Comparative effectiveness research entails combining relevant data from disparate sources. Information about the effect and effectiveness of a treatment strategy on a disease, such as cancer or heart disease, may come from randomized clinical trials (RCTs), early phase non-randomized studies, and hospital or payer databases. In general, RCTs are considered to provide the highest level of evidence for comparing treatments. Including historical information, however, could improve efficiency of the trial by reducing the current study’s required sample size and, possibly, by helping to put the ultimate results of the study in an appropriate context for comparing effectiveness of the new treatment to that of the standard of care. One needs to account for inherent differences between the studies, however, because heterogeneities may bias the inference. In this talk, I discuss some of the advantages the Bayesian approach to inference offers when carrying out comparative effectiveness research. In particular, I will present a flexible inferential model that uses Bayesian nonparametric methods to characterize prior uncertainty in the data and allows for borrowing strength when appropriate while also accommodating heterogeneities between data sources.