CLINICAL EVIDENCE BRIEF

Rapid whole genome sequencing as a first-line test in the NICU/PICU

Standard genetic workup takes weeks. A critically ill child doesn't have weeks. Rapid whole genome sequencing (rWGS) returns actionable answers in days, helping clinicians make more informed treatment decisions.

~3 days
median time to diagnosis with rWGS[1]

1 in 3
critically ill infants get a change in management from the result[1,2]

< 5%
of eligible patients currently receive rWGS[3]

> *Used first-line, rWGS changes management in* **up to 87% of diagnosed babies**[4,a] *and saves* **up to $15,786 per child sequenced,**[1] *largely by shortening hospital stays.*

What a diagnosis can change

- **Minimizes invasive procedures:** rWGS diagnoses have allowed clinicians to avoid biopsy and other invasive workup.[5]
- **Redirects to targeted treatment:** documented changes include initiating factor replacement and genome-informed adjustments to pharmacotherapy.[5]
- **Defines recurrence risk:** a molecular diagnosis gives families clear recurrence information for future pregnancies.

Guidelines and payer coverage are evolving

- **ACMG** recommends exome or genome sequencing as first- or second-tier testing for congenital anomalies, developmental delay, and intellectual disability.[6]
- **State Medicaid coverage is increasing over time,** with commercial payers following.[7]

One comprehensive test

A single whole genome test can detect six variant classes at once, so you stop ordering sequentially.

SNVs · CNVs · Genome-wide del/dups · Mitochondrial variants · Repeat expansions · Regions of homozygosity

Fast enough to act on

- ✓ **Preliminary report in as few as 2 days** — the most relevant pathogenic and likely pathogenic variants, so you can act while comprehensive review continues.
- ✓ **RNA-integrated analysis** — an optional add-on to help increase diagnostic yield and resolve variants of uncertain significance.
- ✓ **Reanalysis is included** as part of your original test order, if the phenotype evolves (limitations apply).

RAPID
FulGenome
Whole Genome Sequencing

Stop guessing. Start treating.

See how Fulgent's rapid WGS fits your NICU/PICU workflow.
info@fulgentgenetics.com

References 1. PMID 34089648 · 2. PMID 38440187 · 3. PMID 38413639 · 4. PMID 39999847 · 5. PMID 31246743 · 6. PMID 34211152 · 7. Rady Children's Institute for Genomic Medicine, Payer Policy & Advocacy. https://radygenomics.org/clinical-genome-services/payer-policy-advocacy/

a. The 87% (ref. 4) is among diagnosed newborns. The figure is roughly 41% for all newborns tested. *Project Baby Bear* (ref. 1) reports 32% of all infants tested with a major change in medical care.

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