



# INJ. GENTAMICIN IN NEONATAL SEPSIS BY ANMS BEFORE REFERRAL



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## EXECUTION SUMMARY

Sepsis is the commonest cause of neonatal mortality, responsible for about 30-50% of the total neonatal deaths in developing countries. According to Operational guidelines on the use of gentamicin, ANMs are expected to recognize signs of suspected sepsis and provide pre-referral treatment to those neonates with suspected neonatal sepsis. But there is a paucity of the literature, that assesses the ground-level scenario of this strategy and its implication. Health Technology Assessment (HTA) been the chosen approach to explore this question.

Cost-effectiveness was assessed using the Decision tree model utilizing data from secondary literature. ICER was calculated to be Rs.216.98 cost per QALY gained. This economic evaluation shows, it is cost-effective for ANMs to administer a pre-referral injection of Gentamicin along with oral Amoxicillin to neonates suspected of sepsis.

### Operational Guidelines

Use of Gentamicin by ANMs for management of sepsis in young infants under specific situations



## POLICY RECOMMENDATIONS

- The current Economic evaluation depicts the administration of a pre-referral injection of Gentamicin along with oral Amoxicillin to neonates suspected of sepsis by ANMs to be cost-effective.
- Further studies are needed to assess the acceptability of the program from the beneficiary perspective and ANM's perspective.

## BACKGROUND

Sepsis is the commonest cause of neonatal mortality; it is responsible for about 30-50% of the total neonatal deaths in developing countries. (1)(2) India has the greatest incidence of clinical sepsis (17,000/1,00,000 live births) among the three million yearly neonatal sepsis cases (2202/ 1,00,000 live births) globally. (3) Under the current health system, ANMs are responsible for the delivery of the Reproductive and Child Health Programme. According to Operational guidelines on the use of Gentamicin by ANMs for the management of sepsis in young infants (0-2 months) under specific situations in February 2014, ANMs are trained to administer appropriate antibiotic treatment for the management of cases of suspected sepsis in a newborn where referral is not feasible or refused; pre-referral or for the completion antibiotic treatment.

## METHOD & APPROACH

Two scenarios were compared, a pre-referral dose of Gentamicin by ANM and treatment in the health facility for neonates with signs of sepsis with the current scenario where no pre-referral dose of Gentamicin is given by ANM to the infant with sign of sepsis and treatment in the health facility. ICER of pre-referral dose of gentamicin versus no-pre-referral dose and treatment at health facility was calculated to be Rs.216.98 cost per QALY gained. One-way sensitivity analysis was done to show the effect of input parameters on the ICER.

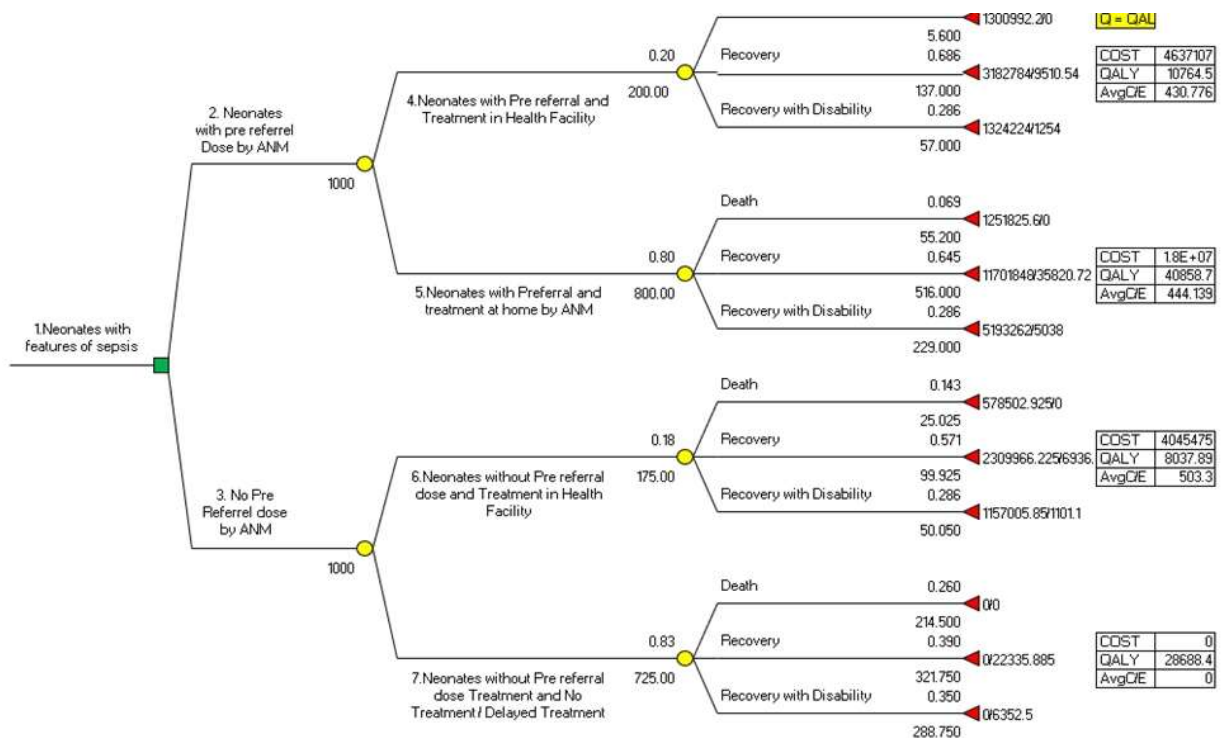


FIGURE 1 DECISION TREE

## FINDINGS

A Decision tree model was used for estimating the cost and effectiveness for the neonates with the sign of sepsis administered a pre-referral dose of Inj. Gentamicin by ANM along with oral amoxicillin. The pre-referral dose of inj. Gentamicin along with oral amoxicillin was compared with current practice i.e. neonates with a sign of sepsis is directly referred to referral centre without any pre-referral dose of an antibiotic.

The health outcomes were assessed in terms of Quality Adjusted Life Years( QALY) and cost-effectiveness in terms of incremental cost-effectiveness ratio (ICER) between intervention and comparator arm.

Literature review was conducted to get the secondary data on effectiveness of the regime, transition probabilities and health system cost. Feasibility, accessibility, and availability of ANM was determined by consultation exercise.

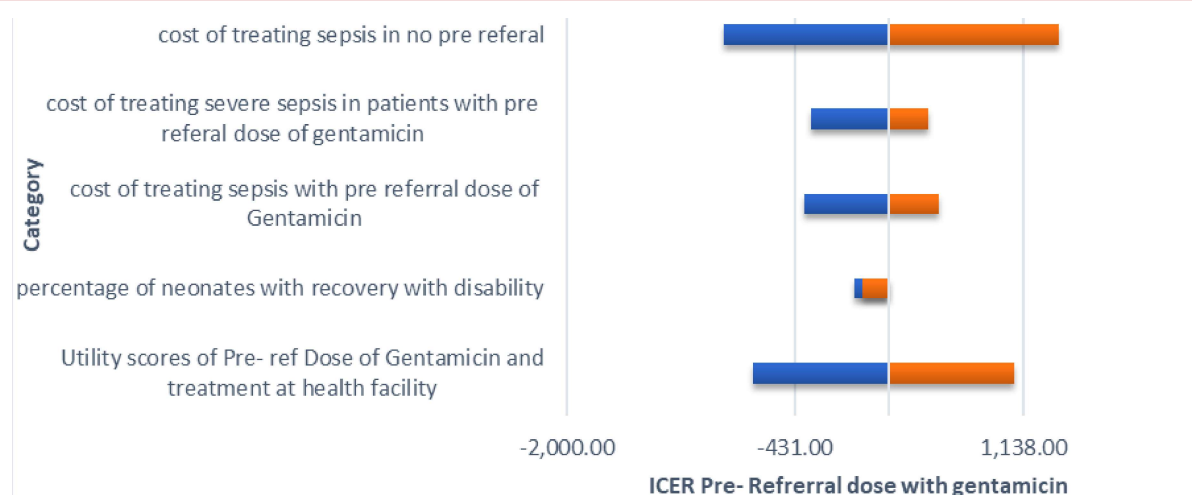


FIGURE 2 TORNADO DIAGRAM

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