

sFit-1/PIGF testing may indirectly improve newborn outcomes in LMICs, with cost savings observed in some models

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Strengthening Maternal Care Systems in Low- and Middle-Income Countries: Modeling the Access, Health, and Economic Impact of sFit-1/PIGF Testing for Preeclampsia

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BACKGROUND: Hypertensive disorders of pregnancy (HDP), including preeclampsia, contribute to maternal morbidity, preterm birth, and poor neonatal outcomes^{1,2}. The burden is higher in upper and lower middle-income countries (UMICs and LMICs) due to limited diagnostics and constrained health systems³. These settings account for ~90% of global preterm births⁴, many linked to HDP.

sFit-1/PIGF testing can help distinguish high- from low-preeclampsia risk patients. While recommended in UK guidelines since 2016⁵, use in LMICs remains limited.

OBJECTIVE: This study evaluates the potential impact of sFit-1/PIGF testing on newborn outcomes and health system costs across 10 LMICs.

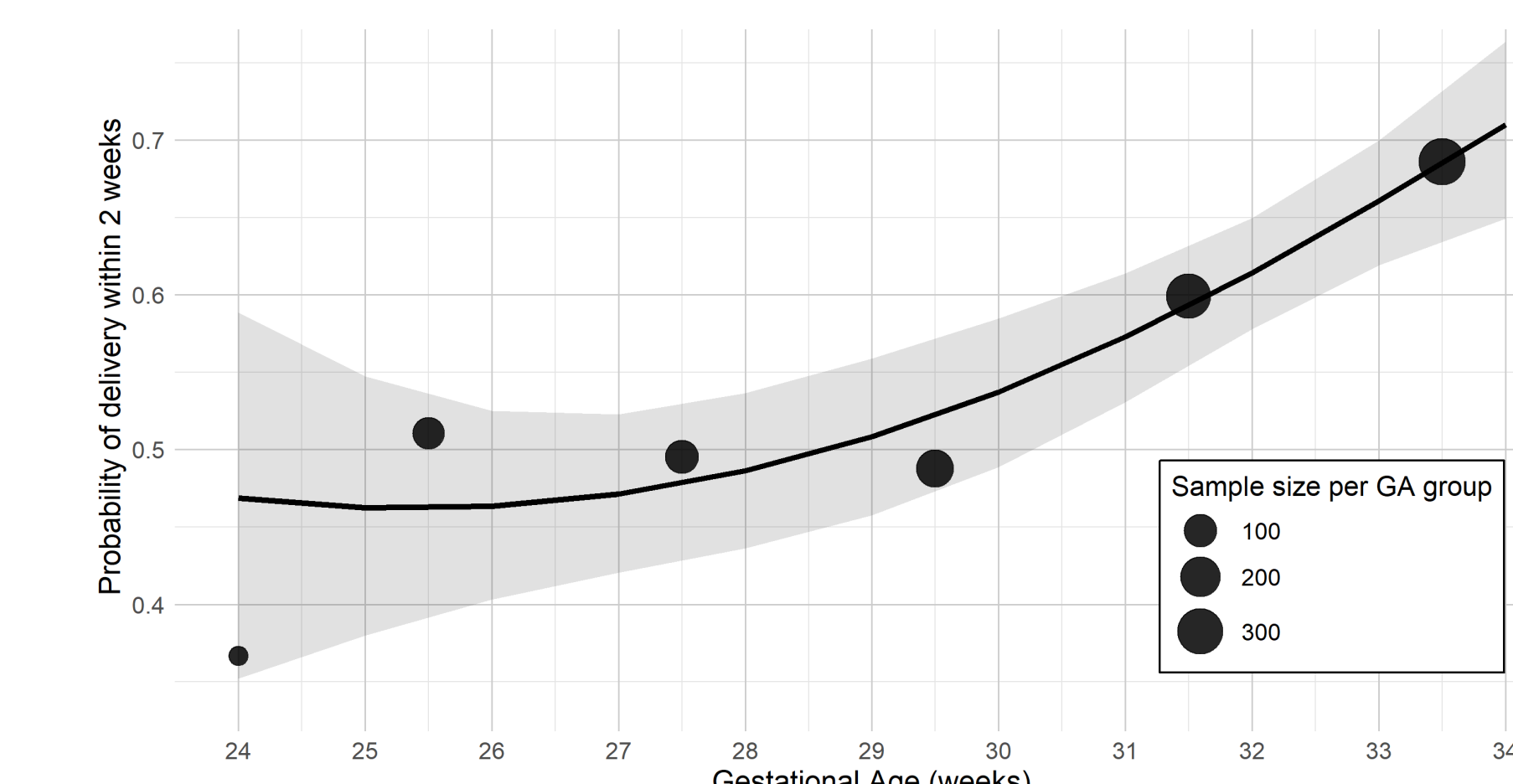
METHODS: We adapted a published U.S. decision analytic model⁶ to estimate newborn outcomes and costs from sFit-1/PIGF test implementation and risk stratification births across 10 high-burden LMICs⁷.

- Birth rates by gestational age (GA): from UNDP-WHO-UNICEF-World Bank estimates⁸
- Neonatal ICU costs: from national sources supplemented by WHO-CHOICE⁹.
- Clinical inputs and effectiveness (% pregnancies safely prolonged) were drawn from large trials and real-world data.¹⁰⁻¹²

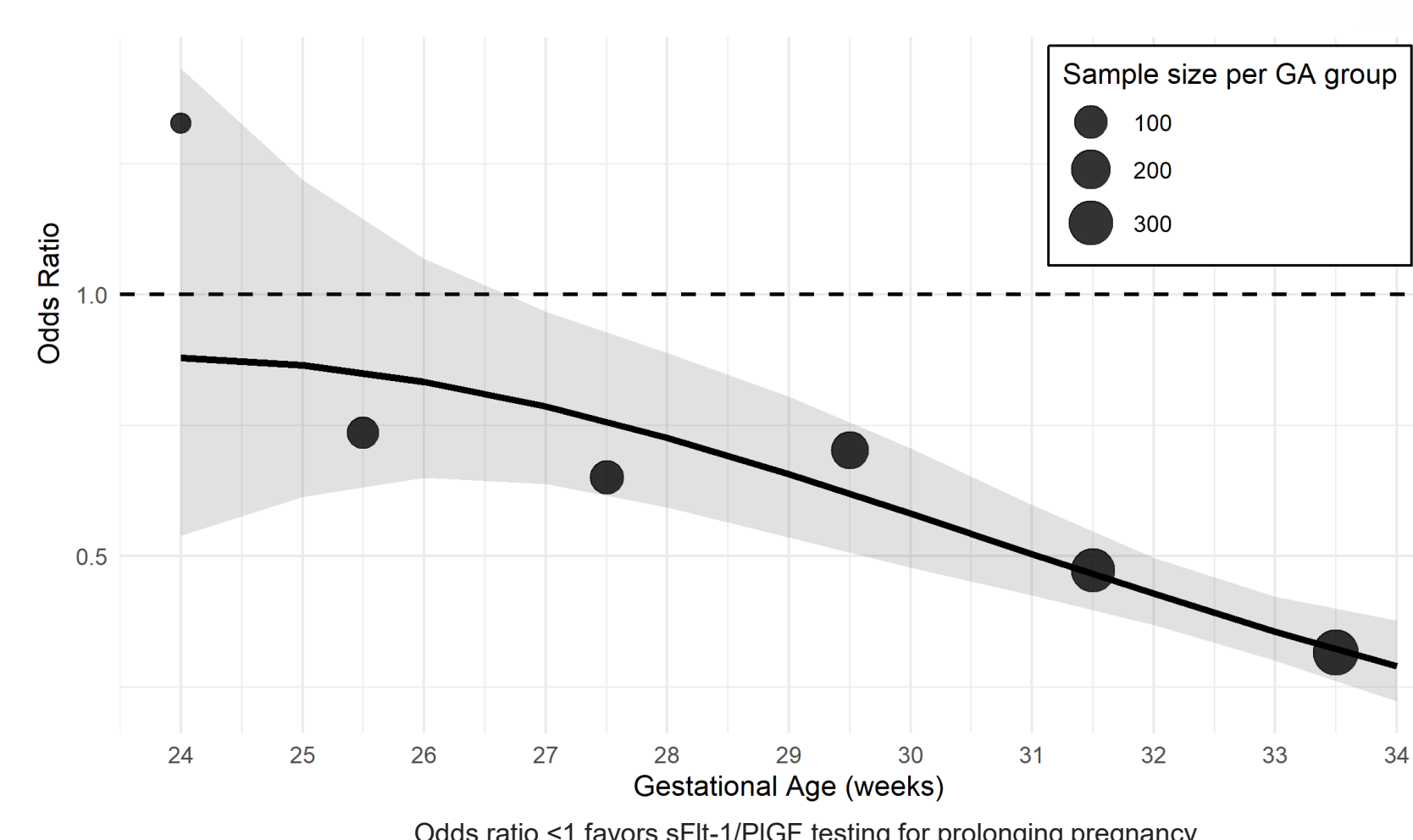
Care-guidance impact, the extent to which results inform care pathways decisions for providers, was scaled 50-100 percent to reflect cross-country transferability.



Underlying biologic probability of delivery was estimated by fitting a predictive curve using data from the PRAECIS¹⁰ trial, a large, multicenter prospective U.S. study (n=1,014) and one of the largest of its kind to date.



Expected effect of sFit-1/PIGF testing on pregnancy prolongation, based on the PRAECIS⁹ trial and BEACON¹², a published prospective real-world evidence study, one of the first Real-World Evidence following FDA approval.



RESULTS:

Clinical Impact

Model outcomes estimated a **17–22% reduction in preterm births** (<34 weeks) across all settings, with associated modeled decreases in neonatal mortality and morbidity.

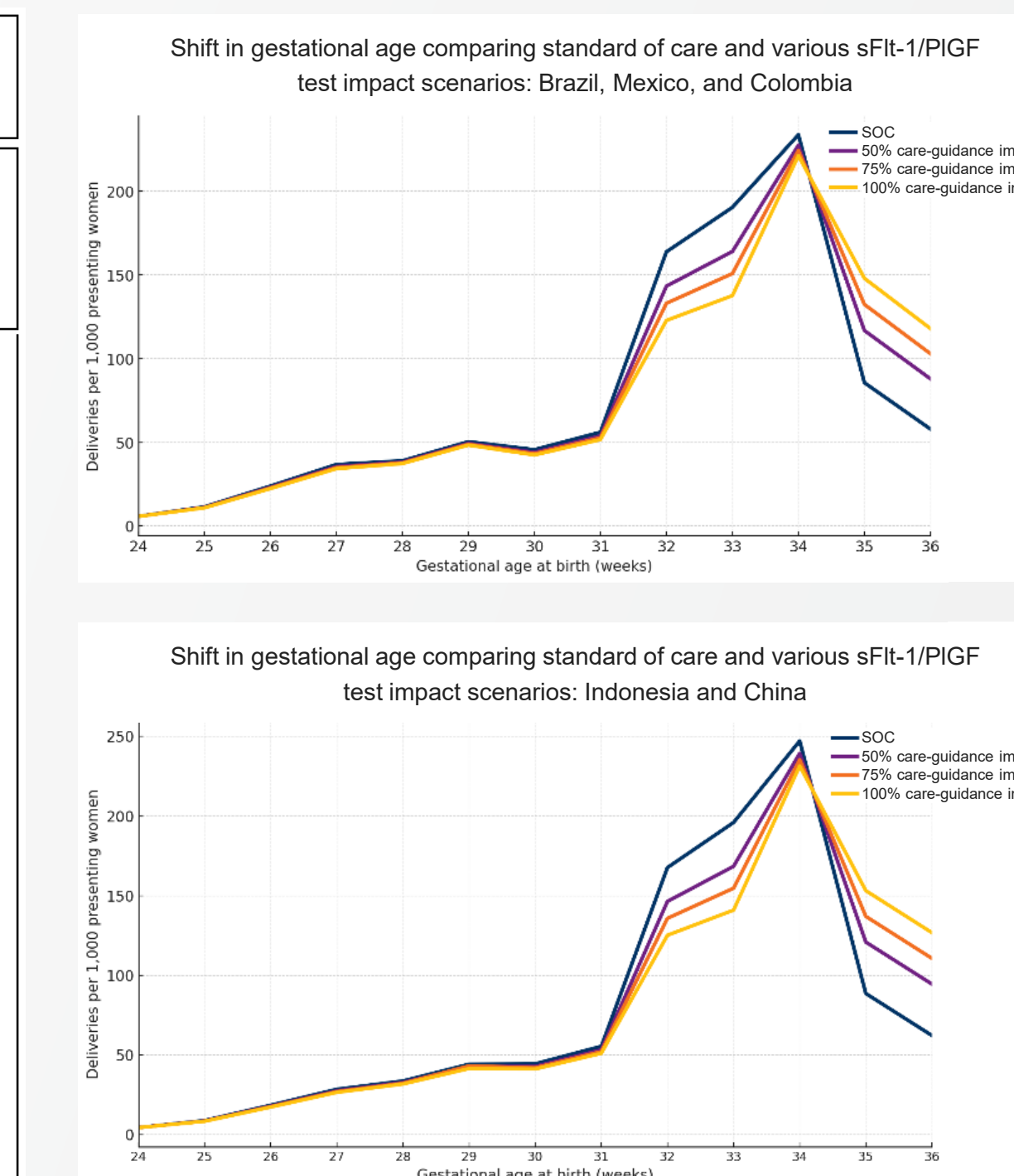
Robustness of Findings

Clinical impact and cost savings were **maintained across all modeled sensitivity analyses**, including scenarios assuming a 50% reduction in care-guidance impact.

Economic Impact

Net cost savings of USD 160–700 per hospitalized woman with suspected preeclampsia (UMICs and India) based on model estimates.

Country	Standard of Care	Care-guidance impact: 50%		Care-guidance impact: 75%		Care-guidance impact: 100%	
	NICU days per 1,000	NICU Days averted	Net saving (USD)	NICU Days averted	Net saving (USD)	NICU Days averted	Net saving (USD)
UMIC							
Indonesia	24,492	1,148	25,573	1,722	102,359	2,296	179,145
China	24,492	1,148	280,976	1,722	485,464	2,296	689,952
Brazil	25,956	1,120	45,030	1,680	131,545	2,240	218,059
Mexico	25,956	1,120	283,300	1,680	488,950	2,240	694,600
Colombia	25,956	1,120	19,225	1,680	92,837	2,240	166,450
Türkiye	26,750	1,104	36,117	1,655	118,175	2,207	200,234
LMIC							
India	21,694	1,199	91,772	1,798	201,658	2,397	311,545
Nigeria	23,537	1,162	-106,751	1,744	-96,127	2,325	-85,503
Ethiopia	23,537	1,162	-117,027	1,744	-111,541	2,325	-106,054
DRC	23,537	1,162	-123,734	1,744	-121,601	2,325	-119,468



Results are preliminary and subject to revision following final reanalysis. Estimates of NICU days per 100 births reflect the UNDP-WHO-UNICEF⁸ preterm gestational age distribution, which is reported by geographic region, and may introduce regional aggregation effects. No cost savings observed in Nigeria, Ethiopia, and DRC due to their low baseline Neonatal ICU cost offsets

CONCLUSIONS:

- sFit-1/PIGF testing could be associated with reduced preterm birth and potentially improve newborn outcomes in LMICs.
- In upper-middle-income settings, results may support consideration of value-based adoption.
- In lower-income settings, findings may inform efforts to expand equitable access through global health initiatives or philanthropy.
- Findings are based on modeled estimates and should be interpreted in the context of underlying assumptions and data



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