



# **GRADUATE SCHOOL OF BIOMEDICAL SCIENCES**

## **CLINICAL & POPULATION HEALTH RESEARCH PROGRAM**

**Ph.D. THESIS DEFENSE**

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**MENTOR: Kate Lapane, PhD**

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### **Anticoagulant Use, Safety, and Effectiveness for Ischemic Stroke Prevention in Nursing Home Residents with Atrial Fibrillation**

**Background:** Fewer than one-third of nursing home residents with atrial fibrillation were treated with the only available oral anticoagulant, warfarin, historically. Management of atrial fibrillation has transformed in recent years with the approval of 4 direct-acting oral anticoagulants (DOACs) since 2010.

**Methods:** Using the national Minimum Data Set 3.0 linked to Medicare Part A and D claims, we first described contemporary (2011-2016) warfarin and DOAC utilization in the nursing home population (Aim 1). Using a new-user active comparator design, we then compared the incidence of safety (i.e., bleeding), effectiveness (i.e., ischemic stroke), and mortality outcomes between residents initiating DOACs versus warfarin (Aim 2). Finally, we linked residents to nursing home and county level data to study associations between resident, facility, county, and state characteristics and anticoagulant treatment (Aim 3).

**Results:** The proportion of residents with atrial fibrillation receiving treatment increased from 42.3% in 2011 to 47.8% as of December 31, 2016, at which time 48.2% of treated residents received DOACs. Demographic and clinical characteristics of residents using DOACs and warfarin were similar in 2016. Half of the 8,734 DOAC users received standard dosages and most were treated with apixaban (54.4%) or rivaroxaban (35.8%) in 2016.

Compared with warfarin, bleeding rates were lower and ischemic stroke rates were higher for apixaban users. Ischemic stroke and bleeding rates for dabigatran and rivaroxaban were comparable to warfarin. Mortality rates were lower versus warfarin for each DOAC.

**Conclusions:** In nursing homes, DOACs are being used commonly and with equal or greater benefit than warfarin.

#### **Mentor(s)**

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