

PA-099 **VARIATION IN NEONATAL MORTALITY AND ITS RELATION TO COUNTRY CHARACTERISTICS IN SUB-SAHARAN AFRICA**

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**Background** A substantial reduction in neonatal mortality is the main priority to reduce under-five mortality. A clear understanding of the variation in neonatal mortality and the underlying causes is important for targeted intervention. We aimed to explore variation in neonatal mortality and identify underlying causes of variation in neonatal mortality in sub-Saharan Africa.

**Methods** This ecological study used publicly available data from the World Health Organization, United States Agency for International Development and World Bank. Variation in neonatal mortality across 49 sub-Saharan Africa countries was examined using control chart and explanatory spatial data analysis. Associations between country-level characteristics and neonatal mortality were examined using linear regression analysis.

**Results** The control chart showed that 28 (57%) countries exhibited special-cause variation, fourteen countries were below and above the 99.8% control-limits. The remaining 21 (43%) countries showed common-cause variation. No spatial clustering was observed for neonatal mortality (Global Moran's I statistic = 0.10;  $p=0.74$ ). Linear regression analysis showed HIV/AIDS prevalence among the population of reproductive age to be positively associated with neonatal mortality ( $\beta$  0.463; 95% CI 0.135 to 0.790;  $p$ -value  $<0.01$ ). Declining socioeconomic deprivation ( $\beta$  -0.234; 95% CI: -0.424— 0.044;  $p$ -value  $<0.05$ ) and high quality of healthcare governance ( $\beta$  -1.327, 95% CI -2.073— 0.580;  $p$ -value  $<0.01$ ) were inversely associated with neonatal mortality.

**Conclusion** This study shows a wide variation in neonatal mortality in sub-Saharan Africa. A substantial part of this variation can be explained by differences in the quality of healthcare governance, prevalence of HIV and socioeconomic deprivation.