

# Cost-Effective Analysis of the Congenital Hypothyroidism Screening Program in Sri Lanka

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**Introduction:** Economic evaluations will determine policy decisions on any screening programs as estimates of short-term or long-term clinical and economic outcomes are analyzed through a systematic approach. This cost-effectiveness analysis was aimed to assess newborn screening for congenital hypothyroidism (CH) in Sri Lanka as an important tool to allocate funds and make decisions on feasibility of new interventions with budget constraint in healthcare costs.

**Methods:** The newborn screening database was retrospectively analyzed to assess key performance indicators of the program. Program cost included capital investment, sampling, forms, analytical cost, follow-up, and confirmatory costs. Treatments and management care were calculated up to the age of 75 years excluding other cost to the family for support. Total benefits to the society and disability-adjusted life-years are calculated for each year.

**Results:** During 2019, 159 559 newborns underwent screening with over 92% coverage while 126 babies of 192 screening positive babies were confirmed as having the disease. The annual incidence of hypothyroidism was 1 in 1266 live births among the screened population. The positive predictive value of the program was 66% with a false-positive rate of 0.04% among those screened. The benefit-to-cost ratio was 3.60 with total cost of the program 98 924 300LKR with total benefit of 356 553 781LKR in 2019.

**Conclusion:** The CH screening program proved its effectiveness in both timely detecting at-risk babies as well as being appropriately effective in economic impact to society. The improved health outcomes are of utmost importance considering screening expansions and policy decisions.

**Keywords:** congenital hypothyroidism, newborn screening, cost-benefit analysis, cost-effectiveness.