Appendix 4: Supplemental Figures
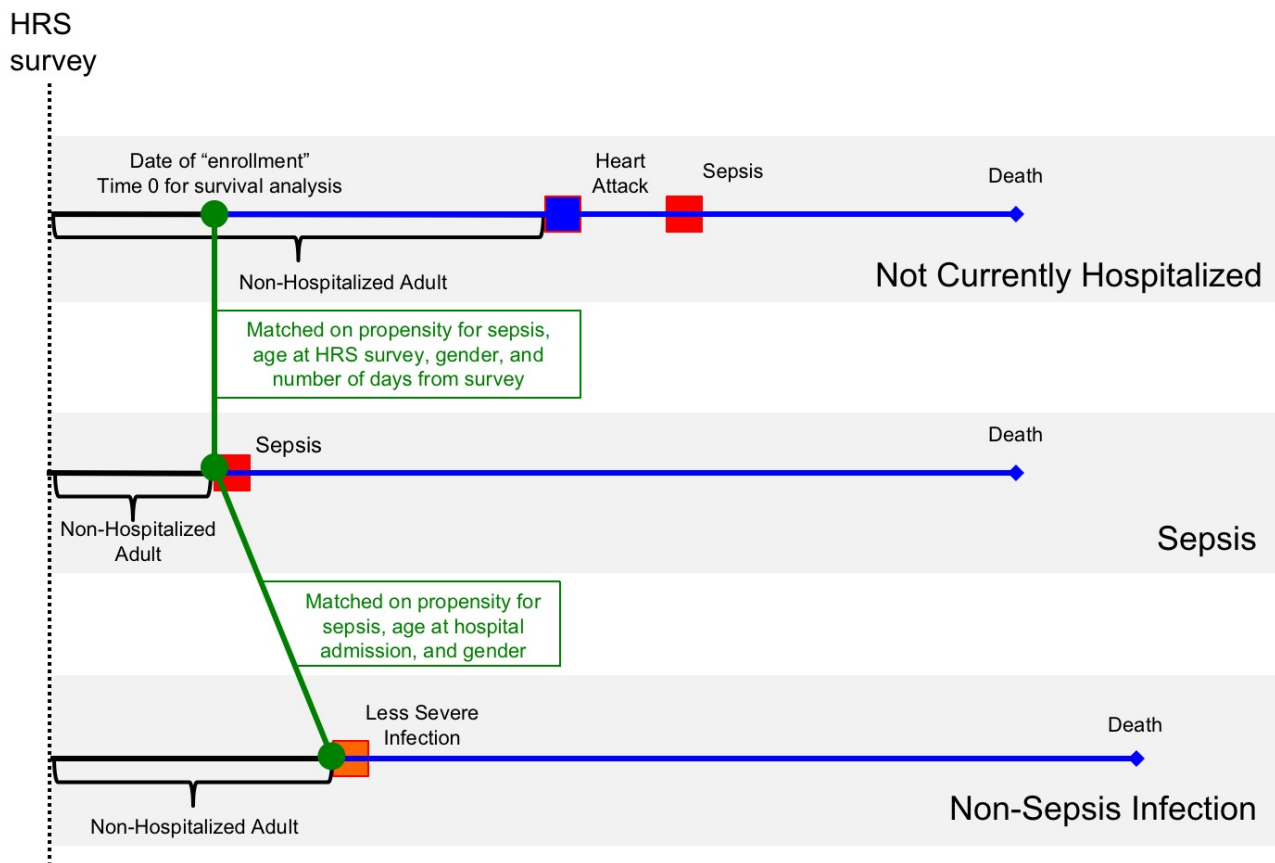
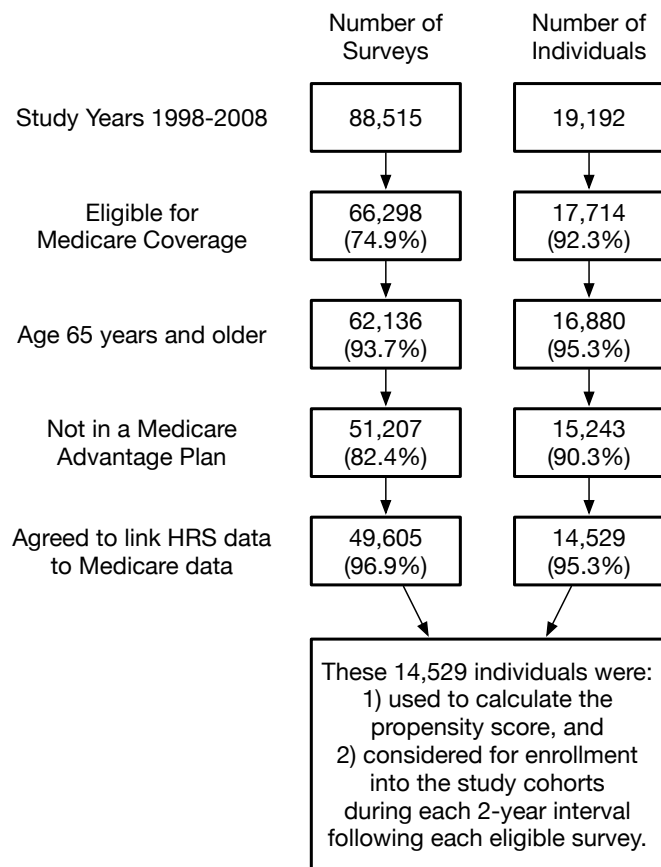**eFigure A: Conceptual Diagram of Propensity Matches**

This figure depicts the two approaches to matching used in this study. Note that the three patients depicted in this figure have equivalent survival from the time of their match, although the "time 0" for the non-sepsis infection patient is different relative to HRS survey than the time 0 for the sepsis patient.

We matched sepsis patients to non-hospitalized adults by age at HRS survey, number of days from HRS survey, gender, and propensity for developing sepsis. For the purposes of survival analysis, "time 0" for the non-hospitalized adults was the day of the match. The non-hospitalized adults were alive and not hospitalized for each consecutive day from HRS survey to the time of their match to a sepsis patient. However, there were no restrictions placed on hospitalizations after the match. Thus, many of the non-hospitalized adults were hospitalized after their date of match to sepsis patients, as depicted in this figure.

We matched sepsis patients to patients hospitalized with non-sepsis infection (or sterile inflammation) by age at hospitalization, gender, and propensity for developing sepsis. Here, the day of hospital admission is considered "time 0" for the survival analysis.

eFigure B: Study Flow

	Number of Surveys	Number of Individuals
Study Years 1998-2008	88,515	19,192
Eligible for Medicare Coverage	66,298 (74.9%)	17,714 (92.3%)
Age 65 years and older	62,136 (93.7%)	16,880 (95.3%)
Not in a Medicare Advantage Plan	51,207 (82.4%)	15,243 (90.3%)
Agreed to link HRS data to Medicare data	49,605 (96.9%)	14,529 (95.3%)

These 14,529 individuals were:
1) used to calculate the propensity score, and
2) considered for enrollment into the study cohorts during each 2-year interval following each eligible survey.

This figure depicts both the number of individuals and surveys (conceptually, these can be thought of as 2-year periods of observation) in the Health and Retirement Study during study years 1998-2010. This figure also shows how individuals and surveys were excluded based on each inclusion criteria and the final number of individuals and surveys that were eligible for potential inclusion into our study. Selection of the final cohort from the 14,529 eligible participants is shown in **Figure 1** in the main manuscript. In total, the 14,529 eligible participants contributed 95,056 person-years of data and had an incidence of sepsis hospitalization of 35 per 1,000 person-years, which is similar to other recent estimates of sepsis incidence in older Americans (Iwashyna, *et al*. *JAGS*. 2012).

eFigure C: Adjusted 30-Day to 2-Year Mortality of Matched Study Cohorts, by Less Recent versus More Recent Study Time Periods
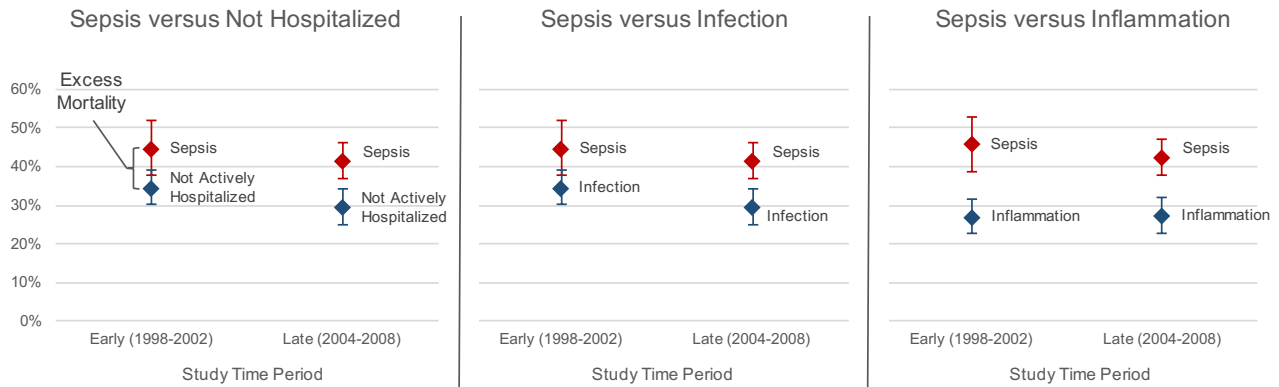
In this supplemental analysis, we entered study period (less recent = biennial HRS survey years 1998-2002; more recent= biennial HRS survey years 2004-2008) into the model, as well as an interaction between study period and sepsis (to account for the possibility that sepsis-related mortality may be declining at a different rate than other hospitalization-related mortality). Using the margins command in stata, we calculated adjusted mortality in the 30-days to 2-years after sepsis versus each comparison cohort by study time period. While there is some variation in mortality between the early and late study time periods, the overall trends are consistent.