The presence of a firearm in a violent incident massively increases the likelihood of mortality. Firearms are central to interpersonal violence and their lethality results in both non-fatal and fatal injuries that have enormous human and economic costs. This study investigates the possible risk factors for homicide by firearm discharge in night time Johannesburg, South Africa. Specifically, this study analysed data originating from the National Injury Mortality Surveillance System (NIMSS) which is an epidemiological surveillance system of fatal injuries. The sample was drawn from the NIMSS database for homicides in Johannesburg for the years 2001–2005. This database consists of 9484 subjects of which 5153 were victims of night time homicide. A binary logistic regression model was utilised in order to identify the likelihood of particular risk factors occurring in certain groups of people and contexts. This study demonstrated that sex and time at night are particularly important risk factors for night time firearm homicide. While the results were less pronounced for age, race and location, these factors still clearly place individuals at risk. Additionally, alcohol is an important factor that contributes to the variance in firearm homicide. The presentation concludes with a discussion of some of the possible implications the results might have for future preventive efforts.