black, less educated, having difficulty taking their medications, female and with more advance NYHA class. Screening such HF patients and providing greater education may enhance their ability to participate in actively managing their HF.

11:00 a.m.

889-3 Estimating Life-Years Lost Due to Atherothrombotic Events: Flexible Survival Functions for Use in Disease Modeling
J. Jaime Caro, Kristen Migliaccio-Walle, K. Jack Ishak, William S. Weintraub, Caro Research Institute, Concord, MA, Emory University, Atlanta, GA

Background: The cost-effectiveness of new interventions is of growing importance. Researchers must now translate trial findings to costs per life year gained to enable comparability, making proper estimation of survival after a morbid event an essential task. This analysis must account for the patterns of events observed in the trial.

Methods: Records of all acute myocardial infarctions (MI) occurring in Saskatchewan during the years 1990-1995 were obtained. Patient characteristics and medical history were available from January 1980; follow-up was complete to December 2000. Functions were fit to observed, time-dependent, mortality hazards for: all patients, acutely non-fatal atherothrombotic event, or no subsequent event. The resulting survival curves were integrated to obtain the mean survival; life years lost due to additional events were derived by subtracting the pattern-specific life expectancy from that of no events.

Results: Over the mean 5.1 years of follow-up, 48% of the 15,590 patients (64% male; mean age 69 years; 24% diabetic; 30% previous MI or stroke; 61% hypertensive) died. In the first 9 months, 5% suffered a non-fatal MI, 1% a non-fatal stroke, and 72% had no non-fatal events. The hazard functions indicate high risk of death immediately following the index MI, but risks drop sharply as time passes without an event. Subsequent events led to renewed risk. The integrated survival curves reveal the impact of additional events. For example, a 65-year-old man has a life expectancy of 9.6 years immediately after an MI. This increases to 10.8 years if he survives the first week and to 11.7 years if he survives through 9 months with no further events; 4.4 years are lost if a second MI occurs, 7.2 years with a stroke.

Conclusion: These techniques yielding detailed survival functions enable researchers to avoid the inaccuracies introduced by using average, unadjusted, life expectancies from non-specific populations. They allow extensive customization to obtain life-years lost due to additional events.

11:15 a.m.

889-4 Cost-Effectiveness of Carvedilol Versus Metoprolol Tartrate for Patients With Heart Failure
Paul A. Heidenreich, VA Palo Alto Health Care System, Palo Alto, CA, Stanford University, Stanford, CA

The Carvedilol or Metoprolol European Trial in Patients With Chronic Heart Failure (COMET) observed a mortality benefit for carvedilol over metoprolol tartrate. However, the cost-effectiveness of carvedilol is unclear.

Methods: We used a Markov model to simulate lifetime outcome and cost of care using COMET data. The age of the cohort was 62 years and 80% were male. Carvedilol improved survival (hazard ratio for death 0.87) but was assumed to increase drug cost by $1,062 per year. Per COMET, we assumed no difference in hospitalizations. The model used societal perspective, costs adjusted to 2002 dollars, and a discount rate of 3%. Survival was calculated as both life years and quality adjusted life years (QALYs) using a time-tradeoff utility of 0.71 for symptomatic heart failure.

Results: Carvedilol treatment increased the lifetime discounted cost of care by $10,330 and discounted survival by 0.73 years. (0.52 QALYs). The incremental cost-effectiveness of carvedilol was $14,240 per life-year gained ($20,050 per QALY gained). Carvedilol remained economically attractive even if the benefit did not persist following the end of the trial (5 years, Figure). If the benefit of carvedilol in women is as reported by COMET (hazard ratio 0.97) then carvedilol is less economically attractive ($66,830 per life-year gained, $90.80 per QALY gained).

Conclusion: Compared to metoprolol tartrate, carvedilol improves outcome for heart failure patients at a cost that is less than other commonly accepted medical treatments.

11:30 a.m.

889-5 Looking Proximally to Understand Distal Outcomes: Gender Differences in Mortality After Acute Myocardial Infarction
Padma Kaul, Cynthia M. Westerhout, Wei-ching Chang, Paul W. Armstrong, University of Alberta, Edmonton, AB, Canada

Background: Conventional population studies examining possible gender bias in process of care and outcomes of acute myocardial infarction (AMI) have been restricted to the inpatient setting. To be comprehensive, these evaluations should ideally incorporate more proximal care, i.e., at presentation to the emergency department (ED).

Methods: Between April 1998 and March 2000, 3539 (3622 Males; 1687 Females) residents of Alberta, Canada presented to hospital EDs with a primary diagnosis of AMI (ICD-9-CM 410.xx).

Results: AMI patients (pts) who died in the ED (n=213) or who were not admitted (n=406) accounted for 12% of the population and 29% of 1-year deaths (Figure). One-year cardiovascular (re)admission rates were 48% among the AMI cohort initially admitted and 30% among those discharged from the ED (p<0.01). Among AMI pts who did not die in the ED, women were older (median age 72 y vs. 63 y among males, p<0.01); were more likely to be discharged (9.5% vs. 7.3%, p<0.01); received fewer cardiac procedures by 1-year; and had higher 1-year mortality (18.1% vs. 11.7% p<0.01). However, the difference in mortality disappeared after accounting for age (p=0.89).

Conclusion: Our examination at a more proximal point of care (ED) identifies a key high-risk segment of the population accounting for 29% of AMI deaths. Future analyses should therefore incorporate pts who died in the ED and those who were discharged. The finding of higher rate of discharge of women with AMI from the ED is intriguing and deserves further exploration.

11:45 a.m.

889-6 A Simple Model Using the MUSTT Database Can Stratify Total Mortality and Sudden Death Risk of Coronary Disease Patients

Background: Many factors besides ejection fraction (EF) impact on prognosis of patients (pts) with coronary disease (CAD). We reasoned that consideration of multiple parameters should enable more precise risk stratification of CAD pts considered for defibrillator (ICD) implantation for primary prevention of sudden death.

Methods: Using a Cox model we found 24 noninvasive and invasive parameters that influence total mortality (TM) and arrhythmic death or cardiac arrest (AD/CA) in all 1791 patients enrolled in the Multicenter Unsustained Tachycardia Trial (MUSTT) who did not receive antiarrhythmic therapy. Five factors had the greatest impact on events: digitalis use at time of enrollment, discovery of unsustained ventricular tachycardia (NSVT) >10 days after bypass surgery (CABG), EF <=30%, Age >=65 years, presence of IVCD or