

**IDENTIFICATION AND SUSCEPTIBILITY PATTERNS OF BACTERIAL  
ISOLATES FOR NEONATES WITH SEPSIS AT KENYATTA NATIONAL  
HOSPITAL.**

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**DECLARATION**

This dissertation is my original work and has not been presented for a degree in any other university.

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## **DEDICATION**

This work is dedicated to my family whose love and support never fails.

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## **LIST OF ABBREVIATIONS**

Ecoli- Escherichia coli

CONS- Coagulase Negative Staphylococci

ESBL- Extended Spectrum Beta lactamase

GBS- Group B Streptococcus

GNB- Gram Negative Bacilli

GPC- Gram positive Cocci

KDHS -Kenya Demographic and Health Survey.

KNH- Kenyatta National Hospital.

NBU- New Born Unit.

PFC- Paediatric Filter Clinic.

SPSS- Statistical Package for Social Sciences.

UNITID- University of Nairobi Institute of Tropical and Infectious Diseases.

UoN- University of Nairobi

WHO- World Health Organisation.



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## **DEFINITION OF TERMS**

**Neonate:** an infant in the first 28 days after birth.

**Sepsis:** whole body inflammation caused by an overwhelming immune response to infection.

**Neonatal sepsis:** sepsis in the first 28 days after birth.

**Early onset sepsis:** sepsis within the first 72 hours of life.

**Late onset sepsis:** sepsis presenting after 72 hours of life.

**Incidence:** number of new cases of a condition.

**Nosocomial infection:** infections acquired in hospitals and other healthcare facilities.

## ABSTRACT

**Background:** Neonatal sepsis is a leading cause of neonatal mortality in both developed and developing countries. The incidence varies from country to country but is higher in developing countries. The causative organisms vary from time to time and from region to region and even within the same hospital. These causative organisms have developed increased drug resistance. The local epidemiology of neonatal sepsis should be constantly updated in order to detect changes in the pattern of causative organisms and their susceptibility to various antibiotics so as to better guide the treatment of neonatal sepsis.

**Objective:** The purpose of this study was to determine the bacterial aetiologic agents of neonatal sepsis at Kenyatta National Hospital (KNH) and the susceptibility of these organisms to commonly used antibiotics. An attempt was also made to identify some of the possible neonatal risk factors contributing to the development of sepsis.

**Methodology:** The study was a retrospective cross sectional study involving review of patients' positive blood culture reports and patients' files.

**Results:** The gram negative and gram positive bacteria constituted 116(51.3%) and 96(42.5%) of the culture isolates respectively. The predominant bacteria isolated from blood culture were Coagulase Negative Staphylococci(30.1%), *Enterobacter spp*(19.9%), *Citrobacter spp* (12.8%) *Klebsiella spp* (11%). The isolates showed high rates of resistance to most antibiotics tested.

**Conclusion:** Gram negative organisms (*Enterobacter spp*, *Citrobacter spp*,*Klebsiella spp*) and coagulase negative staphylococci were the leading cause of neonatal sepsis. Most of them showed high rate of resistance to commonly used antibiotics used to treat neonatal sepsis.