Working Session 4A: Stroke, Dementia, and Depression—Prevention, Early Diagnosis and Treatment in a Complex World—Summary Articles

Update: The Paul Coverdell Georgia Stroke Registry Pilot Prototype

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Introduction

Georgia and 7 other states are participating in statewide stroke registry programs to collect information about patients who are admitted to hospitals with acute stroke symptoms. "This will allow us to learn more about the impact of stroke and improve the quality of care at the participating hospitals," Dr. Michael Frankel said. "This is the first time anyone has ever attempted to collect data on a large population of people suffering from stroke."

Dr. Frankel is principal investigator for the Georgia study, which was funded for 2 years by the Centers for Disease Control and Prevention (CDC) to honor the late US Sen. Paul Coverdell of Georgia and others who have died or been disabled from stroke. Congress allocated the money for the Paul Coverdell National Acute Stroke Registry.

"Stroke is the leading cause of adult disability and the number 3 cause of death in America, after heart disease and cancer," Dr. Frankel said. "Georgia is located in an area known as the 'stroke belt.' That means we record a higher incidence of death and disability due to stroke."

Georgia and 3 other states—Massachusetts, Michigan, and Ohio—received grants in 2001 to create stroke registry prototypes. Four additional states—California, Illinois, North Carolina, and Oregon—were funded in 2002. "All of these states are designing their versions of stroke registries and ways to improve health care," Dr. Frankel said.

The Paul Coverdell Georgia Stroke Registry Pilot Prototype involves close collaboration of Georgia hospitals, Emory University (the neurology department and the School of Public Health), the Grady Health System, the Georgia Medical Care Foundation (peer review), the Georgia Hospital Association, the Georgia Division of Public Health, and the American Stroke Association (a division of the American Heart Association).

Dr. Frankel and his team randomly selected 46 hospitals to participate in the stroke registry out of 160 hospitals in Georgia. The hospitals were asked to submit anonymous information about patients, including their age, gender, race, type and severity of stroke, length of hospital stay, and treatment. The hospitals will not be identified but they will be able to see how their stroke care compares to other hospitals throughout the state.

The 4 phases of the project include hospital recruitment; data collection, analysis and feedback to hospitals; quality improvement intervention; and assessment/modification of quality improvement strategies.

"We are assessing the quality of care at each participating hospital, but the information is for that hospital's eyes only," Dr. Frankel said. "We provide feedback to the hospitals as the quality of care varies. The hospitals receive educational materials based on national guidelines for the care of patients with acute stroke that they use to improve the quality of care and prevent additional strokes."

During the data collection phase, the following steps were taken:

- The definition of case ascertainment was established. The study uses discharge diagnostic codes—primary and secondary ICD-9 codes: 430–436. This excludes codes for traumatic hemorrhage.
- Case definition was established for all participating states. This included an abbreviated case definition: any patient admitted with acute ischemic stroke, TIA, non-traumatic intracerebral hemorrhage or non-traumatic subarachnoid hemorrhage. Symptoms had to present on admission.
- The data elements were recommended by an "expert panel" and modified by the initial 4 states in the registry. They encompass many aspects of care—pre-hospital through discharge.

The Georgia Stroke Registry's data collection process included selecting a 3-month period of abstraction (December 2001 through February 2002), instructing participating hospitals to send copies of their charts to the Georgia Medical Care Foundation (GMCF), and hiring and training nurse abstractors (by GMCF).

Guidelines for stroke management established by the Georgia Stroke Registry

- Use of thrombolytic therapy
- Rapid CT imaging
- Antithrombotic therapy
- Anticoagulation (atrial fibrillation)
- Deep venous thrombosis (DVT) prophylaxis
- LDL (the ''bad'' cholesterol) measurement

The Georgia Medical Care Foundation received 3,842 medical records from the 46 hospitals participating in the registry. A total of 2,196 of these records met the case definition. The GMCF analyzed the baseline data and delivered reports to the hospitals on the quality of their care and how they compared to hospitals of similar size.

In September 2002 the Georgia registry linked with the American Stroke Association and its "Get With The Guidelines" initiative. This web-based data entry tool is being beta tested in Atlanta and 7 other cities. "We thought it was important to make this connection because of our common goals in improving stroke care," Dr. Frankel said.

The hospital reports contained the following information:

• The percentage of potentially eligible patients receiving intravenous (IV) thrombolysis.

• The percentage of patients receiving thrombolysis who developed a symptomatic intracerebral hemorrhage within the first 36 hours.

• The percentage of ischemic stroke/TIA patients receiving antithrombotic therapy within 24 hours of admission.

• The percentage of ischemic stroke/TIA patients receiving antithrombotic therapy as discharge medication.

• The percentage of ischemic stroke/TIA patients with atrial fibrillation receiving anticoagulation with Warfarin as discharge medication.

• The percentage of non-ambulatory patients receiving prophylaxis for DVT (deep vein thrombosis) within 48 hours.

• The percentage of patients with ischemic stroke/TIA who have had their LDL measured. "We are receiving data that says we should look at cholesterol issues in strokes," Dr. Frankel said.

• The amount of time between the patient's arrival in the hospital emergency room and the initial neuroimage (by CT or MRI).

• The "door to initial neuroimage" for thrombolysis-eligible patients.

• The time from triage to the initiation of IV thrombolysis. Is it less than one hour, one to 2 hours, 2 to 3 hours or more than 3 hours?

"The data will enable hospitals to focus on their quality improvement plans and evaluate changes in care," Dr. Frankel said. "It will also provide a benchmarking tool to measure progress in patient care."