

MARYLAND LONG COVID ROI MODEL

Benefit-Cost Ratio: Scope and Measurement Disclosure

Wail of a Tale Productions

501(c)(3) Nonprofit Organization

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25.1:1

BENEFIT-COST RATIO

FORMAL LABEL: Gross Social Welfare Benefit-Cost Ratio (3% Discount Rate, 3-Year Horizon)

Analytical framework: Benefit-cost analysis using peer-reviewed literature applied to Maryland state population and economy. Benefits are summed across seven quantifiable categories using program-specific attribution rates applied to Maryland epidemiological and economic inputs. Costs are direct state program outlays only.

Sensitivity range: 18.8:1 (conservative, 30% transmission reduction) to 37.6:1 (optimistic, 60% reduction). BCR is positive across all four tested scenarios.

THIS RATIO COMPUTES

- ✓ **Workforce productivity losses recovered** Maryland median wage \$65,321 (BLS OEWS May 2024); 35% productivity loss rate; 185,380 affected workers.
- ✓ **Reduced workplace absenteeism** 20 lost workdays recovered per affected worker; 15% workforce participation improvement.
- ✓ **Healthcare cost avoidance across affected population** \$9,000 per case annually (Bansal 2025; Bartsch et al. 2025 range \$5,084 to \$11,646). Conservative floor used throughout.
- ✓ **Reduced disability insurance claims inflow** 15% disability rate (midpoint CDC 10% floor and NASEM 2024 22% ceiling); \$18,000 annual SSDI value, 2.4% below actual 2024 SSA average.
- ✓ **Educational outcome improvements for affected children** 65,596 Maryland children with Long COVID (corrected February 2026); \$5,000 per child incremental IEP/504/accommodation cost (IDEA Part B methodology).
- ✓ **Early cancer detection savings** 67 to 131% elevated HPV-related cancer risk post-COVID (Shih et al. 2025). \$75,000 savings per early detection; health system savings only at 50% net factor.
- ✓ **Reduced emergency department utilization** 10% ED visit rate among Long COVID population; \$1,500 Maryland average ED visit cost (HSCRC 2024); 25% recovery reduction applied.

THIS RATIO DOES NOT COMPUTE

- ✗ **Federal fiscal returns not isolated** Net savings to Medicare, Medicaid, SSDI, and federal payroll tax revenue are not separated from total societal benefit.
- ✗ **OMB Circular A-94 compliant BCR not computed** The required 7% real discount rate and federal opportunity cost of capital are not applied. This model uses the 3% OMB social rate of time preference.
- ✗ **Transfer payments not netted out** SSDI payments are fiscal transfers between parties. They are included in benefit calculations but are not netted per OMB Circular A-4 standards.
- ✗ **Value of statistical life not monetized** Mortality reductions from documented reinfection death risk (+117%, Bowe et al. 2022) are not monetized. EPA/DOT VSL of \$9M to \$13M per statistical life is excluded.
- ✗ **State and local cost-sharing not reflected** Non-state implementation costs, county matching requirements, and local program stand-up costs are not modeled.
- ✗ **Post-Year 3 infrastructure costs not included** Ongoing maintenance liability for clean air systems across 1,401 Maryland public schools is not modeled beyond the 3-year analysis window.
- ✗ **Caregiver burden not included** Unpaid family labor costs associated with Long COVID disability and pediatric care are not monetized.

WHAT AN OMB DUAL-FRAME ANALYSIS OF THIS MODEL WOULD ADDITIONALLY REQUIRE

An OMB Circular A-94 federal fiscal BCR applied to this Maryland model would isolate only returns that flow back to specific budget accounts: reduced Medicaid expenditures, reduced SSDI caseloads, increased Maryland income and payroll tax revenues from workers retained in the labor force, and reduced state disability program costs. Transfer payments between parties would be excluded. The discount rate would be 7% real rather than 3%. A full dual-frame analysis would present both ratios side by side, require explicit attribution of benefit fractions to each program category, and separate Tier 1 evidence from Tier 2 and Tier 3 estimates. This model does not perform that separation. The 25.1:1 BCR reported here is a gross social welfare return, not a federal or state fiscal return, and should not be represented as OMB-compliant.

The dual-frame OMB analysis is available upon request. To request the Federal Long COVID ROI Model with isolated federal fiscal returns and an OMB Circular A-94 compliant BCR, contact Marty Pack at marty@wailofatale.org or 312.835.4033.

Next steps: Wail of a Tale Productions will develop a Maryland-specific OMB dual-frame model for the State of Maryland. The existing Federal Long COVID ROI Model, which presents both gross social welfare and isolated federal fiscal returns, will be shared directly with the office of Senator Angela Alsobrooks.