $\geq 6$  weeks of therapy
- **84 (9.3%) with recurrent stroke or TIA at 3 months**
  - 66 (79%) confirmed by MD
- **194 (21.6%) re-hospitalized**

# Limitations to AVAIL I

- Preliminary data, representing about 20% of total
- Majority of participating sites are certified Primary Stroke Centers
- Majority of subjects are insured
- Minority of sites are academic teaching hospitals
- Only 17% of subjects are non-white
- Analyses on why meds were stopped is forthcoming

# Summary of AVAIL Results

- **Adherence is good but there is room for improvement**
- **Simple medication aids may improve adherence (or adherent patients are more likely to use them)**
- **Overall disability and specific stroke impairments need to be considered when assessing adherence**

# QI Initiatives

- Processes to target:
  - Discharge to outpatient follow-up
    - Medication changes during hospitalization
    - Medication changes during rehab
  - Ensuring appropriate persistence of use longitudinally in the outpatient setting
  - If interventions to improve adherence are successful, then incorporate strategies into routine care

# QI initiatives

- Possible methods for measuring quality in the outpatient setting
  - Checklist of prevention medications and lifestyle/behavior modification progress
  - Brief instrument that assesses adherence and reasons for non-adherence
    - Do stroke deficits interfere?

# AVAIL Coordinating Center

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