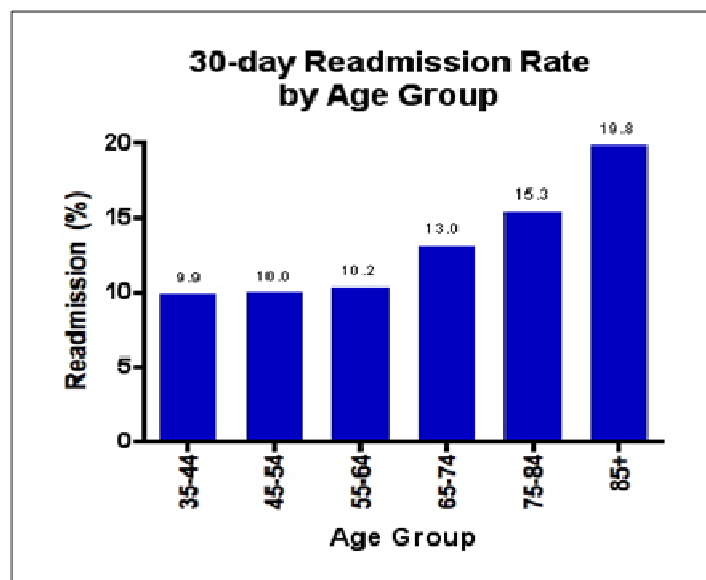
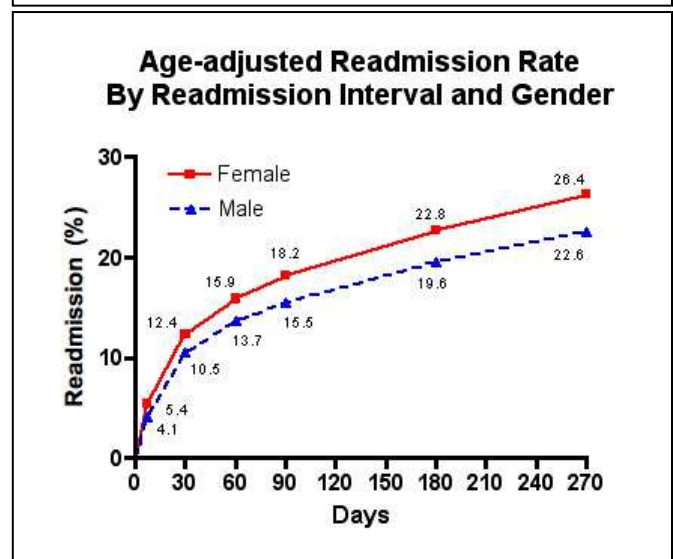
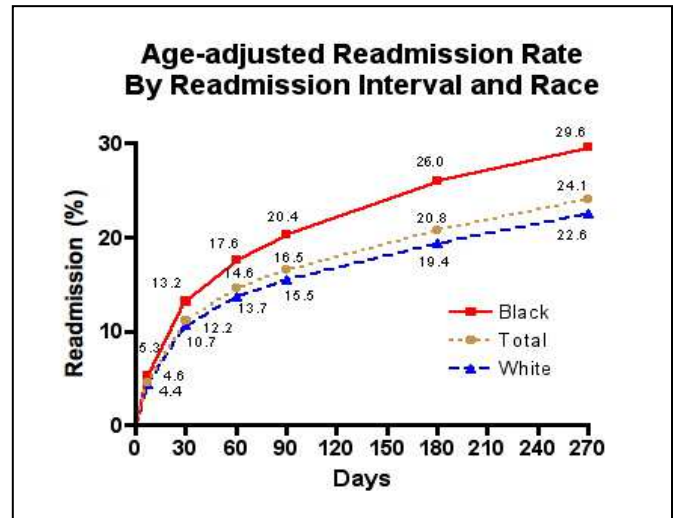


Hospital Readmission Among Heart Disease Patients

- Hospital readmission, or re-hospitalization, refers to a return hospitalization to an acute care hospital (same or different one) that follows a previous acute care admission within a specified time interval. It is a common, costly and often preventable outcome. Consumers and policy makers view hospital readmission as an indicator of hospital-level efficiency and quality of care.^{1,2}
- In 2010, 791,234 hospital admissions among Tennessee residents were reported by acute care hospitals in Tennessee.
- In the same year, 45,134 unique patients aged 35 years and older were admitted with a primary diagnosis of heart disease, among which 5,785 were readmitted within 30 days following the initial discharge.
- The age-adjusted hospital readmission rate for heart disease patients increased steadily with readmission time interval (i.e. days between the date of initial discharge and the date of readmission). The 30-day and 90-day readmission rates were 12.2% and 16.5%, respectively.
- Age-adjusted hospital readmission rates among heart disease patients were higher for blacks than whites for all time intervals.



- Age-adjusted readmission rates for blacks were at least 20% higher than those for whites when the readmission time interval was 30 days or longer.
- Age-adjusted readmission rates for female heart disease patients were higher than for male patients for all time intervals.
- The 30-day readmission rate was similar among heart disease patients aged 35 to 64 years.
- The 30-day readmission rate increased with age among patients over 65 years of age, with patients 85 years and older having the highest readmission rate at 19.8%.

¹ Goldfield NI, et al. Identifying potentially preventable readmissions. *Health Care Financing Review*. 2008, 30(1):75-91.

² Desai MM, et al. Statistical models and patient predictors of readmission for acute myocardial infarction: a systematic review. *Circulation: Cardiovascular Quality and Outcomes*. 2009, 2(5):500-7.

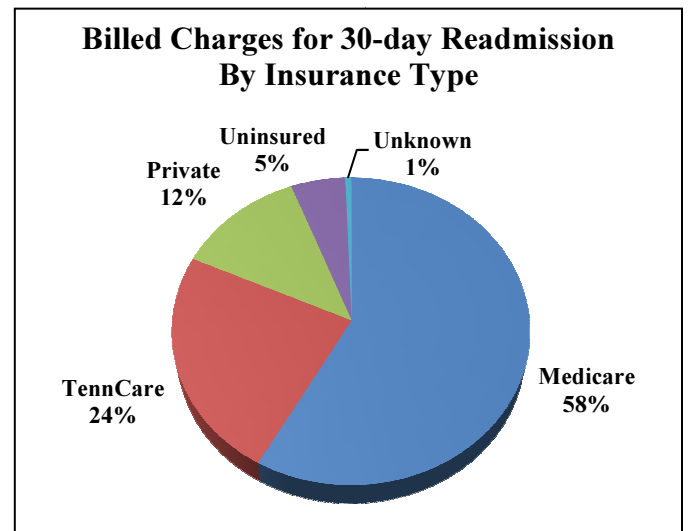
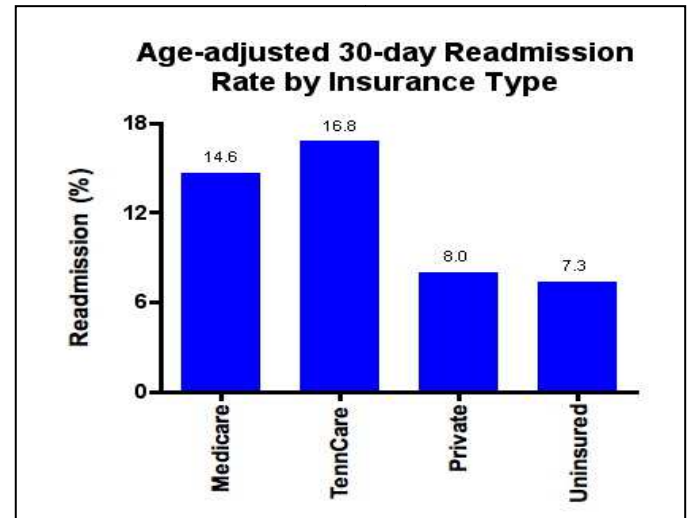
Hospital Readmission Among Heart Disease Patients

- Medicare and TennCare beneficiaries had higher readmission rates than those with private insurance or those without insurance.
- In 2010, 48 hospitals admitted at least 200 patients with a primary diagnosis of heart disease.
- In 8 of those hospitals, 30-day readmission rates were under 11%; in 21 hospitals they were between 11% and 14%; in 14 hospitals they were between 15% and 17%; and in 5 hospitals 30-day readmission rates were higher than 17%.

Hospital Distribution by 30-day Readmission Rate

Readmission Rate (%)	Number of Hospitals	Percent of Hospitals
< 11	8	16.7
11-14	21	43.7
14-17	14	29.2
17-21	5	10.4

- In 2010, 30-day hospital readmission among heart disease patients resulted in \$428 million in billed charges.
- Medicare and TennCare beneficiaries accounted for 82% of these readmission charges.



Data source: Tennessee Department of Health; Office of Health Statistics; Hospital Discharge Data System (HDDS).

Exclusion criteria: Admission records without sufficient identifiable information were excluded. If a patient was admitted multiple times due to heart disease, only the first admission was counted as the initial admission. Patients younger than 35 years of age were excluded. Admissions occurring in December 2009 or earlier were excluded. Patients discharged to places other than home, such as a short term hospitals, designated cancer centers, children's hospitals, critical access hospitals or other types of healthcare institutions were excluded. Patients who died at home, in a medical facility or in an unknown place were excluded.

Disease classification: Initial admissions with a principal diagnosis of heart disease were defined using ICD-9-CM codes 390-398, 402, 404, and 410-429. Readmissions were identified regardless of diagnosis.

Age-adjustment: Rates were adjusted to the 2000 U.S. standard population for age 35 years and older using 10-year age intervals.

Acknowledgement: This factsheet was prepared by Zhaoliang Li, a student in the Master of Science in Professional Science program at the Middle Tennessee State University, under the supervision of Dr. Yinmei Li, Surveillance, Epidemiology and Evaluation section; Division of Policy, Planning and Assessment; Tennessee Department of Health. The author would like to thank MTSU and TDH for their professional and administrative support.