In an attempt to improve our ability to predict the outcome of NBA games, we seek to model both end-game score differential and playing time for players and team lineups. To do this, we calculate scoring rates for each lineup and create stochastic lineup substitution models for all 30 teams. We examine different linear and non-linear methods to calculate the lineup scoring rates. The substitution model involves a continuous-time Markov Chain for each team in which the transition rates were inferred from the data. Training on 2014-15 and 2015-16 NBA regular season play-by-play data, we compare results of our proposed method for simulating and predicting playoff games to that of our previous study based on lineup and player play-time, point-spread accuracy, and predicted winners.