rWGS in Critically Ill Infants

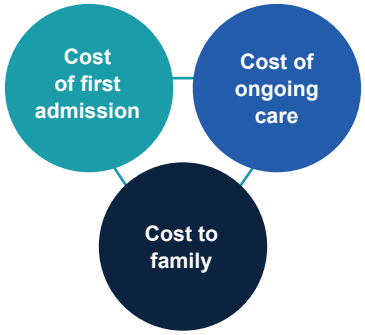
Cost Savings and Improved Quality of Life

Rapid Precision Medicine™ in critically ill infants can improve outcomes, reduce costs and decrease the burden on families and caretakers. Early implementation of rapid Whole Genome Sequencing™ (rWGS®) is becoming standard for these infants. An early, accurate molecular diagnosis can provide vital information to inform optimal treatment, prognostication and end of life decisions.

Here, we report cost effectiveness of rWGS-informed Rapid Precision Medicine in a cohort of 325 critically ill infants. We examined quality-adjusted life years (QALYs, number of years of perfect health) gained and net impact on immediate and longer-term healthcare costs.

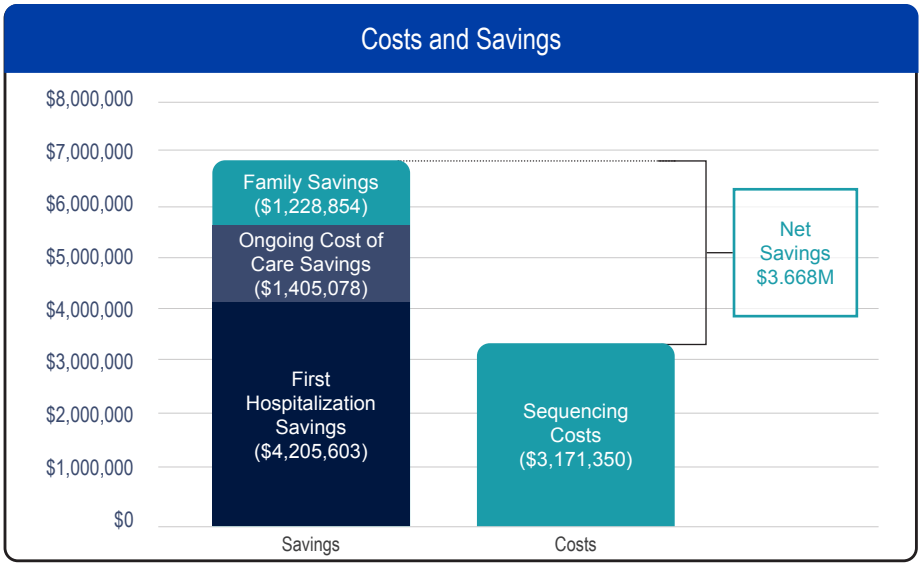
APPROACH

We modeled three types of costs in six case studies to understand the potential savings associated with Rapid Precision Medicine™.



SUMMARY

- In a cohort of 325 critically ill infants, rWGS provided a net healthcare savings of $3,668,185 while simultaneously improving outcomes
- Rigorous modeling showed 98.6 QALYs were gained in six infants where rWGS informed early, effective changes in treatment than would have been possible without early rWGS
- Ongoing costs modeled for six cases across the five-year, follow-up period were 64% lower with prompt, accurate intervention than would have been possible without early rWGS



If applied to ~2,500 Medi-Cal infant admissions (without a clear etiology) to California Neonatal Intensive Care Units (NICUs), net savings from rWGS are estimated to be $11,286 per patient. Total healthcare savings per year are estimated to be $28,216,809 with total QALYs gained at 758.5 per year.

~250,000 Medi-Cal covered infants born per year

2,500 infants receiving rWGS®

Effective change in treatment

758.5

QALYS gained

$28m

Net Savings

Rady Children's Hospital San Diego

Michigan and Florida are exploring options to make rWGS available to children in their states.

Rady Children's Institute Genomic Medicine®