



Gates Foundation



Economic value slides – H-IUD

August 2026



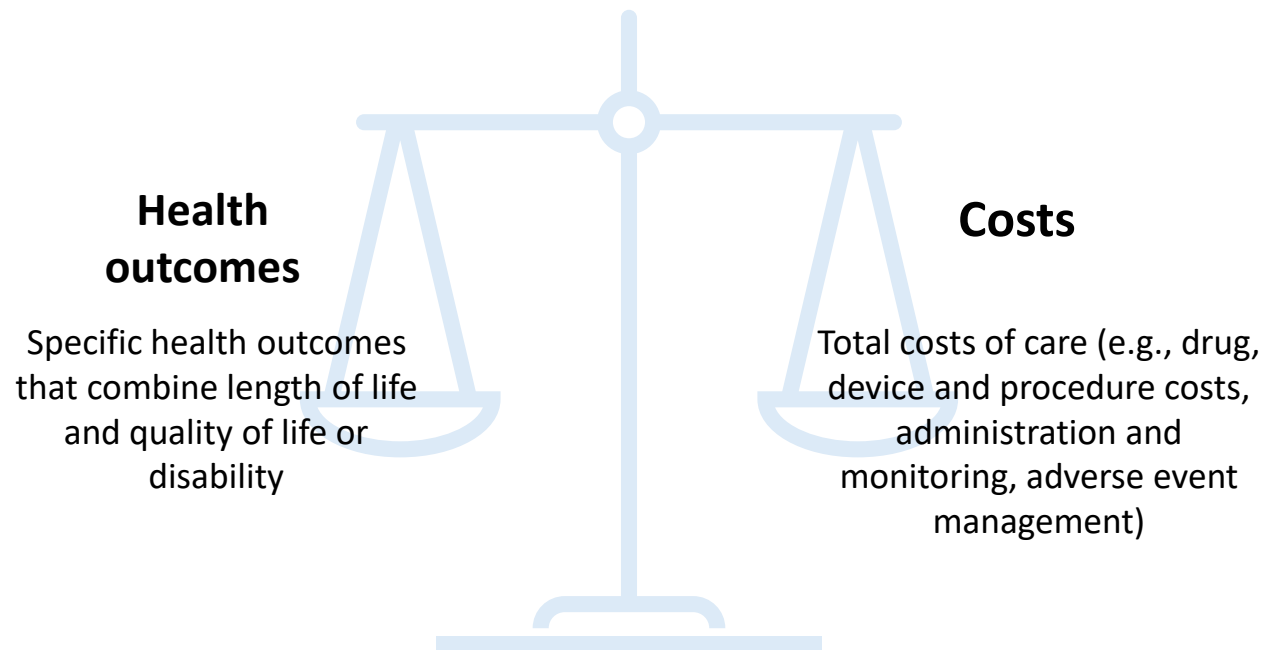
The Cost Effectiveness of H-IUD to treat HMB in Kenya

Summary of an analysis by fhi360 *'Including Heavy Menstrual Bleeding in Cost Modeling for the Hormonal IUD'*



What is cost-effectiveness analysis?

Cost-effectiveness analysis (CEA) is a type of economic evaluation that evaluates the effectiveness of two or more interventions relative to their cost¹



Cost effectiveness can be assessed from different **perspectives**, considering costs and benefits to the **health system only**, or also considering **broader societal** costs and benefits

The **time horizon** of a CEA is the duration over which health outcomes and costs are calculated; the appropriate time horizon depends on the nature of the disease and intervention being assessed

CEA can be used by decision makers to **maximize health outcomes** while **minimizing opportunity costs**¹



How is cost-effectiveness assessed for interventions for HMB? (1/2)

Cost-effectiveness analysis provides an incremental cost-effectiveness ratio (ICER) as a means of comparing a new interventions with existing interventions:¹

ICER

=

Total costs for H-IUD

Total costs for
comparator
(e.g., no treatment)

Total DALYs averted
with H-IUD

Total DALYs averted
with comparator
(e.g., no treatment)

Costs include drug, administration, and monitoring-related costs, adverse event management costs, other patient care costs (e.g. associated with physician consultation, anemia treatment, etc.)

Higher DALYs indicate worse health outcomes, so the number of **DALYs averted** is included in the calculation

Disability-adjusted life year (DALY)

Measures total burden of a disease by combining years of life lost to early death and years of healthy life lost to living with a condition

=

Years of life lost (YLL)

Captures premature death
(number of deaths x standard life expectancy* at age of death) –
although this is not relevant for HMB



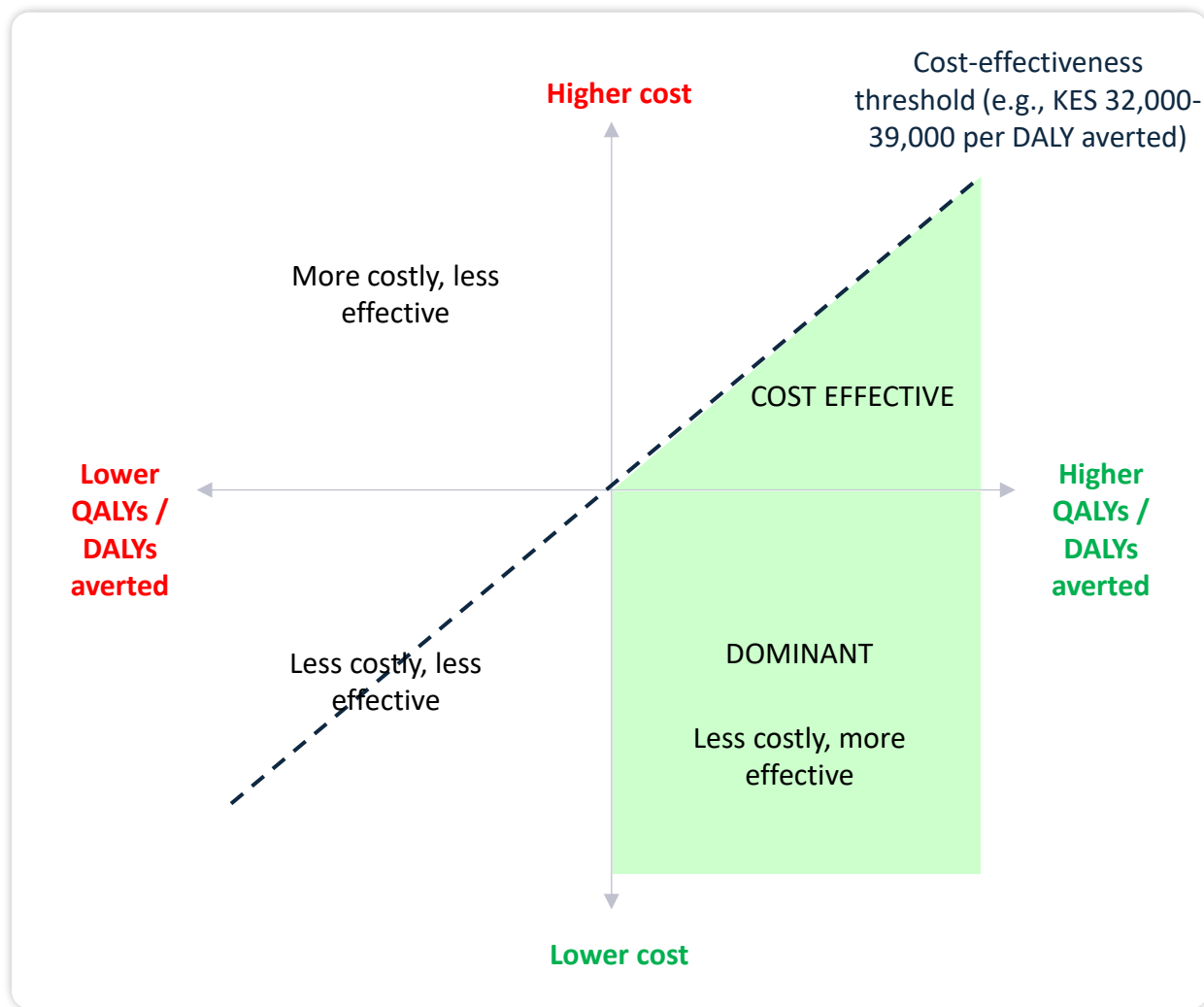
Years lived with disability (YLD)

Captures the time people spend living in less than full health
(number of cases x disability weight x duration of the condition)

*Based on a reference life table from the Global Burden of Disease (GBD) study. Sources: 1. York Health Economics Consortium. Glossary. Available at: [Glossary - York Health Economics Consortium](#). Acronyms: DALY, disability-adjusted life year; H-IUD, hormonal intrauterine device; HMB, heavy menstrual bleeding; ICER, incremental cost-effectiveness ratio; YLD, years lived with disability; YLL, years of life lost.



How is cost effectiveness assessed for interventions for HMB? (2/2)



What is a cost-effectiveness threshold?

The maximum amount that a decision maker is prepared to pay for a unit of improved health outcome, e.g. a benefit in health gained (QALY) or disability averted (DALY)¹

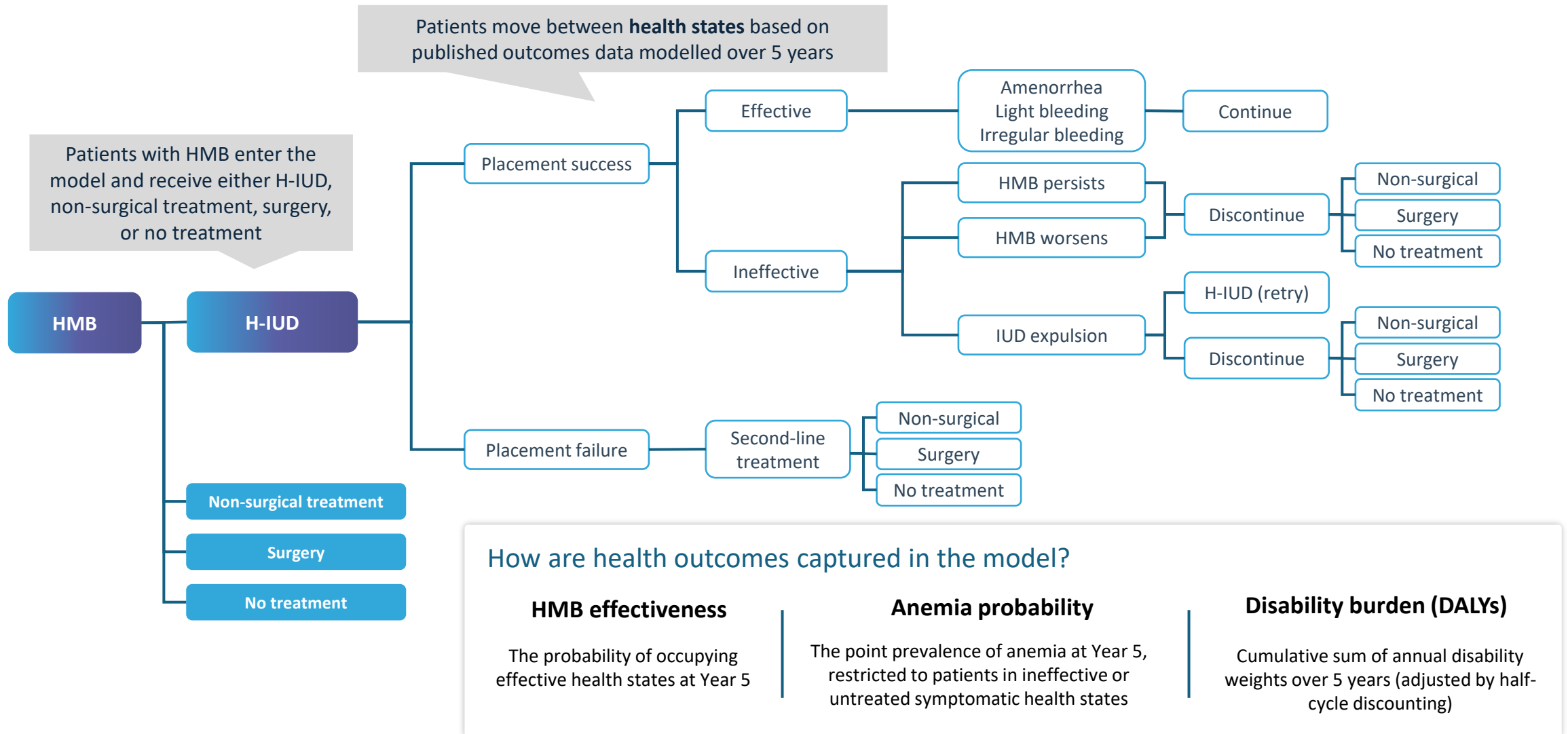
An intervention with an ICER below the relevant threshold is likely to be considered cost effective and recommended for funding

What is the cost-effectiveness threshold in Kenya?

While there is no formal cost-effectiveness threshold in Kenya, system-level empirical estimates place the threshold in Kenya at \$250-300 (KES 32,000-39,000) per DALY averted^{2,3}



How is the cost-effectiveness model structured for H-IUD in HMB?





Key model inputs – health outcomes

Probabilities of H-IUD outcomes

Possible outcomes with H-IUD	Probability
H-IUD placement success ^{1,2}	0.97
H-IUD effectively controls bleeding ^{1,3-9}	0.87
Symptoms stay controlled over time ¹	0.94
HMB persists ^{1,10}	0.37
HMB worsens ^{1,10}	0.28
H-IUD expulsion ^{11,12}	0.35
H-IUD insertion retry ¹	0.28
Anemia conditional on HMB ^{13,14}	0.44
Switching to non-surgical treatment ^{1,10,16}	0.38
Switching to surgical treatment ^{1,10,16}	0.18
Switching to no treatment ^{1,10,16}	0.44

Published data used in the model show high probabilities of H-IUD placement success and effective bleeding control

Bleeding outcomes for H-IUD and comparators

Bleeding outcomes		Value
Average baseline menstrual blood loss (mL) ¹		160
Baseline bleeding score (PBAC) ¹		372
Average reduction in bleeding	H-IUD (mL) ¹⁵	106
	Tranexamic acid (mL) ¹⁵	80
	Combined oral contraceptive (mL) ¹⁵	56
	NSAIDs (mL) ¹⁵	41

Disability weights for HMB outcomes

Disability	Weight
No disability (symptoms resolved)*	0
Moderate ongoing symptoms ¹⁷	0.026
Severe untreated symptoms ¹⁷	0.075
Additional disability due to anemia ¹⁷	0.029

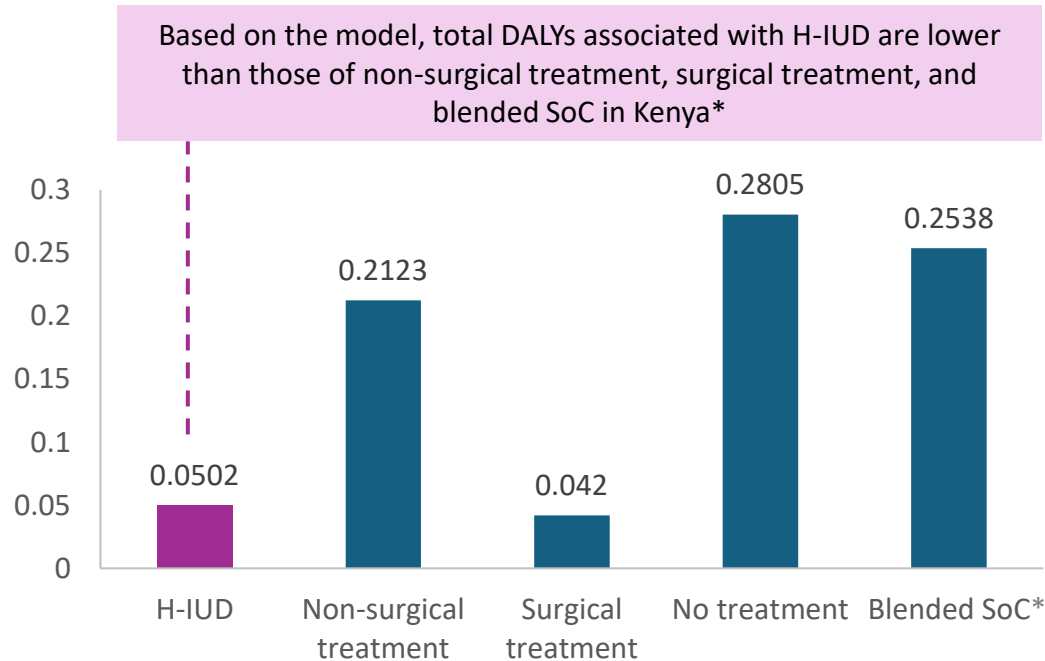
Higher disability weight = greater disability. These weights are used in the calculation of YLD to inform DALYs (see [Slide 3](#))

*Assumption. Sources: 1. Ganz, 2013; 2. Seidman; 3. Lethaby; 4. Ganatra, 2022; 5. Atak, 2023; 6. Kitawaki, 2023; 7. van den Brink, 2021; 8. Calaf; 9. Niaraees Zavare; 10. Gupta, 2015; 11. Madden, 2014; 12. Creinin, 2023; 13. Nelson & Ritchie, 2015; 14. Fraser, 2015; 15. Rodriguez, 2022; 16. Roberts, 2011; 17. Global Burden of Disease, 2021. Acronyms: DALY, disability-adjusted life year; HMB, heavy menstrual bleeding; IUD, intrauterine device; NSAID, non-steroidal anti-inflammatory drug; PBAC, pictorial blood loss assessment chart; YLD, years lived with disability.

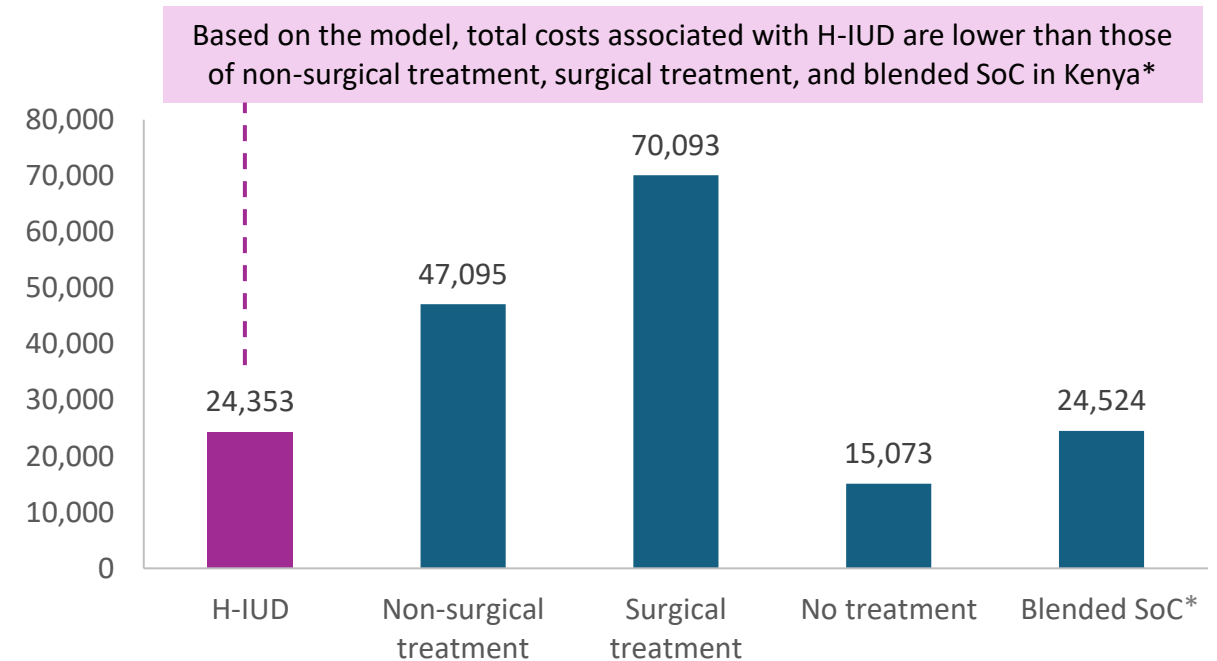


H-IUD provides a lower disability burden (fewer DALYs) than all treatments but surgery, at lower costs than all other treatment options

Total DALYs (more DALYs = higher disability burden)



Total costs (KES)



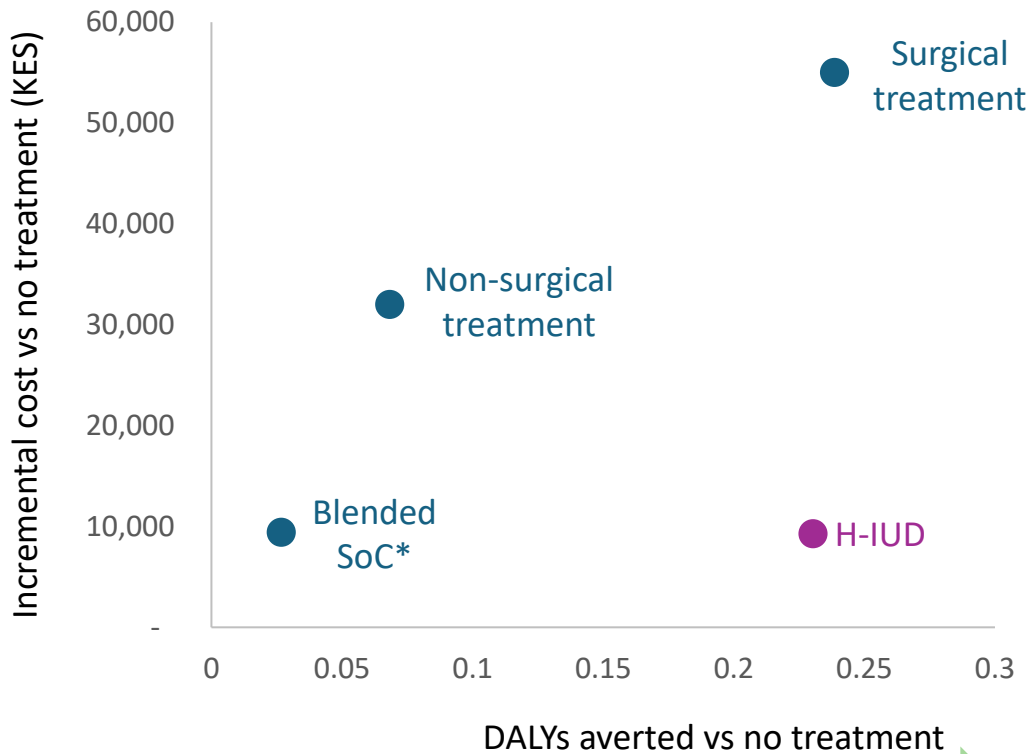
Cost effectiveness for H-IUD is calculated based on the **cost vs each comparator** divided by the **DALYs averted vs each comparator**

*Blended SoC includes no treatment (74%), non-surgical options (NSAIDs, tranexamic acid, or oral contraceptives; 20%), and surgery (5.5%); proportions of women with HMB receiving these options has been validated through primary research with providers in Kenya. Acronyms: DALY, disability-adjusted life year; HMB, heavy menstrual bleeding; IUD, intrauterine device.



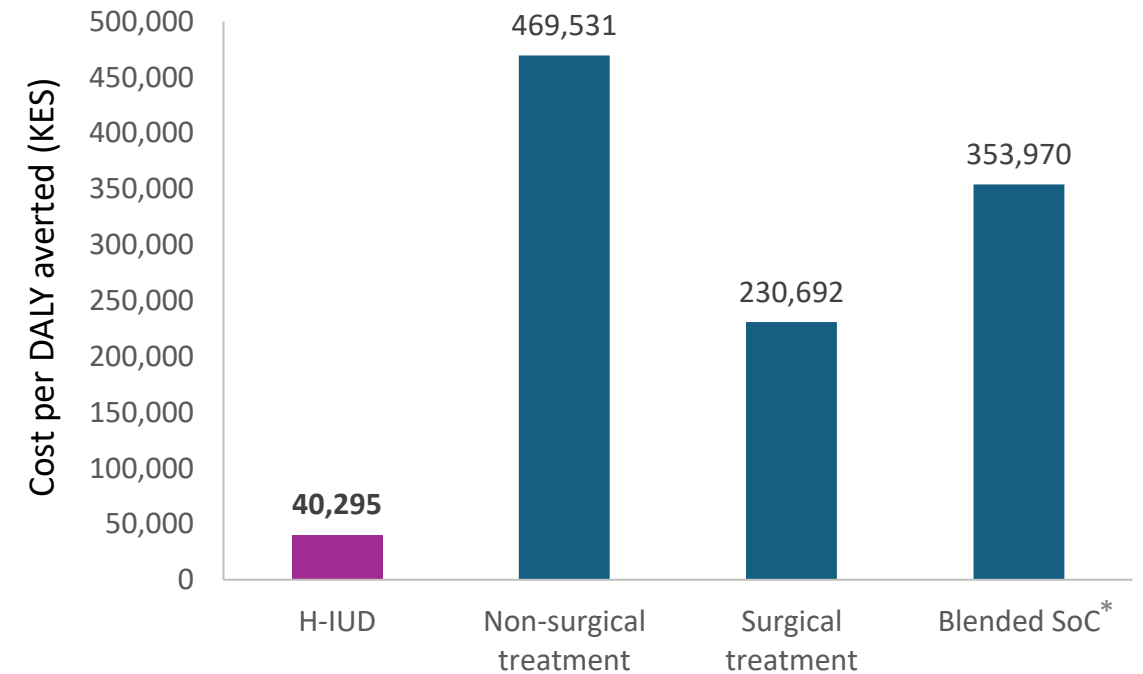
Relative to no treatment, H-IUD costs less per DALY (unit of disability) averted than all other treatment options

Incremental costs (KES) and DALYs averted vs no treatment



More DALYs averted = lower disability burden

Costs (KES) per DALY averted vs no treatment



*Blended SoC includes no treatment (74%), non-surgical options (NSAIDs, tranexamic acid, or oral contraceptives; 20%), and surgery (5.5%); proportions of women with HMB receiving these options has been validated through primary research with providers in Kenya. Acronyms: DALY, disability-adjusted life year; HMB, heavy menstrual bleeding; IUD, intrauterine device.



H-IUD is lower cost and more effective compared with the current treatment mix for HMB in Kenya

A cost-effectiveness analysis was conducted to assess the relative economic value from a Kenyan health system perspective (ICER [cost per DALY averted]) of H-IUDs in women with HMB vs:

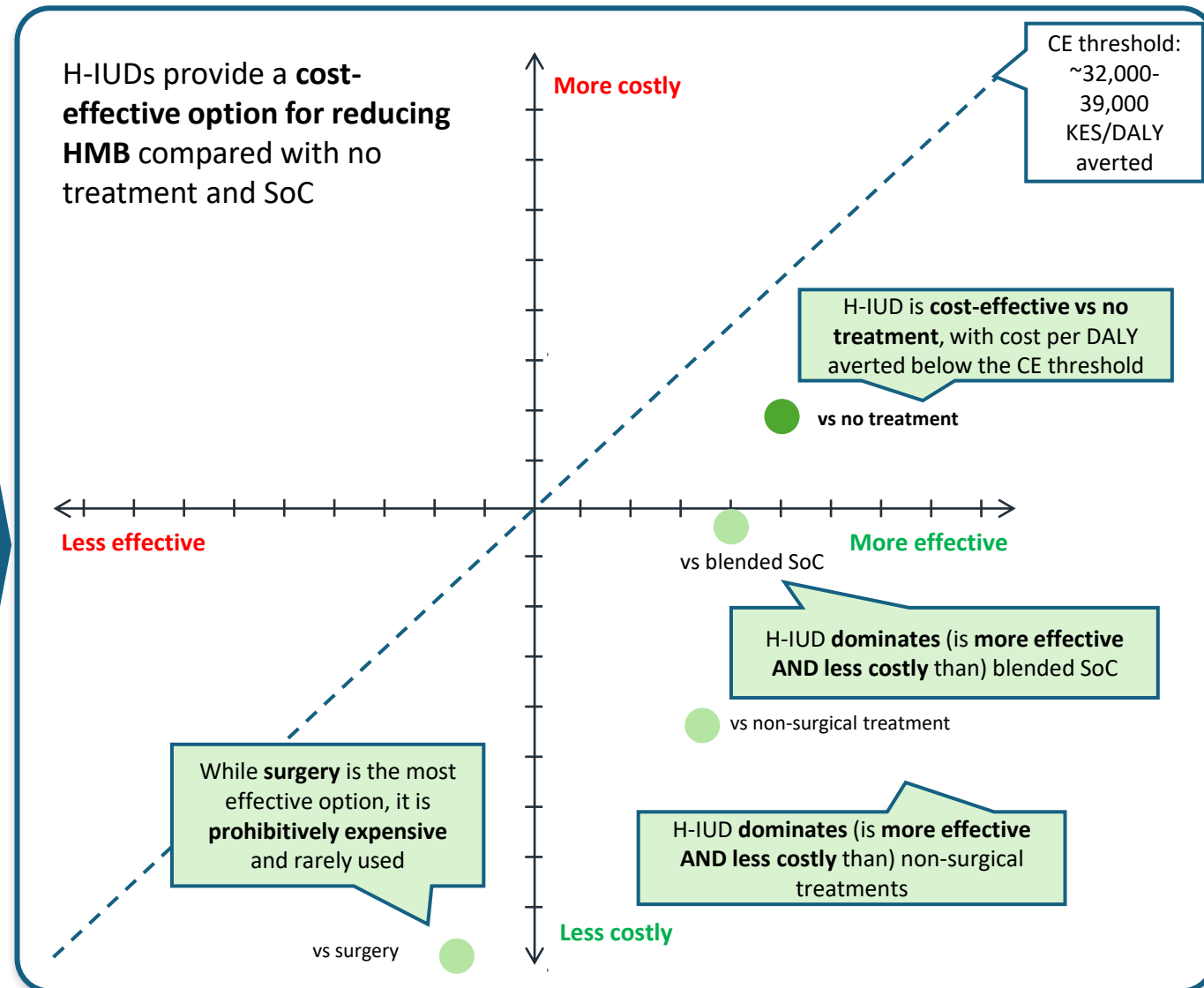
No treatment	Non-surgical treatment	Blended SoC in Kenya*	Surgery
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A 5-year state-transition cohort model was used, that included the following inputs:

HEALTH OUTCOMES	COSTS
- Treatment success (amenorrhea rate) - DALYs - Anemia prevalence	- Direct medical costs (devices, procedures) - HCRU (follow-up, labs) - Provider time and facility overhead

H-IUD demonstrated strong clinical outcomes resulting in:

REDUCED DISABILITY BURDEN	HIGHER EFFECTIVENESS PROBABILITY	LOWER ANEMIA RISK
0.05	64%	12%
DALYs vs 0.28 for no treatment	effectiveness vs 0% for no treatment	anemia risk vs 46% for no treatment



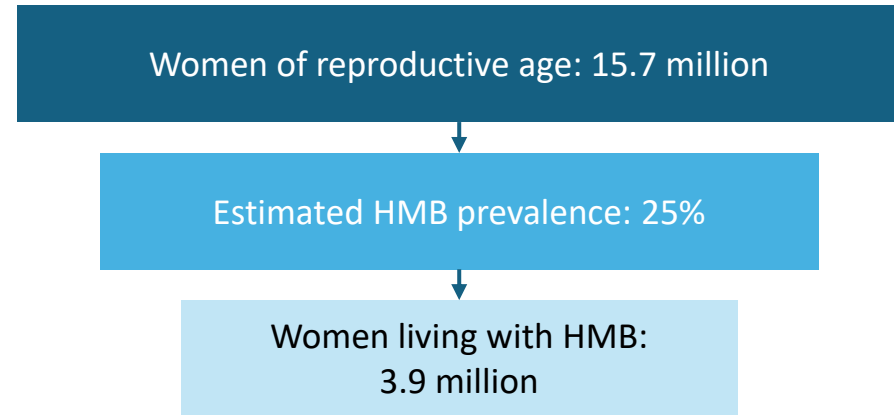
*Blended SoC includes no treatment (74%), non-surgical options (NSAIDs, tranexamic acid, or oral contraceptives; 20%), and surgery (5.5%); proportions of women with HMB receiving these options has been validated through primary research with providers in Kenya. Acronyms: CE, cost effectiveness; DALY, disability-adjusted life year; HCRU, healthcare resource use; H-IUD, hormonal intrauterine device; HMB, heavy menstrual bleeding; ICER, incremental cost-effectiveness ratio; SoC, standard of care.

Budget impact of H-IUD for HMB in Kenya

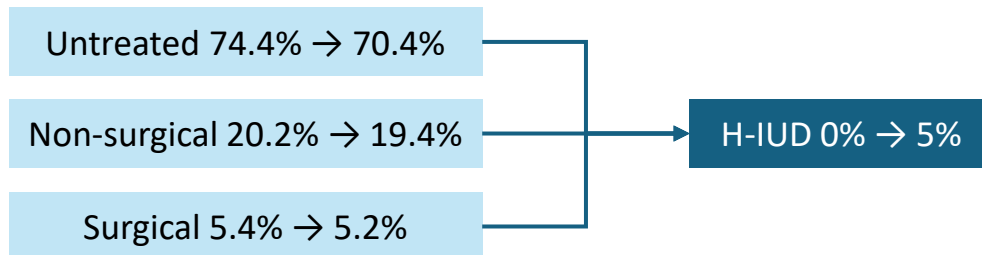


H-IUD is projected to increase healthcare spending on HMB by only ~0.4% over 5 years while expanding access to an effective treatment option for women with HMB

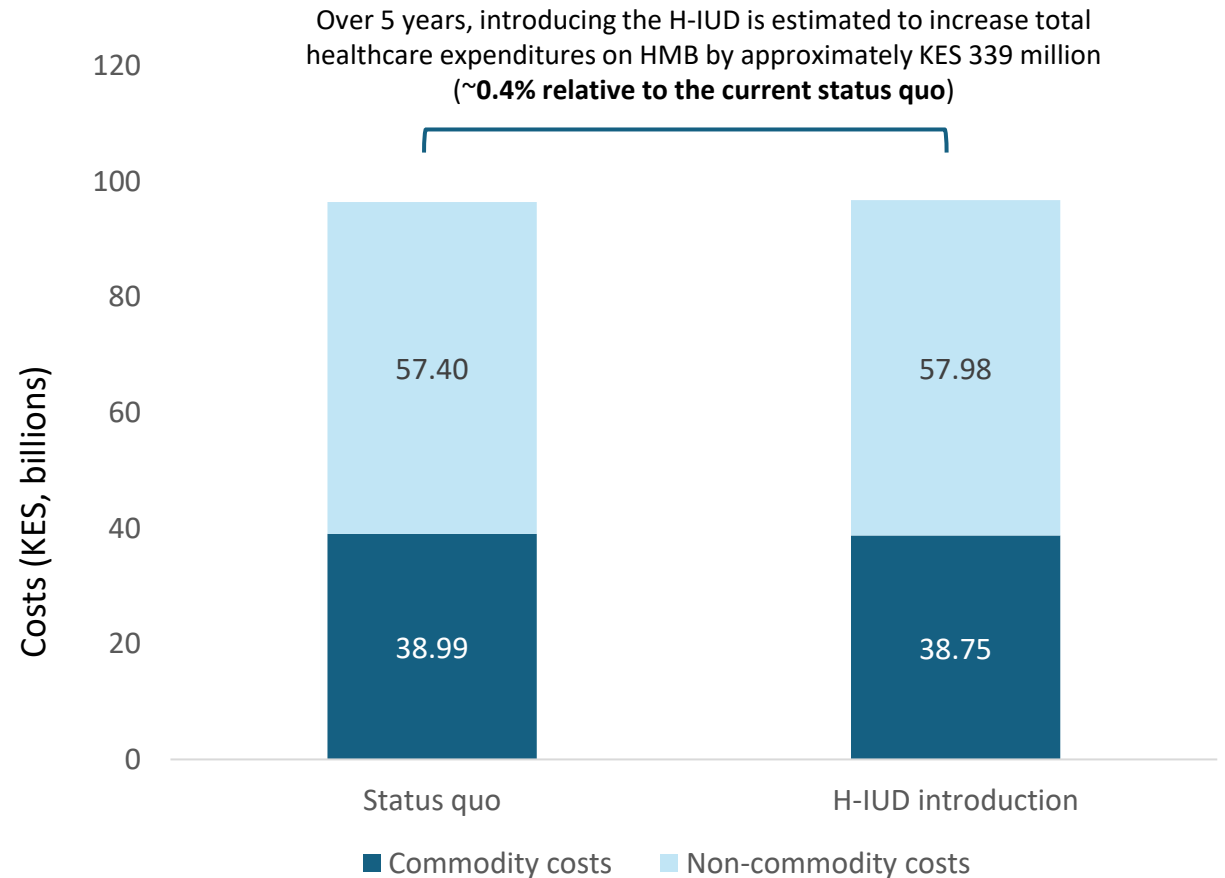
A budget impact analysis was conducted to assess the affordability of introducing H-IUDs over a 5-year period for women with HMB:¹



If introduced, it is anticipated that ~5% of eligible women will receive an H-IUD each year in the 5 years following introduction:



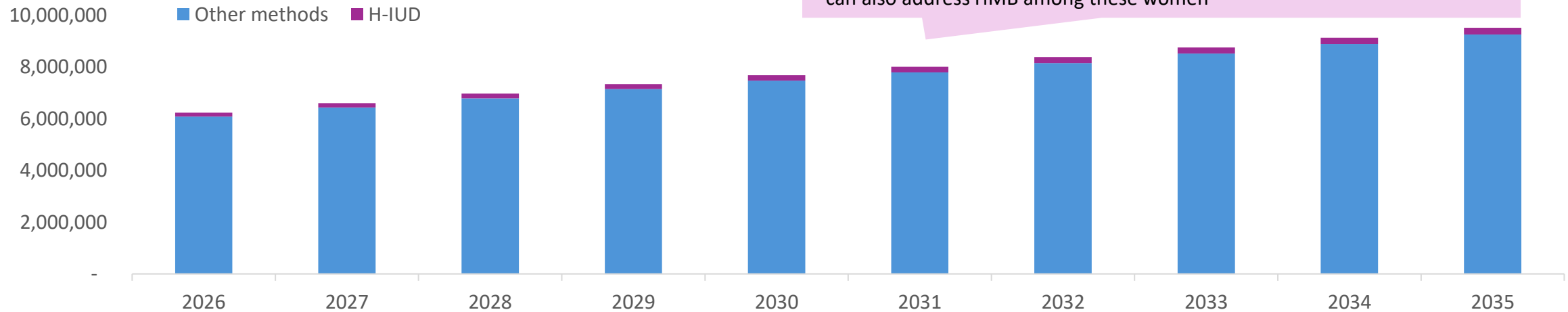
5-year total HMB costs¹



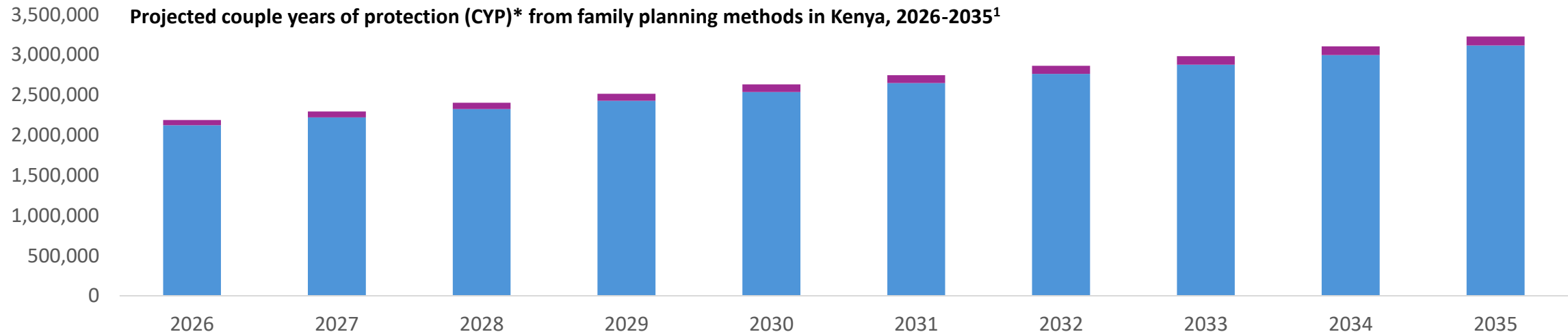


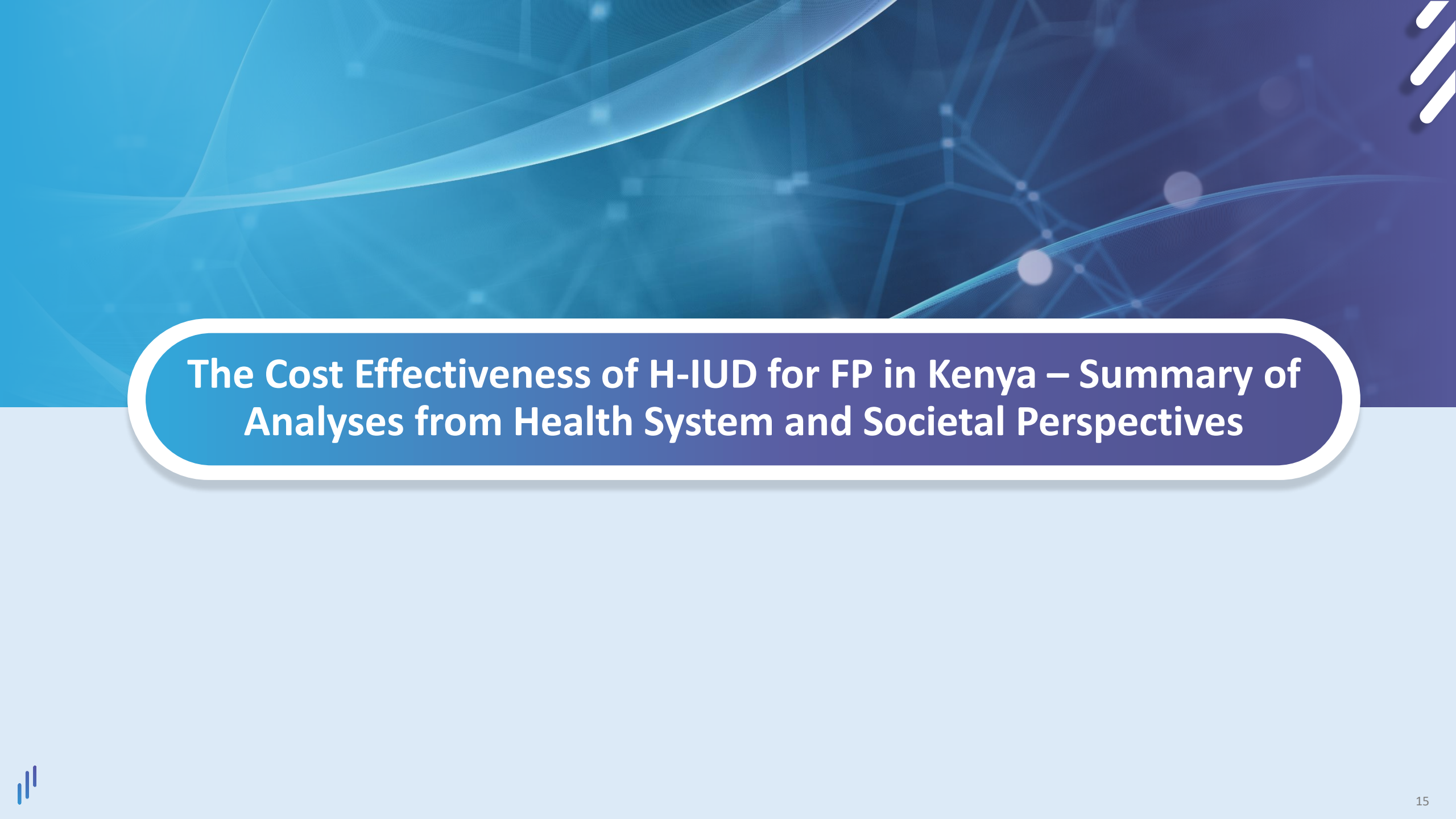
H-IUD will continue to account for a small share of family planning expenditure while contributing to CYP in Kenya over the next 10 years

Projected costs (\$) of family planning methods in Kenya, 2026-2035¹



Projected couple years of protection (CYP)* from family planning methods in Kenya, 2026-2035¹





The Cost Effectiveness of H-IUD for FP in Kenya – Summary of Analyses from Health System and Societal Perspectives



H-IUDs offer an effective option to save lives and deliver health system savings by averting unintended pregnancies

A cost-effectiveness analysis was conducted to assess the relative economic value from a **health system perspective** (ICER [cost per unintended pregnancy averted]) of H-IUDs vs:

Copper IUD

Implants*

Oral
contraceptive

Injectable

A 10-year Markov cohort model was used that included 100,000 women and the following inputs:

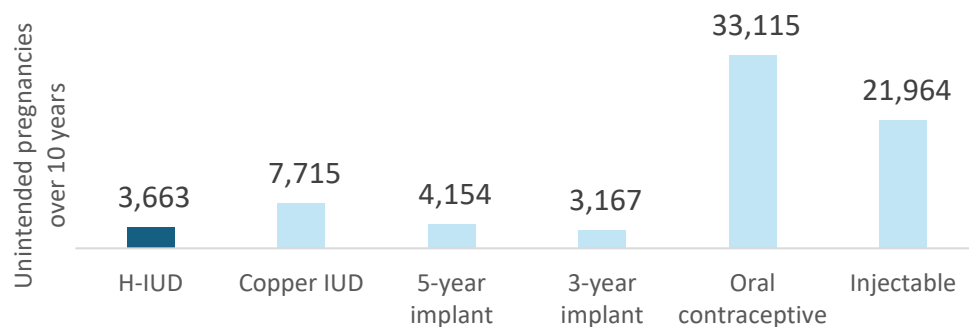
HEALTH OUTCOMES

- Contraceptive failure rates
- Contraceptive continuation rates

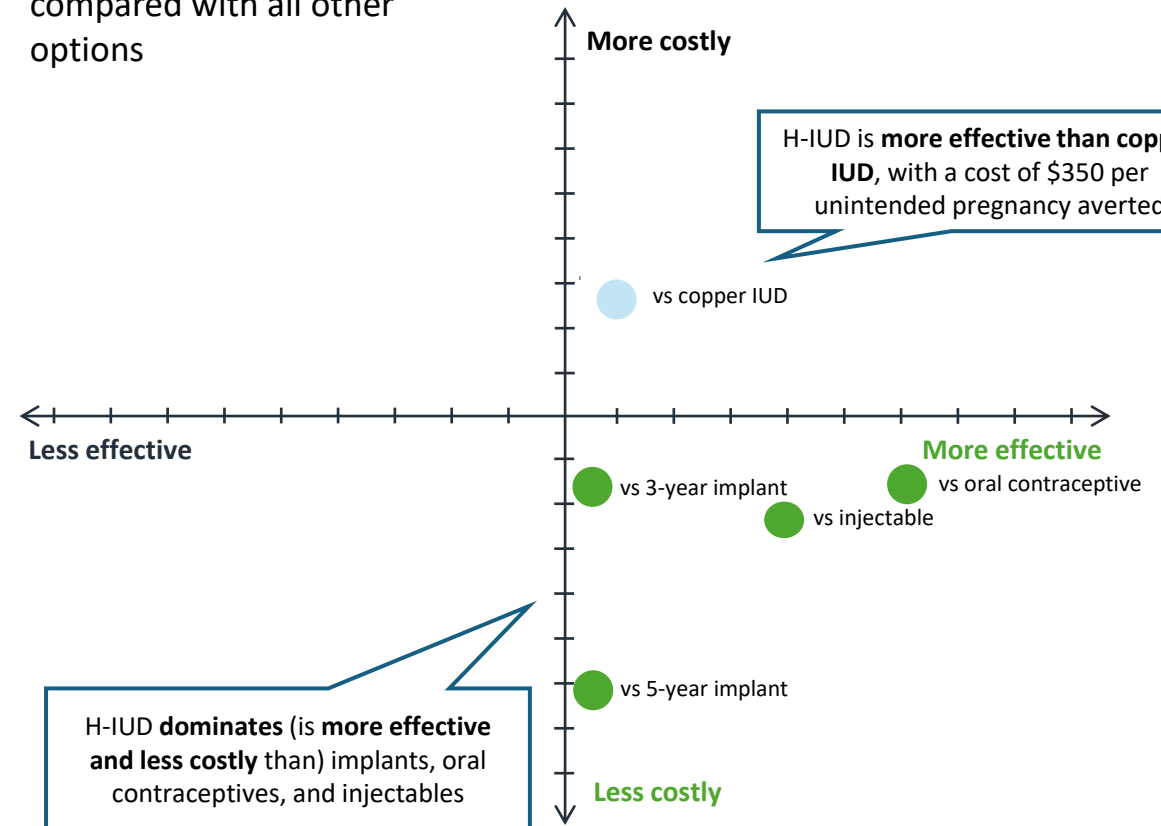
COSTS

- Cost of pregnancy (weighted for all outcomes)
- Cost of method initiation, follow-up, and/or removal

Use of H-IUD results in fewer unintended pregnancies relative to other methods (over 10 years):



H-IUDs provide a **more effective option for averting unintended pregnancies** compared with all other options



Analysis Based on
Nigeria Data



H-IUDs offer an effective option to save lives and deliver health system and societal savings by averting unintended pregnancies

**Analysis Based on
Nigeria Data**

A cost-effectiveness analysis was conducted to assess the relative economic value from a **societal perspective** (ICER [cost per unintended pregnancy averted]) of H-IUDs vs:

Copper IUD	Implants*	Oral contraceptive	Injectable
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A 10-year Markov cohort model was used that included 100,000 women and the following inputs:

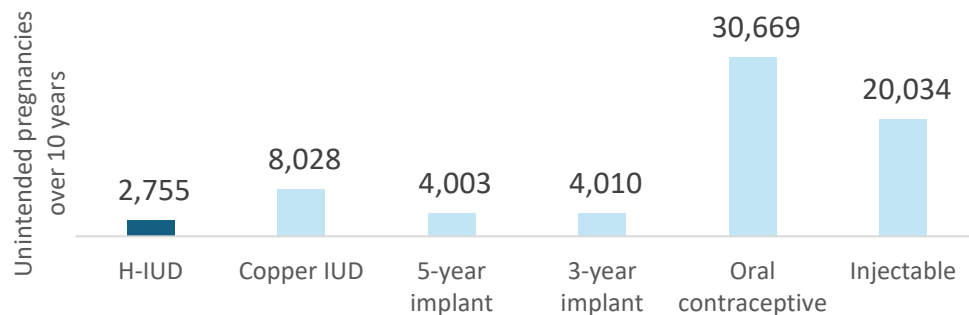
HEALTH OUTCOMES

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