Abstract: We study development of mortality tables from 1950 to present in Czech Republic. Our aim is to look at the 6 basic models, which can be potentially used to describe behavior of dying for people over 60 years. Models that are being investigated vary from generally accepted Gompertz-Makeham model to logistic models of Thatcher and Kannisto. We also introduce Coale-Kisker and Heligman-Pollard model. Our analysis is concentrated mostly on projecting abilities of given models to the highest ages. Especially for women, where data do not show such dispersion as in the case of men, there is a visible trend that can be described better by using logistic models instead of Gompertz-Makeham model, which has a tendency to overestimate the probabilities of dying in higher ages.