HPTN
HIV Prevention
Trials Network

PopART
HPTN 071

Cost and cost-effectiveness of the PopART intervention: Data from HPTN 071 (PopART)

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PEPFAR

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U.S. NATIONAL INSTITUTES OF HEALTH:
National Institute of Allergy and Infectious Diseases
National Institute of Mental Health
National Institute on Drug Abuse

Background

- Close integration of epidemiological model and cost-effectiveness analysis (CEA)
- Two projection scenarios
- Health system perspective
- Ancillary studies for economic impact and patient perspective
- Extensive uncertainty analyses around key parameters

Background

- Costs
  - CHiPs intervention, HIV testing & treatment and VMMC in all PopART facilities
  - Extensive data collection over the study period
  - Time-and-motion study to disentangle costs of CHiPs activities
  - Secondary data sources for some cost items
- Benefits
  - Infections averted as projected by the epidemiological model
  - Disability-adjusted life-years (DALYs) averted
  - DALYs to assess PopART's impact on both mortality and morbidity

Projection Scenarios

Intervention scenario	Description
PopART continued	PopART implemented 2014-2030 in intervention communities; counterfactual simulation of standard-of-care
PopART discontinued (actual trial)	PopART implemented 2014-2017 in intervention communities and then discontinued; counterfactual simulation of standard-of-care; impacts projected until 2030

Results: Yearly CHiPs intervention costs per person

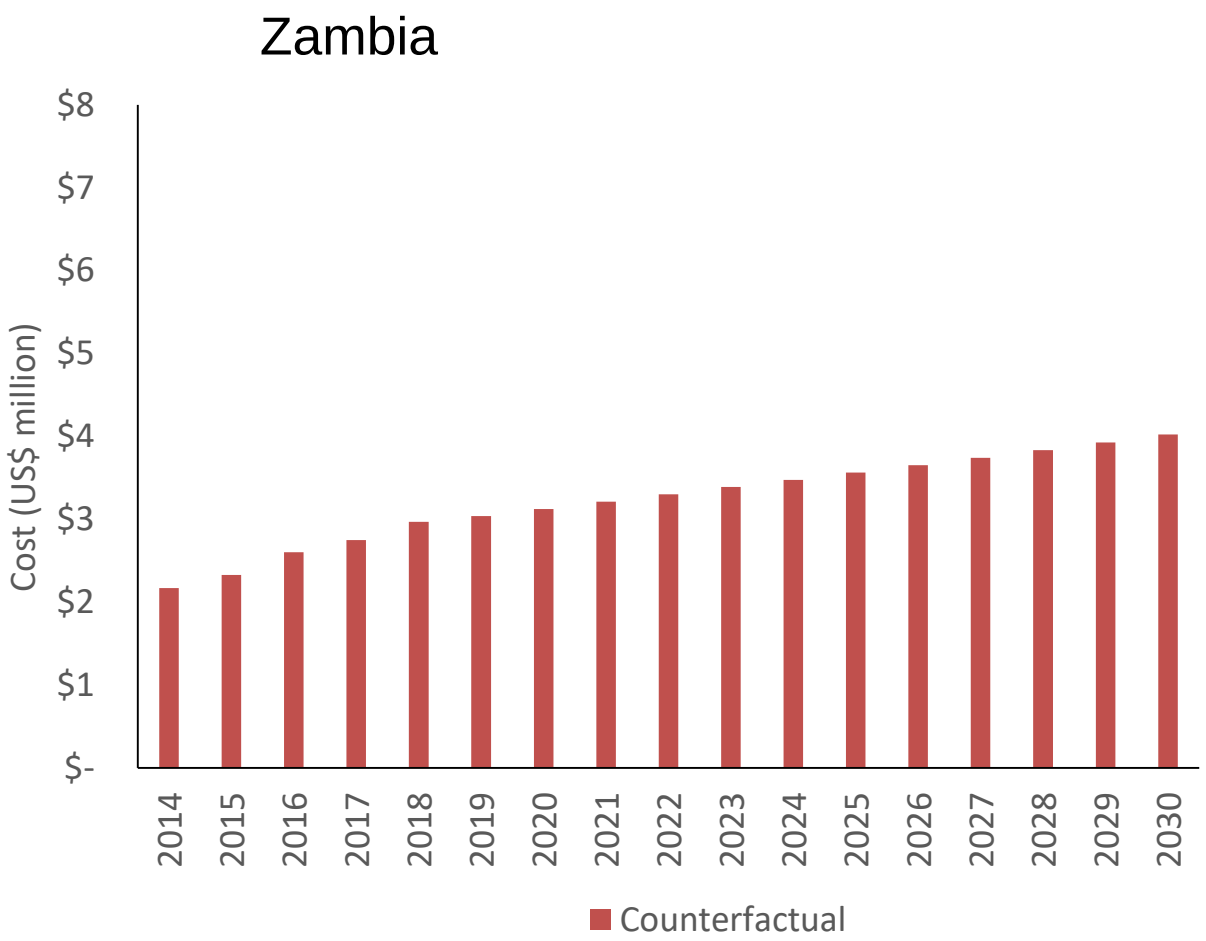
Costs of PopART continued 2014 – 2030	Range
Zambia	US$ 5.10 - US$ 6.80
South Africa	US$ 6.40 - US$ 8.20

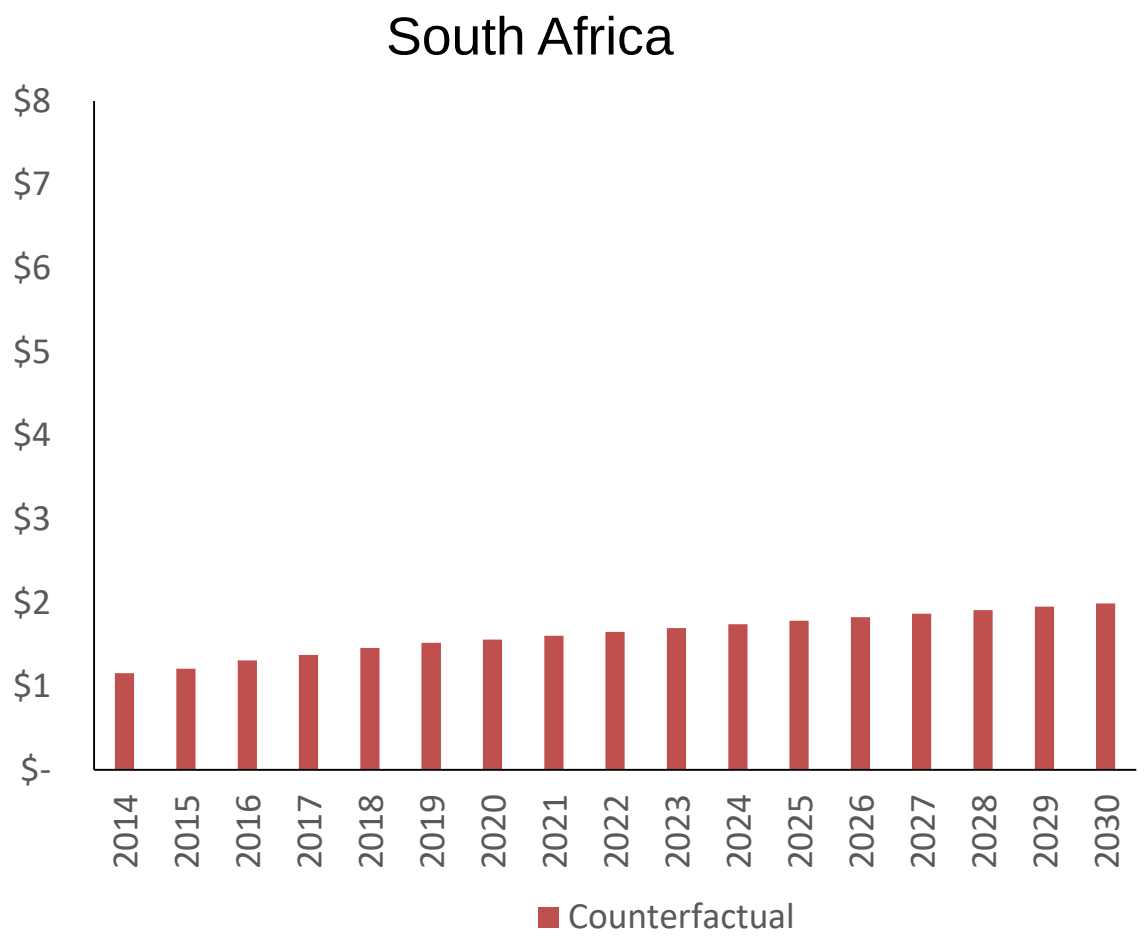
Notes: Lower and upper bounds of the range are yearly minimum and maximum estimates over the 16 year projection horizon; costs are per person aged 14+ living in the intervention communities

Selected findings from time-and-motion study

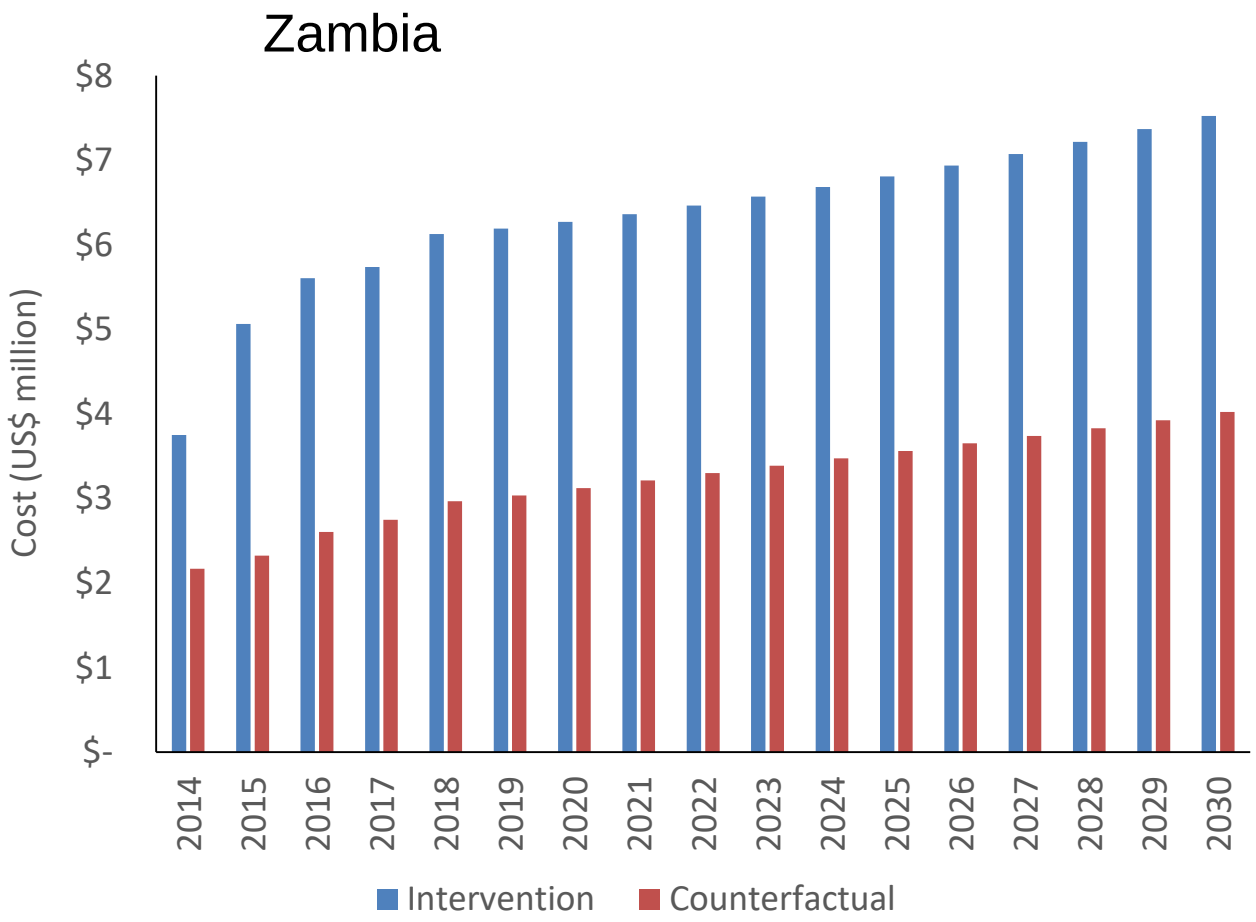
CHiPs time spent per person	Country	Average time in minutes
HIV-positive test result	Zambia	112
	South Africa	85
HIV-negative test result	Zambia	70
	South Africa	52

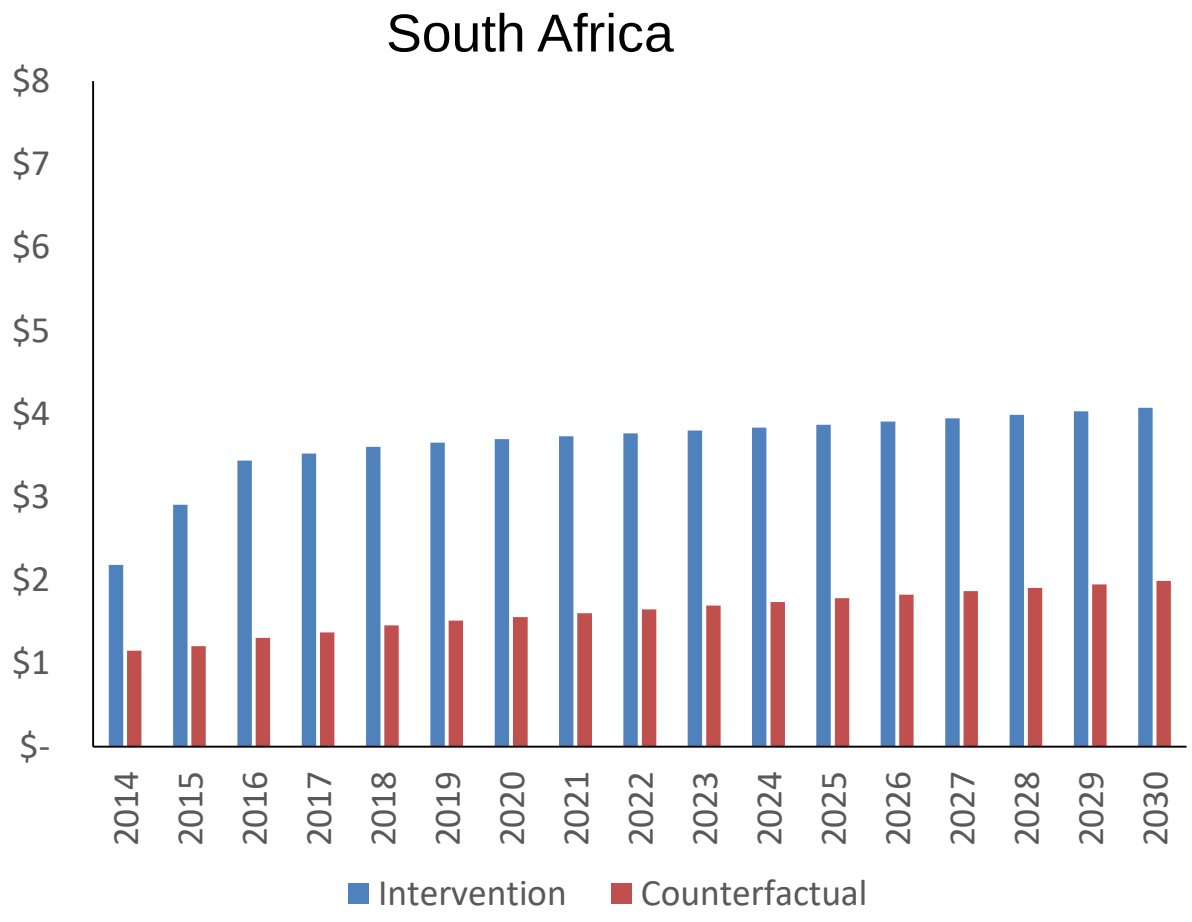
Total annual costs of HIV care (standard-of-care)





Total annual costs of 'PopART continued'



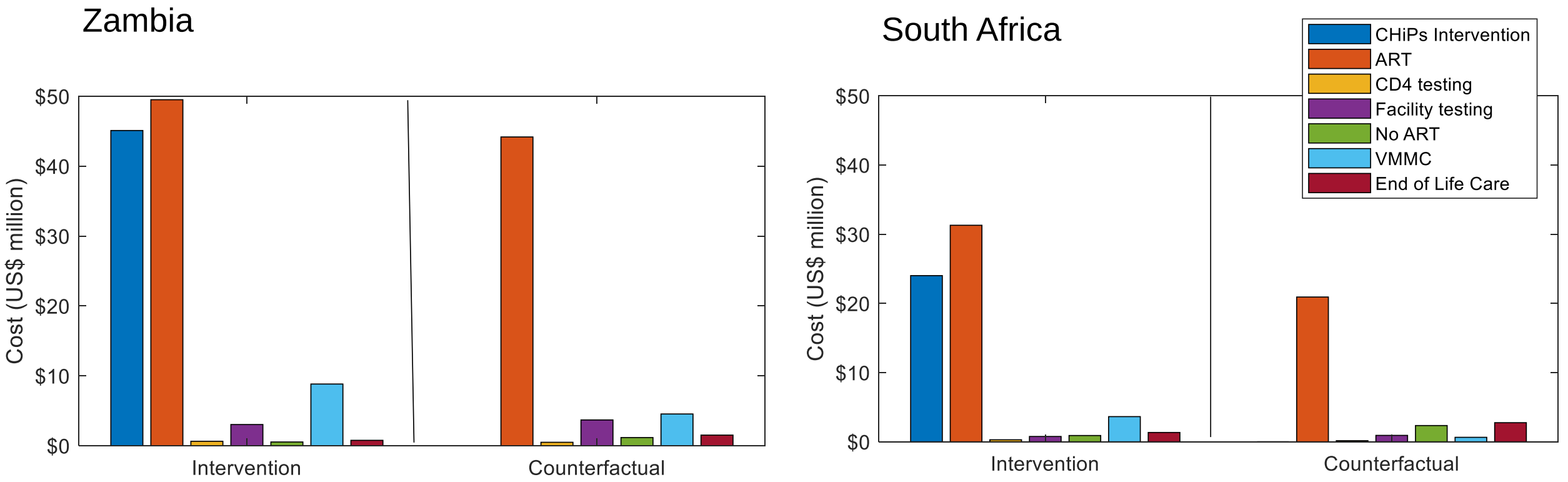


Total cumulative costs of 'PopART continued'

	Zambia	South Africa
Total incremental cost (over 16 years)	$52.8mn	$34.5mn
Average Annual Population	0.4mn	0.2mn

Note: these are the additional costs in addition to standard-of-care; costs of the PopART continued scenario over 16 years

Cumulative costs by category for ‘PopART continued’



Results: Cost-effectiveness

Country	Intervention scenario	Outcome averted	ICER range (US$)
Zambia	PopART continued 2014-30	Infections	1,427 - 2,673
		DALYs	465 - 847
	PopART discontinued (actual trial 2014-17)	Infections	835 - 1,811
		DALYs	196 - 392
South Africa	PopART continued 2014-30	Infections	2,324 - 4,712
		DALYs	503 - 922
	PopART discontinued (actual trial 2014-17)	Infections	1,493 - 3,700
		DALYs	233 - 513

Conclusions

- PopART is likely to be cost-effective in both countries
- But PopART intervention is not cost-saving to the healthcare systems
- Consider affordability when multiplying by population sizes
- Explore alternative implementation scenarios
- Projections rest on many assumptions
  - Parameters assumed constant over the projection horizons
  - Technological innovation, unpredictable population dynamics and behaviour change

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