

The impact of vaccination on gender equity: conceptual framework and human papillomavirus (HPV) vaccine case study

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INTRODUCTION

- The beneficial effects of vaccines by socioeconomic status and geography are increasingly well-documented
- Little has been done to extend these analyses to examine the linkage between vaccination and gender equity

METHODS

- Evidence from the published literature was used to develop a vaccination-gender equity conceptual framework
- This framework was applied to the example of HPV vaccine introduction in three countries by estimating labor force participation and maternal mortality effects
- These effects were then converted into inputs consistent with those used to calculate the United Nations Gender Inequality Index (GII)

RESULTS

	Tanzania	India	United Kingdom
Years of life saved	29,742	597,902	5,258
Years of employment gained	2,939	27,312	401
Maternal deaths averted	1.43	2.29	<0.01

DISCUSSION

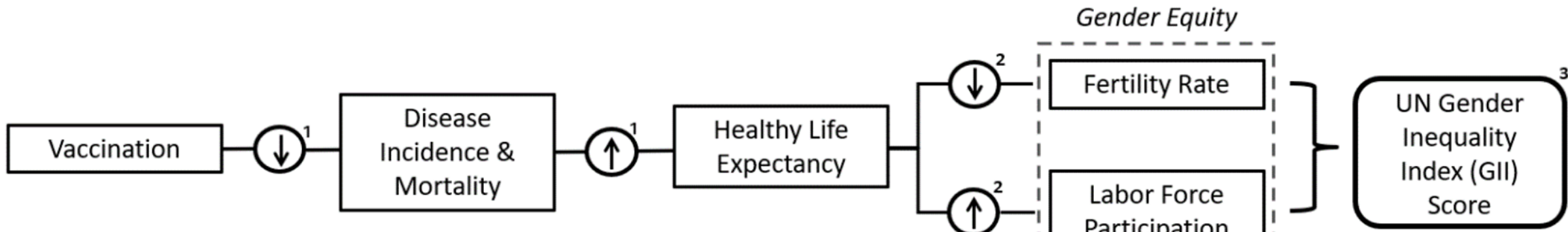
- HPV vaccination could help narrow socioeconomic gender disparities by enabling improvements in female contributions to the labor market and economic productivity and reducing maternal mortality

Health benefits due to HPV vaccinations were associated with 10,600 years of employment gained and an additional \$46.7 million dollars (in US\$2015) in economic productivity.

These cases and deaths averted were also associated with a decrease in maternal mortality and GII score.

Based on output from the Papillomavirus Rapid Interface for Modelling and Economics (PRIME) model , HPV vaccination is expected to decrease cervical cancer cases and deaths by approximately 80% in Tanzania, India, and the United Kingdom

Conceptual framework

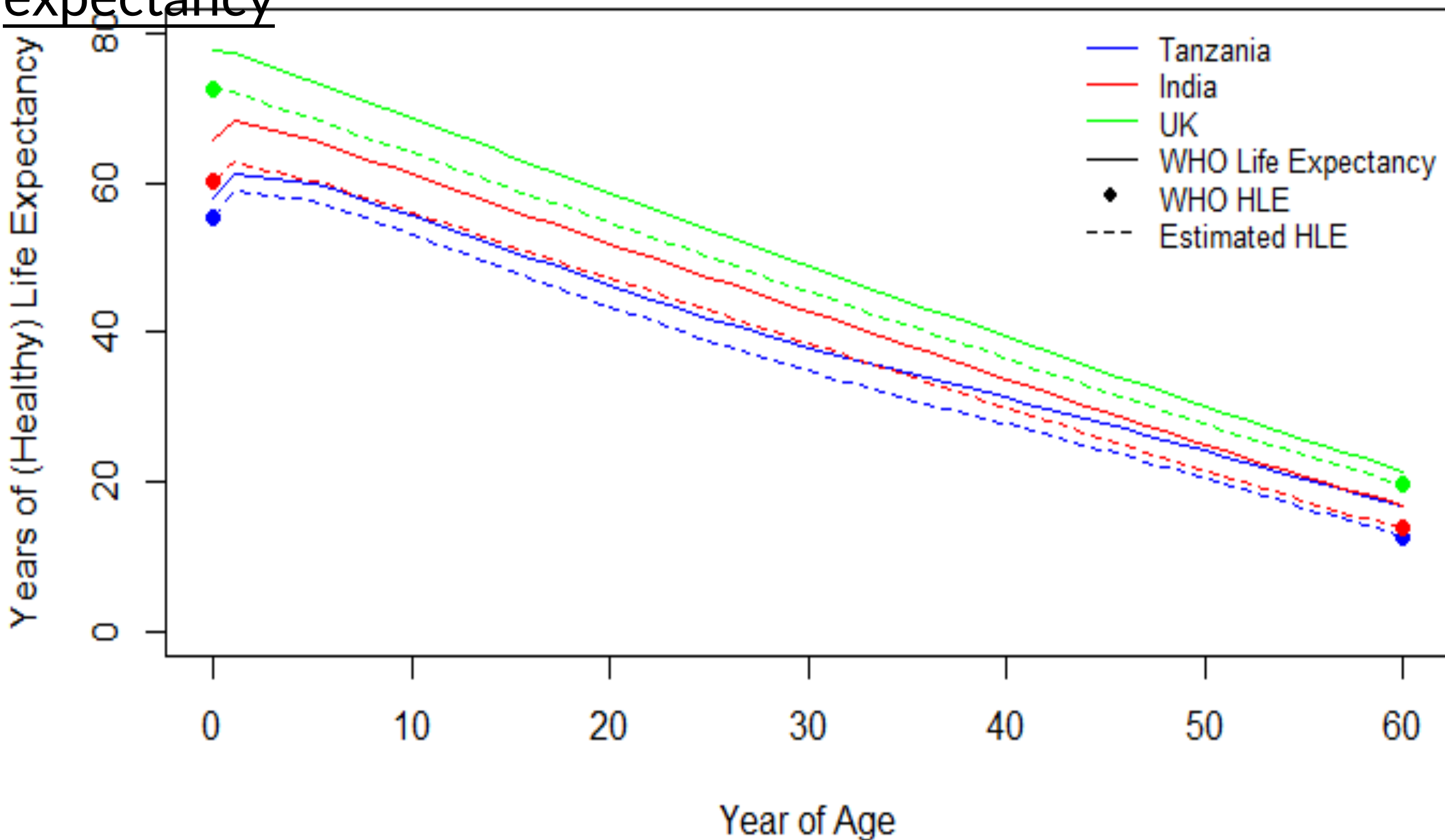


Note: [1] (Feikin et al., 2016). [2] (Bloom et al., 2016). [3] (United Nations Development Programme, 2018).

Results by age group

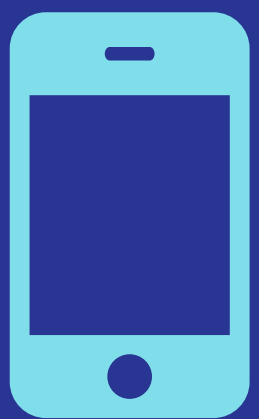
Age Group	Tanzania			India			United Kingdom		
	Years of life saved	Years of employment gained	Maternal deaths averted	Years of life saved	Years of employment gained	Maternal deaths averted	Years of life saved	Years of employment gained	Maternal deaths averted
15-19	2,672	313	0.03	45,643	2,492	0.07	725	65	<0.01
20-24	2,386	278	0.03	41,474	2,216	0.07	668	58	<0.01
25-29	2,107	242	0.04	37,345	1,941	0.07	612	51	<0.01
30-34	1,836	203	0.05	33,259	1,672	0.08	556	45	<0.01
35-39	1,578	165	0.05	29,218	1,404	0.09	500	38	<0.01
40-44	8,510	819	0.43	176,959	7,987	0.69	1,121	78	<0.01
45-49	10,652	920	0.80	234,004	9,600	1.22	1,076	66	<0.01
Total	29,742	2,939	1.43	597,902	27,312	2.29	5,258	401	<0.01

Estimated years of life expectancy and healthy life expectancy



References

1. Feikin, D.R, et al (2016). Vaccines for Children in Low- and Middle-Income Countries. Disease Control Priorities, Third Edition (Volume 2).
2. Bloom, D., Canning, D., Fink, G., & Finlay, J. (2009). Fertility, female labor force participation, and the demographic dividend. Journal of Economic Growth, 14, 79-101.
3. United Nations Development Programme (2018) Human Development Indices and Indicators 2018. Statistical update, UN, New York. [Online] Accessed 25 September 2017.



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