Introduction: According to the WHO (2014) report, Low birth weight still stands as the major health concern publically in most developing countries. Its burden has been found to be diverse in different settings. It is globally estimated that eighteen million LBW babies are born every year, making up nearly 16% of all live births and more than 95% of the low birth weight babies are born in developing countries as compared to developed countries 7% as by (WHO,2014) report. Different studies have documented several factors that influence low birth weight births in different settings. According to this study, no study looking at an aggregate of these factors had been done at Mulago hospital so this study aimed at looking at the factors influencing low birth weight with an aim of addressing them to improve infant outcomes.

Methods: This was a cross sectional study done in Mulago Referral hospital complex. Two hundred and eleven babies born and admitted on 5th floor, Old Mulago Post natal wards and special care unit were consecutively recruited in the study.

Results: Low Birth Weight prevalence is39.3%, attending once or twice was of a significant association with underweight (P value: 0.049, 0.001 and 0.000) respectively. Other factors significantly associated with Low birth weight included preterm births (P value 0.000), lack of Iron and folate supplementation during pregnancy (p- value 0.035) and twin pregnancy (P- value 0.017).

Conclusion: This study demonstrates the prevalence of babies with LBW in Mulago at 39.3%. Factors that demonstrated a significant association with LBW included; ANC visit of two times or less, twin pregnancy, lack of folate and iron supplementation and preterm births. We recommend for more emphasis and focus on these factors during ANC by midwives and better designed studies to closely examine the other factors that were not associated in this study.