The health of a mother impacts the family and even the entire community. Her ability and access to receive necessary healthcare largely determines health outcomes for herself and her baby. Despite the national policy of promoting maternal health through promoting informed choice, service accessibility and improved quality of care through the national Safe Motherhood Programme (SMP), it remains a challenge to the Ugandan government as to how it would achieve its 2015 Millennium Development Goals of reducing maternal mortality rates. Like many developing countries, Uganda has high maternal mortality rates, which often reflects access to health care services for some reasons. Mistreatment from healthcare personnel as an additional reason to avoid seeking professional care during pregnancy and labor and lack of health literacy are some of the reasons. Hence, pregnant women and their unborn babies are particularly susceptible to complications during pregnancy. The behavior and clinical factors determine complications during pregnancy. The time one starts engaging in sexual act, the frequency, sexually transmitted infections/diseases, malaria incidence, other diseases like tuberculosis, asthma, heart disease and kidney disease are important for maternal health and mortality. These may work through the intermediate factors such as knowledge about complications in pregnancy, acceptability and accessibility of health services. This presentation will describe how ones behavior and clinical factors links to complication in pregnancy, employ statistical methods to identify important factors and determine their optimal levels. The factors identified are studied to determine their relative effect on complications during pregnancy using statistical methods. The key words, behavior change and clinical matters are of paramount importance in order to improve maternal health and mortality.