Predicting Dementia From Vascular Conditions Among Tennessee Medicare Elderly

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Purpose

1. Describe rates of Dementia among Tennessee Medicare beneficiaries across five years (1996-2000) by race, gender, and age ; and

2. Examine 1996 vascular risk factors to predict onset of Dementia in 5 age cohorts in subsequent years (1997-2000).

What Do We Know About Dementia?

Background

1. Dementia affects 5%-10% of those aged 65+.

2. Around 45% of nursing home residents have Dementia.

3. Gender (Women) and Race (African Americans) are among known risk factors for Dementia.

Background

4. Among patients suffering from ischemic stroke, the odds of developing Dementia are 2.6 times higher for African Americans as compared to Whites;

5. Mortality rates are higher among elderly with Dementia than among elderly without Dementia.

METHOD

Medicare claims data (ICD-9 codes) were tracked (1997-2000) for the onset of Dementia among 398,724 elderly in five age cohorts:

Group 1: 65-69 years, n = 130,714;
Group 2: 70-74 years, n = 119,154;
Group 3: 75-79 years, n = 82,873;
Group 4: 80-84 years, n = 44,262;
Group 5: 85+ years, n = 21,721.

Excluded from analyses were those either diagnosed with Dementia in 1996 or who died during 1996-2000.

Vascular Risk Factors Examined For Direct & Indirect Contribution to Dementia included :

Hypertension (HTN), Cardiac Arrhythmia (CA), Congestive Heart Failure (CHF), Heart Attacks (MI), Lipids (HCL), Diabetes (DM),

Stroke, & Transient Ischemic Attack (TIA)

Sample

The Medicare Administrative data on 398,724 elderly included:

- **89.1% Whites and 60.5% females**
- **Average age: 75 years (females were older)**

Analyses

Path analysis (with logistic regression) was used for each age cohort separately, predicting dementia directly from each risk factor and indirectly through stroke.

In this panel study, race and gender were used as dummy control variables.

RESULTS

PREVALENCE OF DEMENTIA By Race & Gender & Age Cohort

Prevalence of Dementia by Race and Sex Across Years in TN

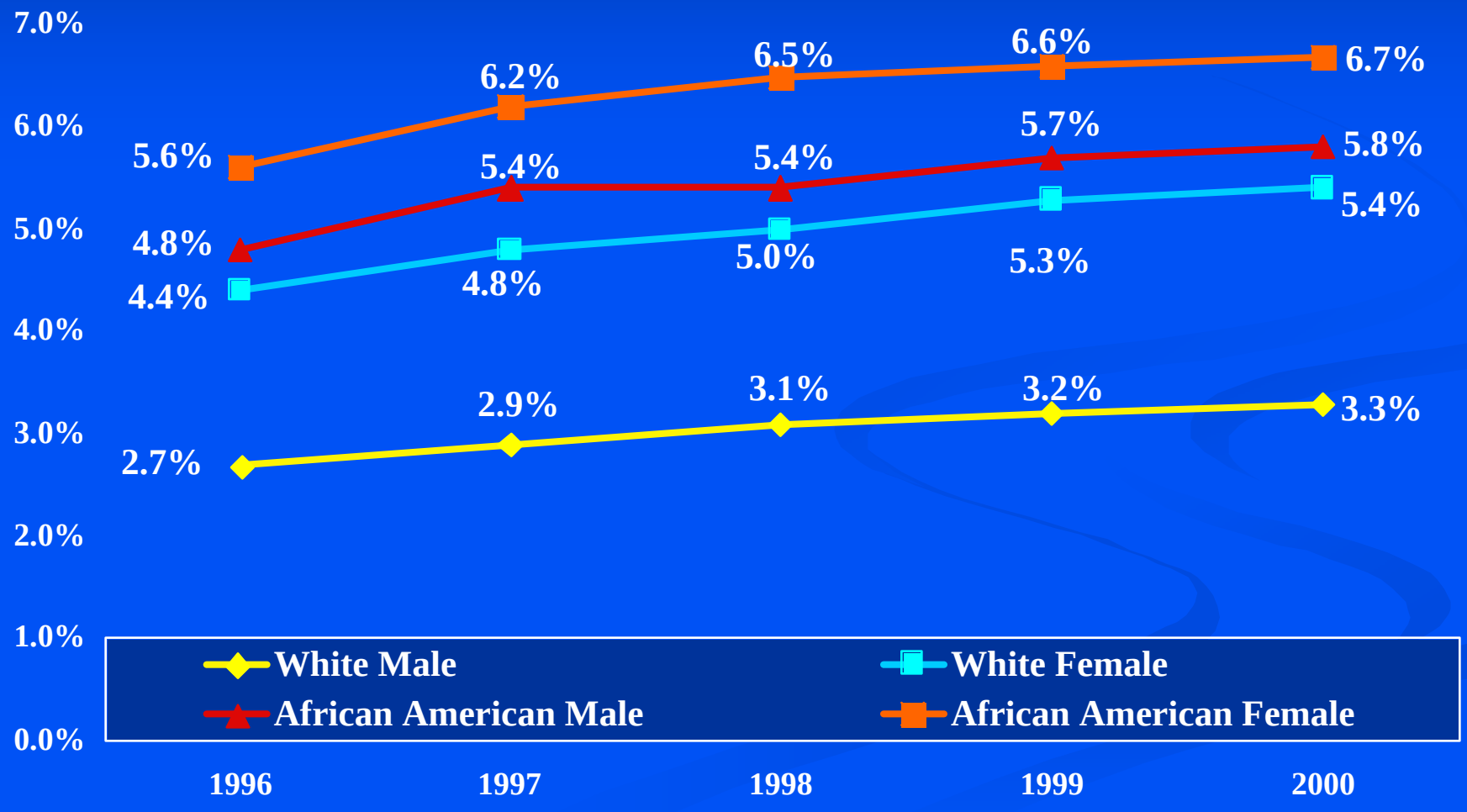
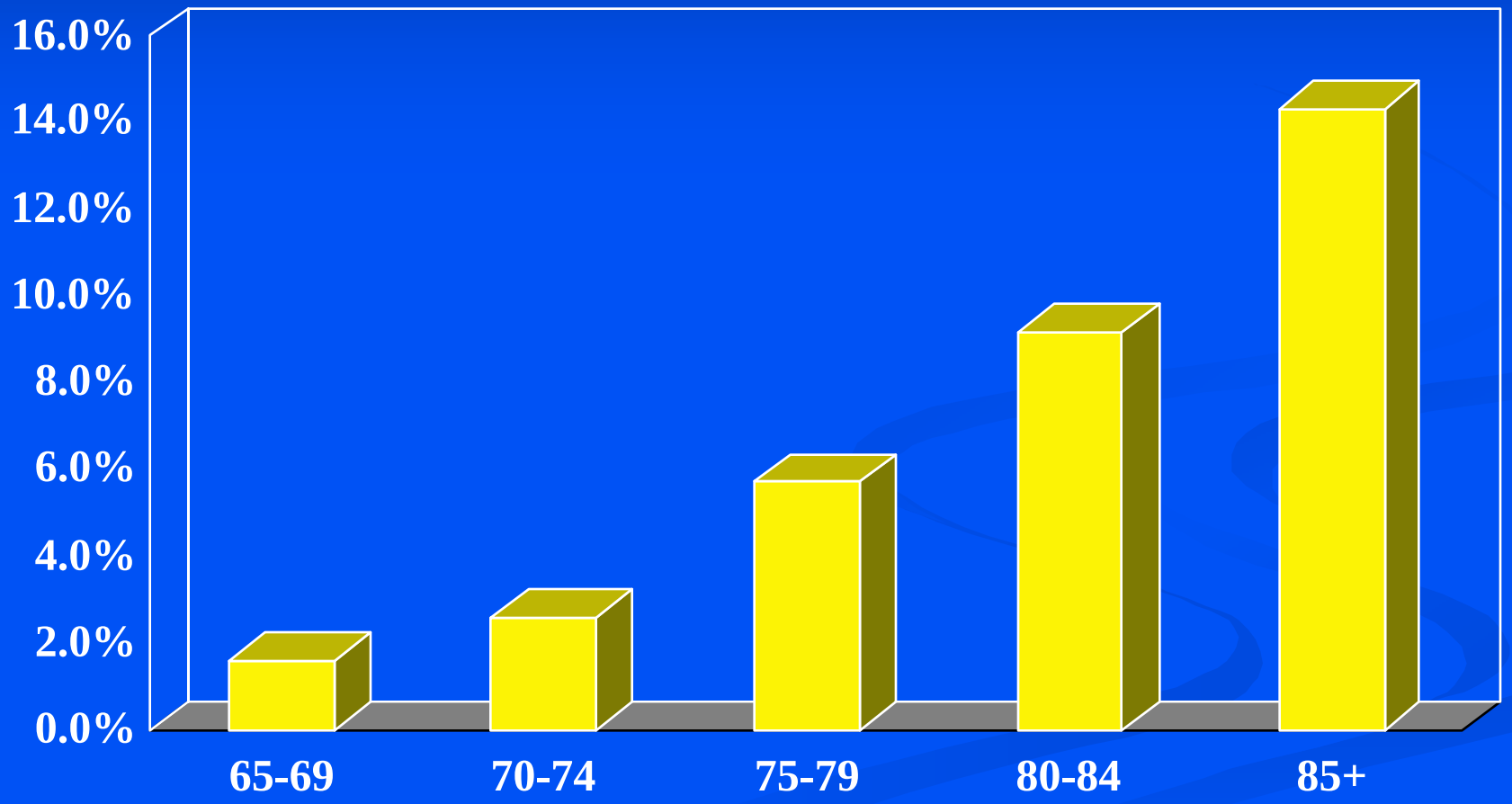


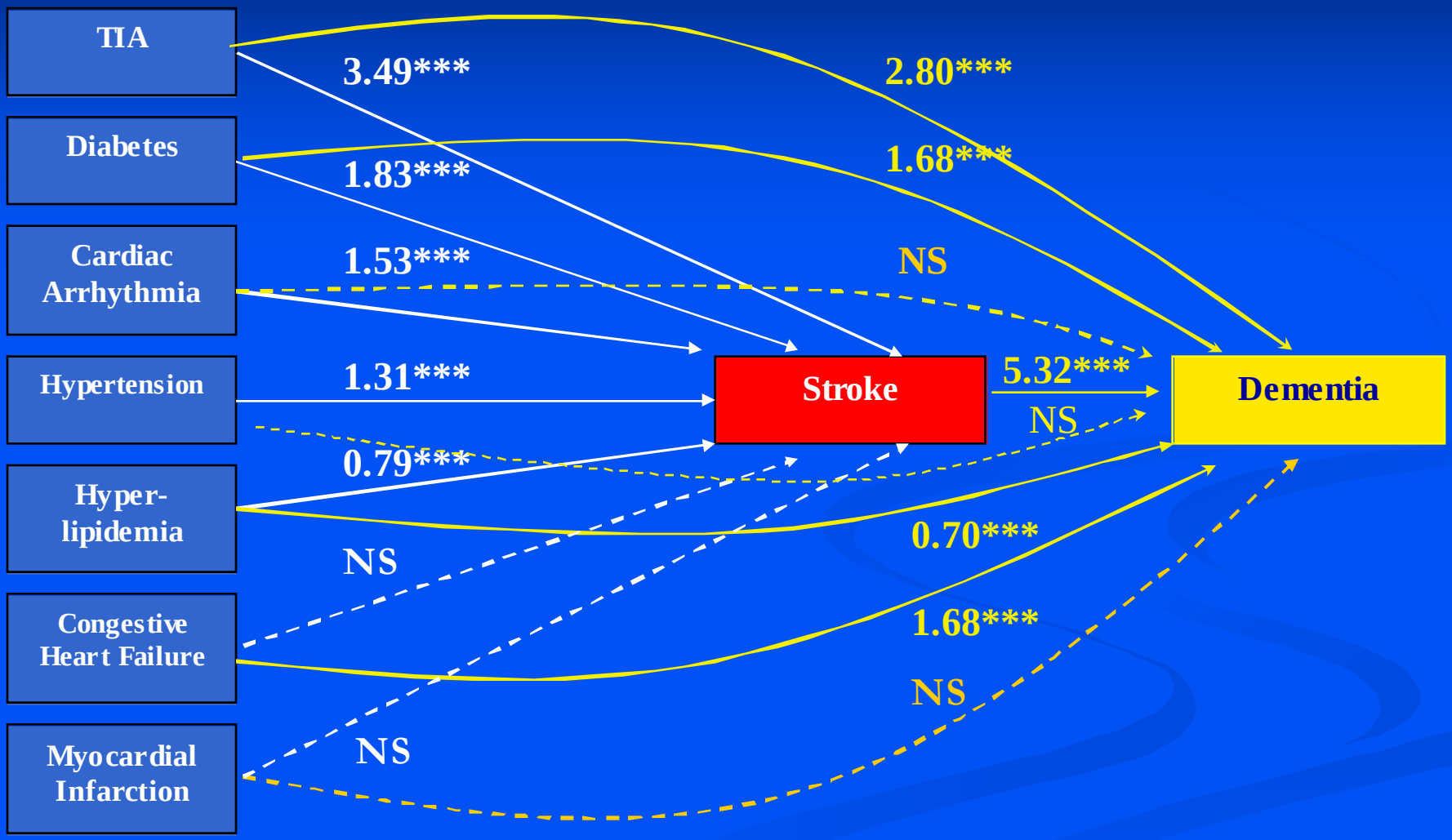
Figure 1: Percentage of Dementia By Age: 1997-2000



FACTORS PREDICTING

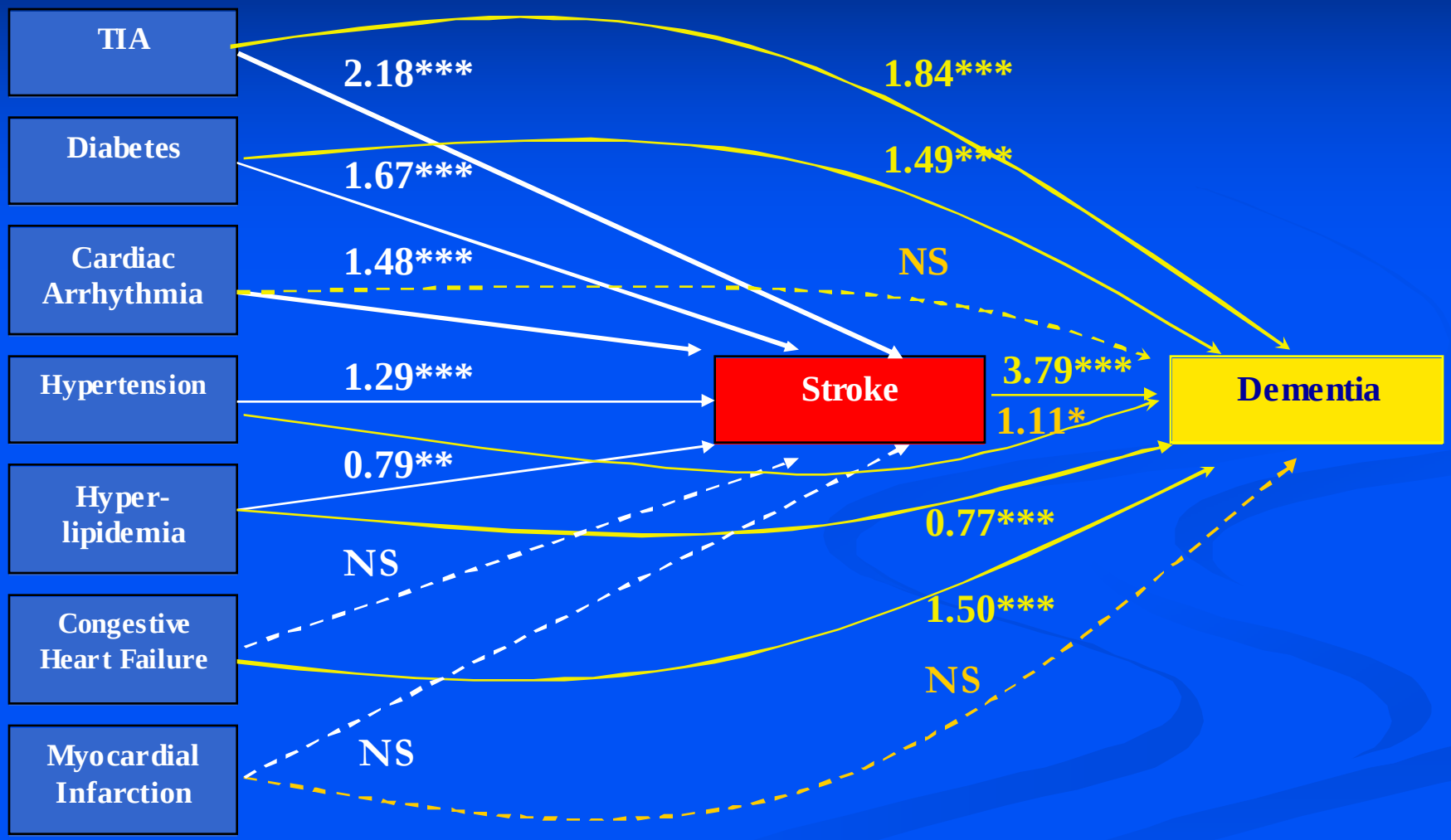
STROKE & DEMENTIA

Figure 2: Odds Ratios for Risk Factors Predicting Stroke & Dementia: Group 1: Aged 65-69 Years.



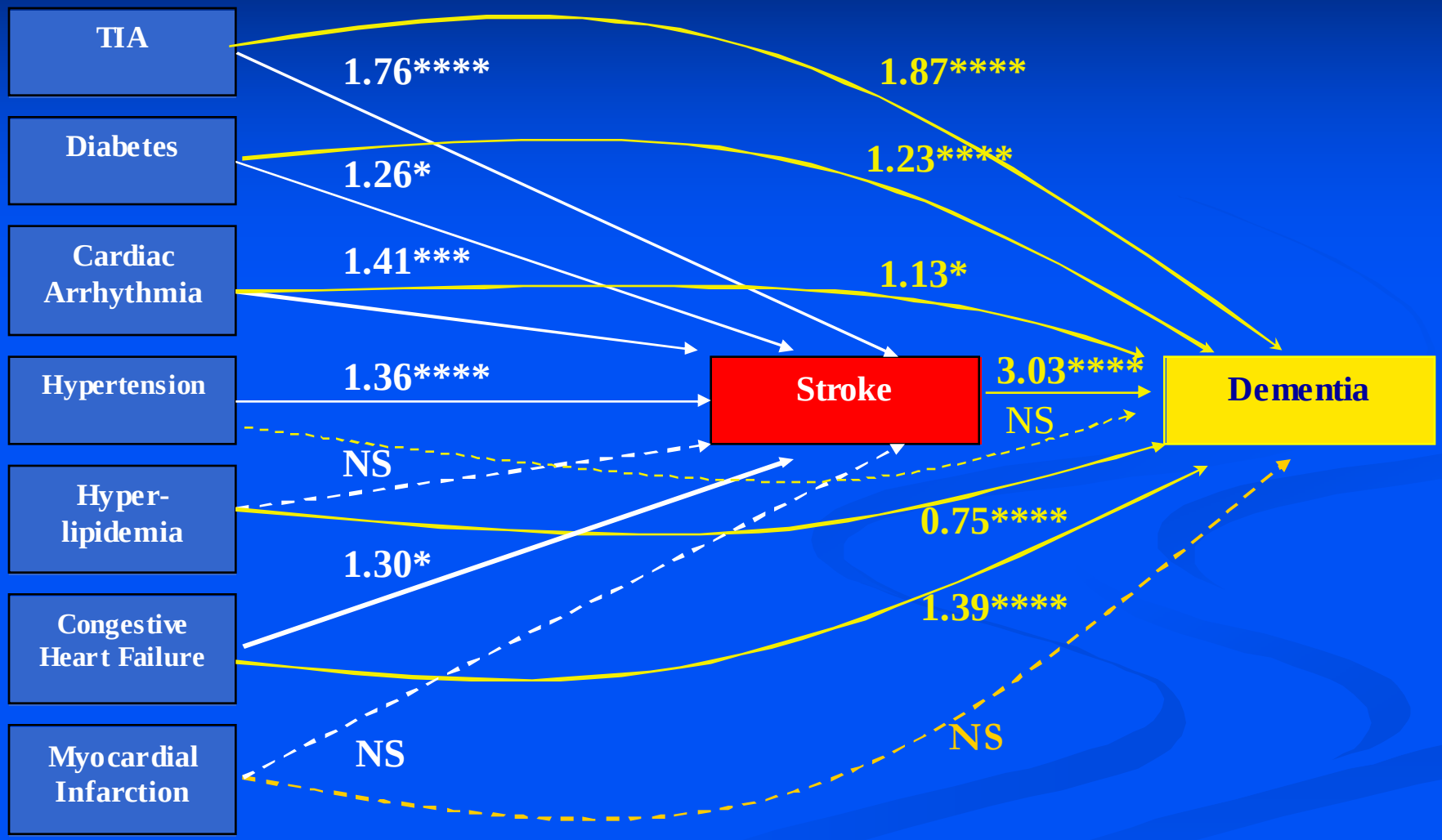
Controlling for gender & race *p<.05, **p<.01, ***p<.001, ****p<.0001

Figure 3: Odds Ratios for Risk Factors Predicting Stroke & Dementia: Group 2: Aged 70-74 years.



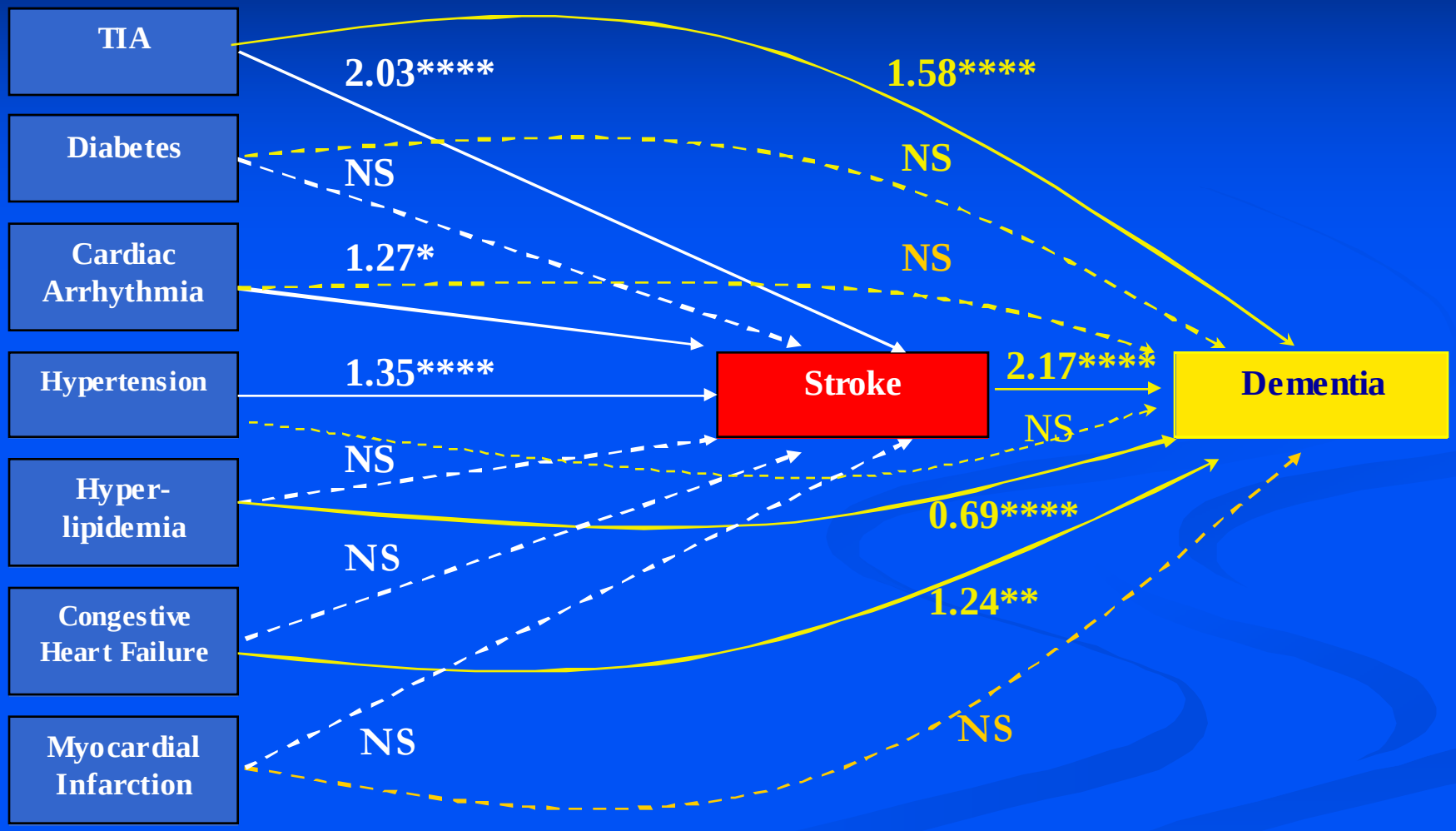
Controlling for gender & age *p<.05, **p<.01, ***p<.001, ****p<.0001

Figure 4: Odds Ratios for Risk Factors Predicting Stroke & Dementia: Group 3: Aged 75-79 years.



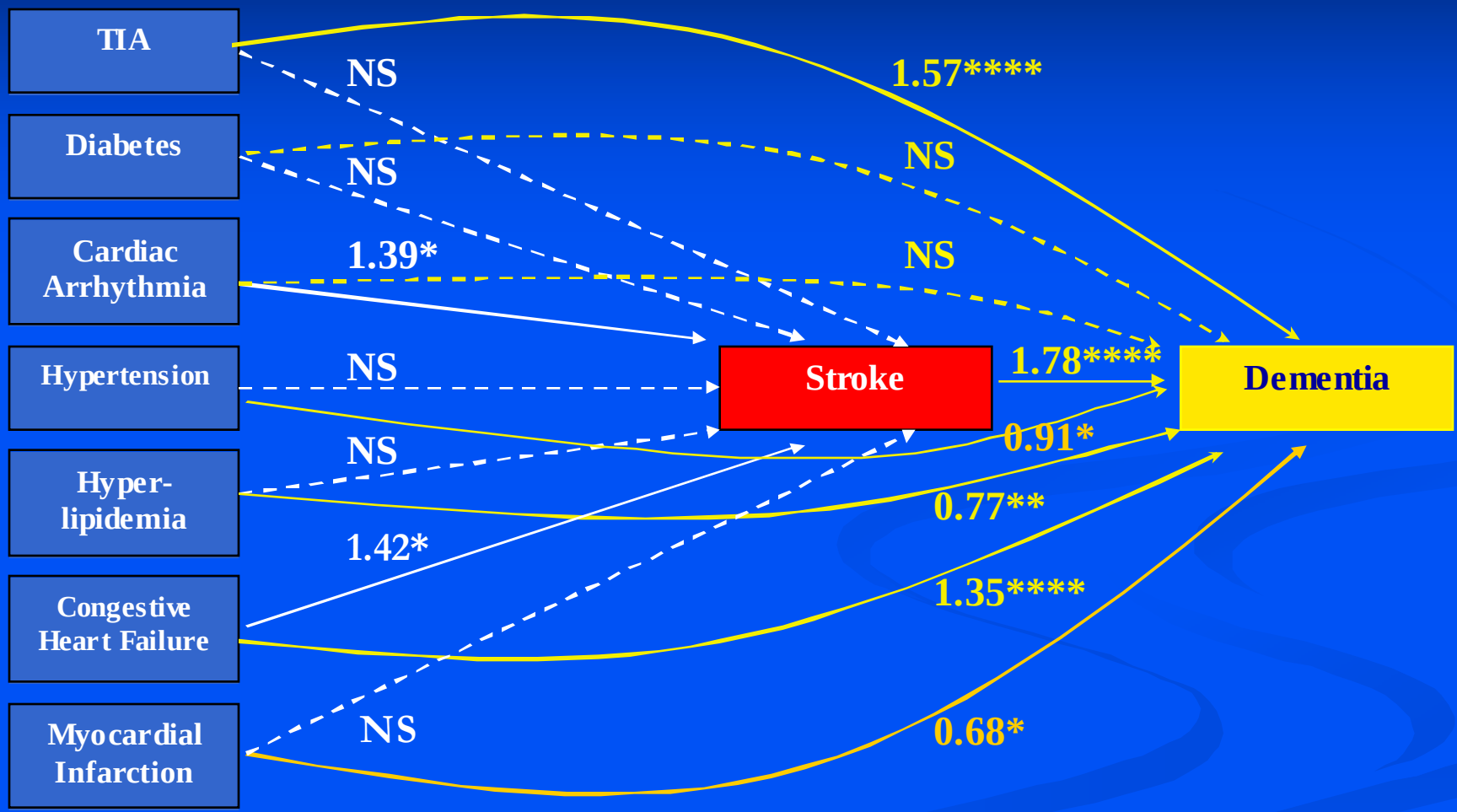
Controlling for gender & age *p<.05, **p<.01, ***p<.001, ****p<.0001

Figure 5: Odds Ratios for Risk Factors Predicting Stroke & Dementia: Group 4: Aged 80-84 years.



Controlling for gender & age *p<.05, **p<.01, ***p<.001, ****p<.0001

Figure 6: Odds Ratios for Risk Factors Predicting Stroke & Dementia: Group 5: Aged 85+ Years.



Controlling for gender & age *p<.05, **p<.01, ***p<.001, ****p<.0001

SUMMARY OF STROKE FINDINGS

1. HTN, CA, & TIA are significant predictors of stroke across all age groups.

2. DM predicted stroke right through age 80. However, beyond age 80, DM's contribution was less robust.

SUMMARY OF DEMENTIA FINDINGS

1. CHF, TIA, & Stroke have a direct effect toward the onset of Dementia across all age cohorts. HTN and CA have indirect effect on Dementia and only through Stroke ;

2. DM was a significant predictor of Dementia both Directly and Indirectly through stroke up to the age of 80, but less consistently beyond that age.

3. Lower cholesterol was significantly protective against Dementia in all age groups.

DISCUSSION

1. Observation: Dementia risk increases with increasing age.

2. Hypothesis: Lipid lowering Drugs may Slow the Progression of Dementia.

3. Hypothesis: Aggressive Management of factors (e.g., HTN, DM) Contributing to Stroke May also help to Prevent Dementia.

Limitations

- Other Risk Factors (e.g., OBESITY) for their influence on factors such as HTN are NOT known; hence influence of other risk factor on Dementia remains unknown;
- The Administrative Files used for this analysis do NOT provide for Severity of risk factors or whether risk factors examined were under control with medication;
- Tennessee may NOT be typical of other states; hence the findings are limited.

THANK YOU

FOR YOUR

ATTENTION