

HEIM: Health Equity Informative Metrics

Framework for Evaluating Alignment Between Genomic Research Output and Global Disease Burden

A

Core Formulation

Equity Alignment Score (EAS)

$$EAS = f(\text{Gap, Burden, Capacity})$$

■ Gap Severity

Mismatch between research output and disease burden

■ Burden Miss

High-burden diseases with little or no genomic research coverage

■ Capacity Penalty

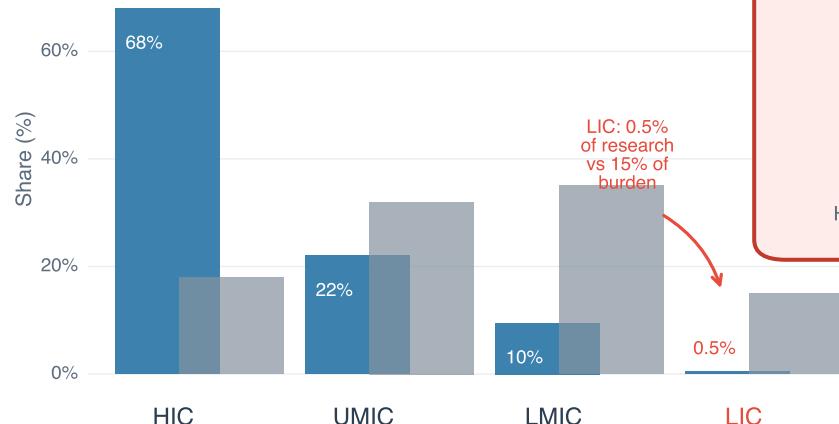
Underutilization of research capacity in underrepresented settings

B

Distribution of Genomic Clinical Studies by Income Group

■ Genomic Research Output

■ Global Disease Burden



C

Key Finding

322:1

HIC to LIC
Publication Ratio

High-income countries produce 322×
more genomic studies than
low-income countries

D

Summary: WHO Genomic Clinical Studies (1990–2024)

6,513

70%

68%

<0.5%

Total Studies

Top 10 Countries

High-Income Countries

Low-Income Countries