Free primary education

Policy area nominated by Malawi

Evidence: Primary education

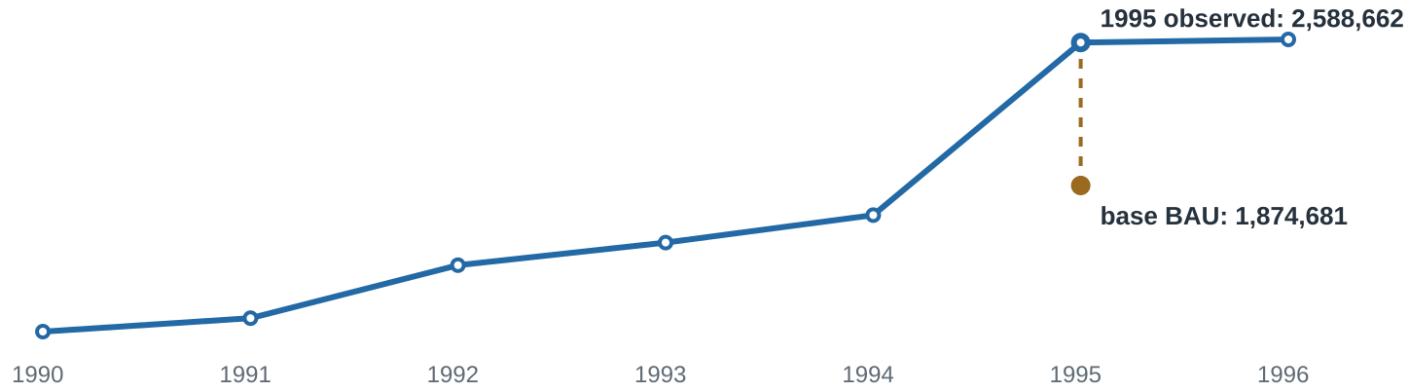
- Primary education generates large social returns
  - **The key CBA issue is not just more enrollment, but more effective learning**
- Evidence base:
  - **Psacharopoulos' returns-to-education work, later updated with Patrinos, provides the standard foundation for monetizing schooling benefits through wage/earnings returns**
  - **8.8% return to one effective year of schooling**
  - **Earnings gain = effective school-years × 8.8% × PV lifetime income**

Primary Education is good, but, “What changes when school fees are abolished?”

HISTORIC CASE

Enrollment shock from 1994/95 abolition of primary school fees

Observed enrollment surged after fee abolition. The CBA then subtracts a business-as-usual path to avoid counting growth that would have happened anyway.



OBSERVED PUPILS

2.59m

1995

BASE BAU PUPILS

1.87m

1995 counterfactual

INCREMENTAL PUPIL-YEARS

713,981

base case additionality

GROSS ENROLLMENT

100% → 153%

1994 to 1995 context check

CBA MECHANICS

What enters the BCR

Adjust for quality challenges from overcrowding, change in drop-out and grade repetition rates

713,981 incremental school-years x **55%** effective learning

Benefits counted

- Lifetime income benefit: US$190.2m
- Household school-fee savings (transfer): US$17.4m
- Caregiver time saving: US$4.2m

PV = US$212m

Costs counted

- Public schooling cost: US$34.3m
- Public fee replacement (transfer): US$27.8m
- Household non-fee cost: US$10.6m

PV = US$73m

BCR 212/73 = 2.9 FAIR

How assumptions flow into the BCR

Base case shown, parameters should be validated or replaced before treated as an evaluation

PV benefits = (713,981 × 55% × US$5,505 × 8.8%) + (1,160,700 × US$15) + (713,981 × US$6) = **US$211.9m**

PV costs = (713,981 × US$48) + (1,874,681 × US$15) + (713,981 × US$15) = **US$72.6m**

BCR

2.9 = 211.9 / 72.6

Inputs and assumptions to validate

Step	Base-case calculation and parameters	Validation / replacement evidence
1. Scale	2.59m observed pupils − 1.87m BAU = 713,981 incremental pupil-years; fee-relief scale = 2.59m	Use Ministry grade–age/district panel, causal counterfactual, and verified fee-covered pupils.
2. Learning	713,981 × 55% effective-learning adjustment = 392,690 effective school-years.	Use marginal entrants' attendance, progression, completion, repetition, and learning assessment data.
3. Earnings	392,690 × (US$296 median income × 18.59 lifetime multiple* × 8.8% return [evidence transfer]) = US$190.2m lifetime-income benefit	Replace with Malawi wage/income microdata, age–earnings profile, and returns to schooling.
4. Other benefits	Fee savings: 1.16m × US$15 ; caregiver time: 713,981 × US$6 = US$42.5m.	Use fee schedules/school revenue, household education expenditure, and caregiver time-use data.
5. Costs	Public: 713,981 × US$48 ; fee replacement: 1.87m × US$15 ; household non-fee: 713,981 × US$15 = US$83.2m.	Use Ministry budget execution by primary level/input and household non-fee education costs.

*Lifetime multiple embeds child age 10, working ages 18–65, 2% real income growth, 5% discount rate, and normalized age-earnings weights.

TVET: What does the cost-benefit evidence say?

Technical and Vocational Education and Training

Evidence: Technical and Vocational Training

- Benefit-cost ratios
  - **A typical result is around 1. The value of all benefits are about the same size as the sum of all costs**
  - **Studies of returns to spending on vocational vs. general education in both high-income and developing countries conclude that vocational education does not pass the cost-benefit test**

Assessment: Benefits and costs are always assessed against a counterfactual

- **Counterfactual:**
  Individual does **not** undertake vocational education and enters the workforce immediately
- **Intervention**:
  Individual does a two year TVET course and enters the workforce upon completion

Basic BCA Model

- Difference in costs
  - **Tuition fees / schooling costs**
  - **Foregone earnings during TVET**
- Difference in benefits
  - **Higher chance of being employed**
  - **Difference in wages, if employed**
  - **This leads to higher expected lifetime wages**
  - **The benefit is NOT the whole wage after completing TVET**

Youth unemployment - high graduate unemployment

Policy area nominated by Eswatini

Potential policy options to consider

Option	Core problem addressed
Graduate internship / wage subsidy	Lack of work experience
Employer-led curriculum and TVET reform	Skills mismatch
Youth entrepreneurship package	Lack of wage jobs and capital
Labor-market data and TVET registry	Poor targeting and fragmentation
Private-sector job creation	Too few skilled jobs

How to analyze using CBA

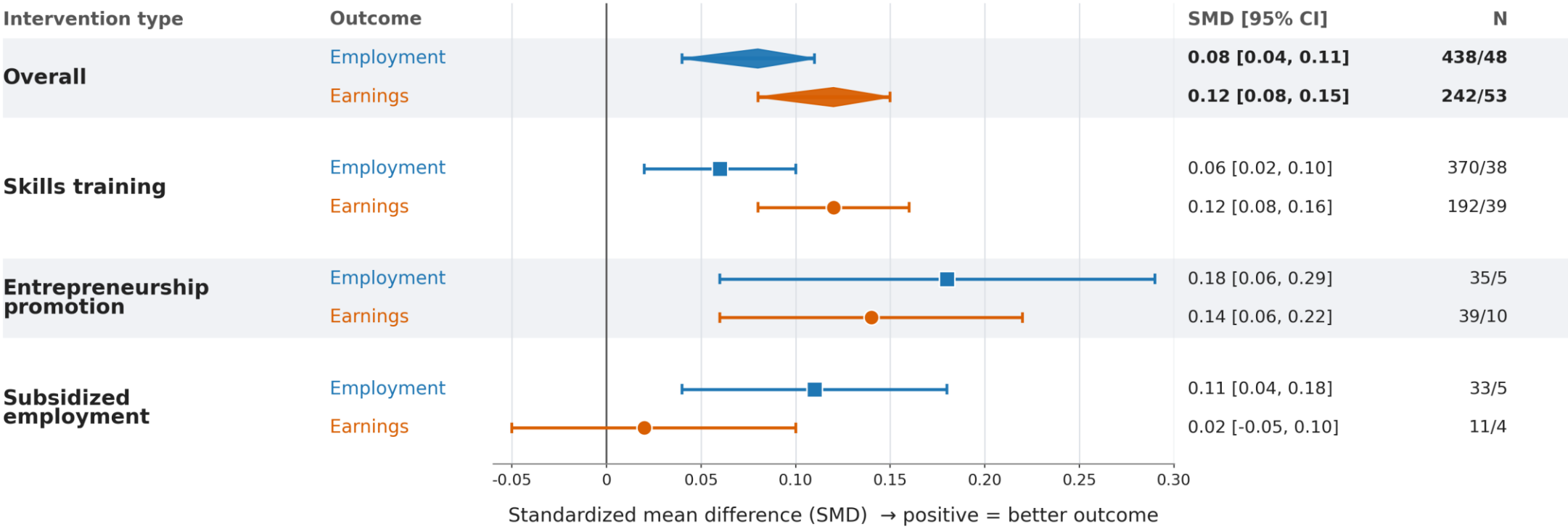
Before making policy decisions

What does the evidence say

- Campbell systematic review of 113 reports of 107 interventions in 31 countries. (Kluve et al, 2017)
- Overall, youth employment interventions
  - **Increase the employment and earnings of those youth who participate in them**
  - **But the effect is small with a lot of variation between programs**
  - **Effects are larger in low- and middle-income countries than in high-income countries, and larger for disadvantaged youth**

Youth employment interventions: Work but small impacts

Effects in low- and middle-income countries



Small effects with high variance -> Careful designs -> M&E -> End or re-design ineffective programs

Source: Kluve et al. (2017), *Campbell Systematic Reviews*, Tables 20 and 22 / Figures 14 and 16. Diamonds denote overall estimates; employment services dropped out of the LMIC subgroup due to small sample size.

But the CBA question is not “Do youth employment programs work?”

Setup for cost-benefit analysis

- Counterfactual:
  - **What would happen without the program?**
- Benefits:
  - **Extra employment, higher earnings, business profits/survival where relevant**
- Costs:
  - **Training delivery, stipends, grants/credit subsidies, administration, employer subsidies, participant time**
- Adjustment factors:
  - **Deadweight, displacement, duration of impacts, targeting quality, scale-up risk**
- Sensitivity analysis:
  - **Low/base/high cases shows the robustness of the results**

Graduate Internship Wage Subsidy

Graduate Internship Wage Subsidy

- Counterfactual:
  - **Graduates search for jobs or work experience without a new public subsidy**
  - **Some firms would hire or do internships for graduates anyway**
- Example policy:
  - **1,000 subsidized 12-month graduate internships**
  - **Government paying SZL 3,000/month toward a SZL 6,000 stipend**
- Effect size used:
  - **Base case assumes 50% additionality, the other internships would happen without subsidy**
  - **7 percentage-point post-program employment gain, transferred from a South Africa wage-subsidy experiment (3ie)**
  - **35 expected additional employed graduate-years per year**
  - **Benefit limited to 10 years (at some point graduates with no internship experience are assumed to catch up)**


1,000 internships
500 internships additional
500 x 7% =
35 additional employments produced by the subsidy

Graduate Internship Wage Subsidy

- Benefits (PV=47M):
  - **Post-program wage-gain for 35 additional employed (3M/year)**
  - **Internship-period production for 500 additional placements (28M)**
- Costs (PV=60M)
  - **Public subsidy for *all* 1,000 placements and administration (40M)**
  - **Employer supervision and co-payment for 500 additional placements (19M)**
  - **Graduate time opportunity cost for 500 additional placements (1M)**
- BCR range:
  - **47M/60M = 0.8 base (POOR)**
- Evidence:
  - **The Campbell review warns against assuming wage subsidies are generally high-returning without strong design**

Employer-Led Curriculum & TVET Reform

Employer-Led Curriculum & TVET Reform

- Counterfactual:
  - **TVET providers continue with weak employer linkage, limited labor-market feedback, and limited work-based learning.**
- Example Policy:
  - **Employers help define standards, revise curricula, train instructors, upgrade equipment, and expand work-based learning and job-transition support**
- Effect size used:
  - **Base case assumes 2,000 trainees/year**
  - **5 percentage-point employment gain**
  - **100 incremental employed trainees per cohort, plus a 4% skills-match earnings premium for half of trainees**

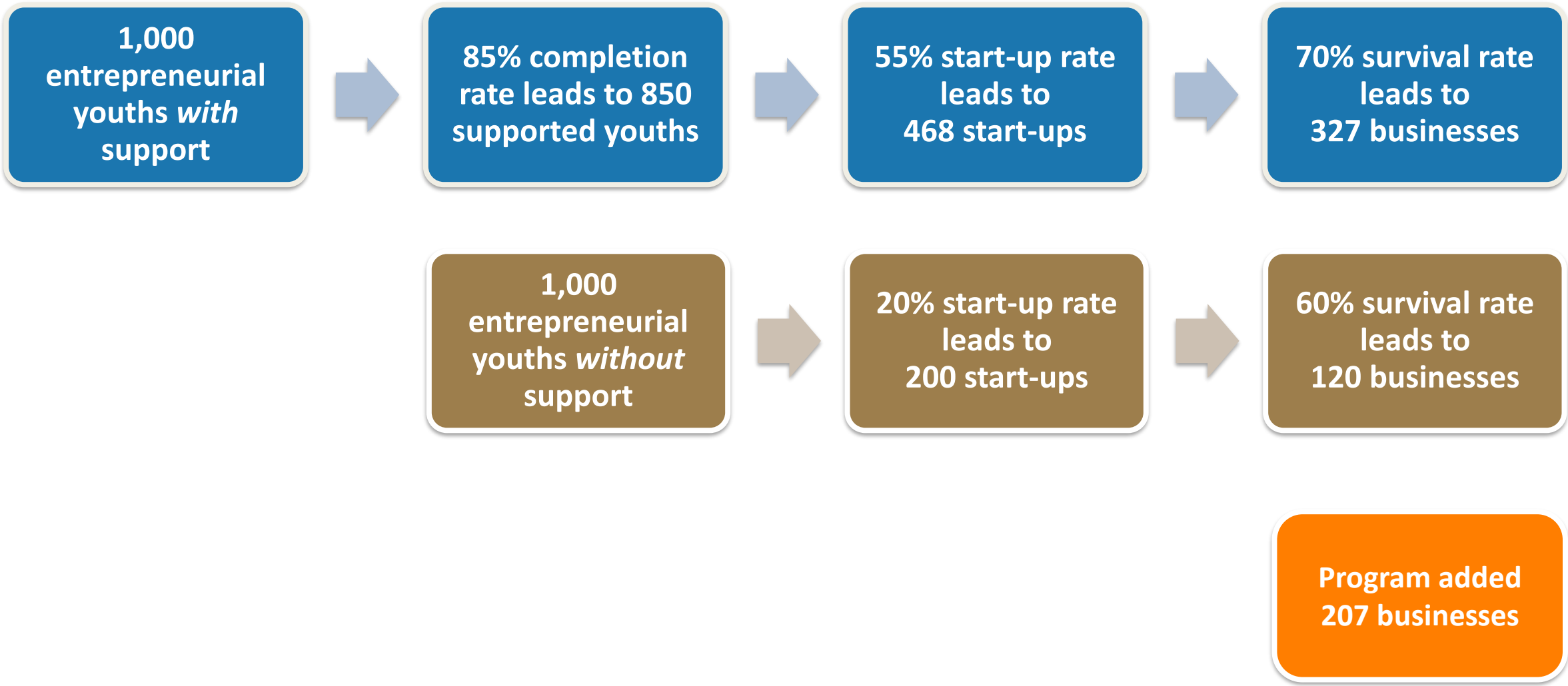
Employer-Led Curriculum & TVET Reform

- Benefits (PV=257M for 5 cohorts):
  - **Earnings for 100 trainees gaining additional employment (7M/year)**
  - **Skills-match productivity gains for 1,000 trainees (3M/year)**
- Costs (PV=181M for 5 cohorts):
  - **Setup and reform costs public (75M setup + 12M/year) and provider (10M setup + 3M/year)**
  - **Employer engagement (4M/year), and additional costs for trainees (2M/year)**
- BCR range:
  - **257M/181M = 1.4 (FAIR)**
- Evidence:
  - **Effect sizes are international assumptions, not local impacts**

Youth entrepreneurship package

Youth entrepreneurship package

- Counterfactual:
  - **Some youth start and sustain businesses without support, while others continue searching for scarce wage jobs**
- Policy example:
  - **1,000 youth receive SZL 10,000 seed capital, entrepreneurship training, mentoring, and follow-up support**
- Effect size used:
  - **Base case assumes 85% completion, 55% startup, 70% survival**
  - **Compared with 20% BAU startup and 60% BAU survival**
  - **Yielding 207 incremental active businesses and 52 annual worker jobs**


1,000 entrepreneurial youths *with* support
85% completion rate leads to 850 supported youths
55% start-up rate leads to 468 start-ups
70% survival rate leads to 327 businesses
1,000 entrepreneurial youths *without* support
20% start-up rate leads to 200 start-ups
60% survival rate leads to 120 businesses
Program added 207 businesses

Youth entrepreneurship package

- Benefits (PV=34M):
  - **Seed transfer for all 1,000 participants (10M)**
  - **Higher owner income (4M/year), and additional worker output (3M/year) for the 207 incremental businesses**
- Costs (PV=19M):
  - **Seed capital (10M), training, mentoring, and administration (6M)**
  - **Participant opportunity costs (3M) represents forgone earnings, job-search time, travel time, or other participation time costs**
- BCR range:
  - **34M/19M = 1.8 (FAIR)**
- Evidence:
  - **Campbell review and Rwanda cash/training evidence suggest entrepreneurship packages can be cost-effective, but effects are heterogeneous**

Labor-market data and TVET registry

Labor-market data and TVET registry

- Counterfactual:
  - **TVET providers, employers, employment services, youth centers, and agencies continue using fragmented information**
  - **Students choose pathways with limited labor-market guidance, unemployed people lack maintained skills profiles, and government lacks regular skills-demand data**
- Policy:
  - **A national digital platform combines employer demand and vacancy data, TVET course and graduate-outcome data, unemployed skills profiles, student guidance, matching dashboards, and links to youth/social-service systems**
- Effect size used:
  - **Base case assumes 5,000 guided students/year and 30,000 unemployed skills profiles/year**
  - **Benefits are driven by 75 incremental employed guided students per cohort, 300 unemployed people matched earlier, a 1.5% skills-match earnings premium, and two months earlier employment for incremental matches**

Monetizing better student guidance and faster job matching

Student employment gain	75 additional employed students × SZL 73,500 wage benchmark x 80% for possible displacement	**= SZL 4.5m per year for five years**
Skills-match premium	5,000 guided students × 40% receiving premium × SZL 73,500 wage benchmark × 2% premium x 80% for possible displacement	**= SZL 2.3m per year for five years**
Earlier matching benefit	30,000 profiles × 1% matched earlier × SZL 73,500 wage benchmark × 2/12 year × 80% for possible displacement	**= SZL 2.9m**

Labor-market data and TVET registry

- Benefits (PV 170M for 5 cohorts):
  - **Per cohort: skills-match productivity gain (2M/year), incremental employment (5M/year), earlier job matching (3M)**
- Costs: (PV 80M for 5 cohorts)
  - **Public platform setup (30M) and operation (6M/year), provider and employer reporting (3M/year), and user time for students and jobseekers (2M/year)**
- BCR:
  - **170M/80M = 2.1 (FAIR)**
- Evidence:
  - **World Bank sources support the problem and mechanism—missing TVET outcome, employer satisfaction, tracer, and skills-demand data, plus the need for youth intermediation and interoperable digital platforms.**
  - **Not a Eswatini causal estimate for this exact platform**

What is the conclusion?

Before decision on any piloting or scaling-up

No silver bullets. High risk for failure.

Rank	Option	BCR
1	Labor-market data and TVET registry	2.1 (FAIR)
2	Youth entrepreneurship package	1.8 base (FAIR
3	Employer-led curriculum and TVET reform	1.4 base (FAIR)
4	Graduate internship / wage subsidy	0.8 base (POOR)

Universal Healthcare Coverage

Policy area nominated by Lesotho

Optimizing UHC: more value per public dollar

- UHC shouldn’t be a list of promised services
- How would an economist optimize?
- World class evidence chain
  - **IHME → country burden, coverage gaps, financing and efficiency**
  - **DCP3 → interventions, packages, CEA, ECEA and BCR evidence**
  - **DCP4 → how to turn priorities into funded, implementable packages**
  - **National data → affordability, feasibility, budget impact and trade-offs**

Three methods, three different questions

Method	Question	Output
Cost-effectiveness analysis	How much health do we gain per dollar?	Cost per DALY averted, QALY gained or death averted
Benefit–cost analysis	Do *all* monetized benefits exceed *all* costs?	BCR = PV benefits ÷ PV costs
Budget impact analysis	Can government actually pay and implement?	Annual and multi-year fiscal cost

DCP4 recognizes: The finance-ministry problem

- Developing an “Essential Health Care Package” does not automatically generate the money to fund it
- Otherwise, UHC becomes implicit rationing (waiting times, stock-outs, location-dependent, etc.)

IHME = Institute for Health Metrics and Evaluation

- IHME helps to identify:
  1. **Leading causes of DALYs**
  2. **Leading causes of premature death**
  3. **Risk factors and trends**
  4. **Effective-coverage gaps**
  5. **Health financing pressures**
  6. **Possible system-level inefficiency**



Institute for Health Metrics and Evaluation

Single | Explore | Compare

Settings
Use advanced settings

Display
Cause | Risk

Measure
YLDs | DALYs | Deaths

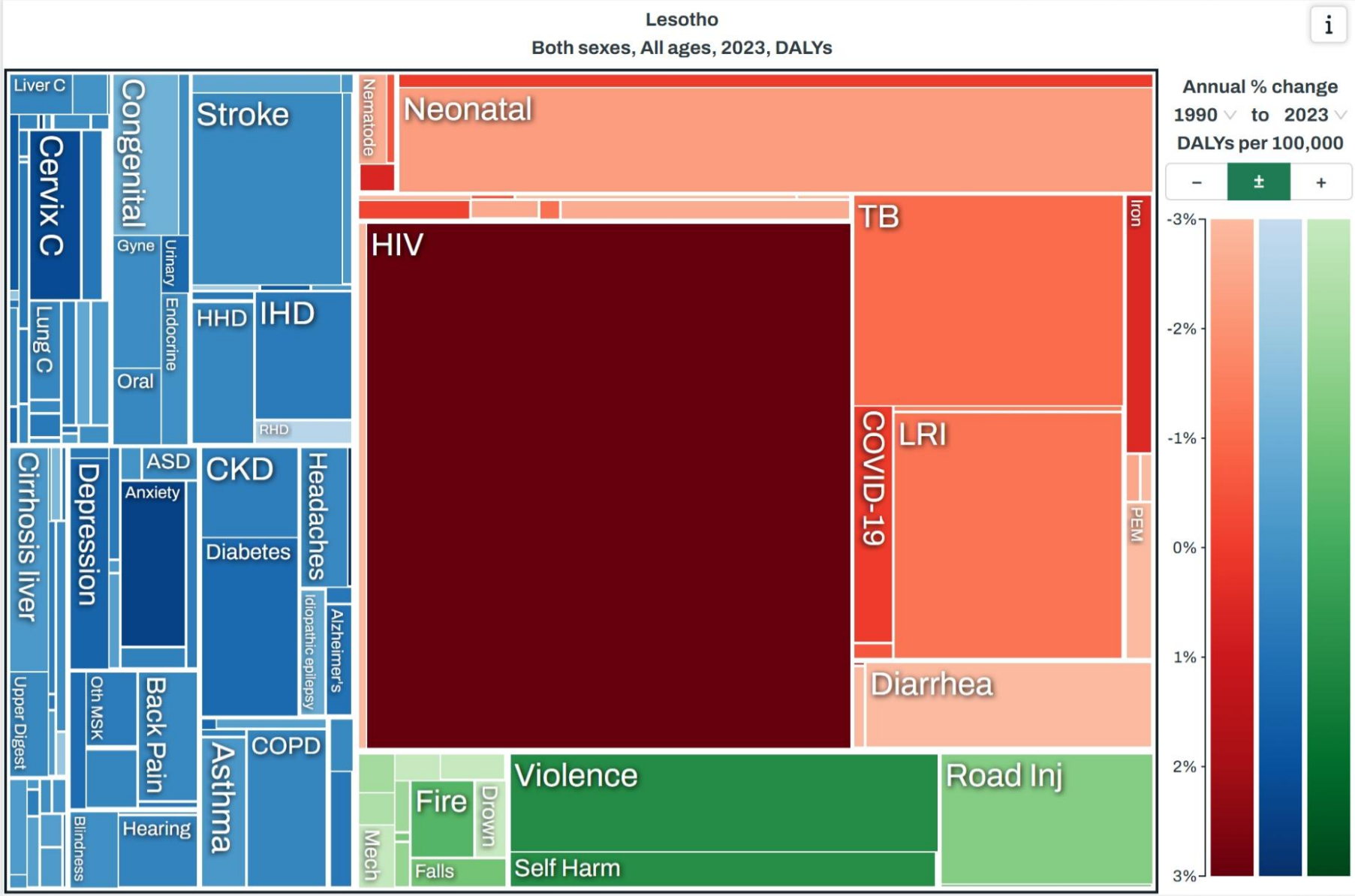
Location
Lesotho

Year
2023

Age
All | <5 | 5-14
15-49 | 50-69 | 70+

Sex
Male | Female | Both

Take tour



http://ihmeuw.org/7n59

DCP3: match problems to evidence-backed interventions

- Disease Control Priorities
- DCP3 provides the intervention evidence base:
  - **Essential UHC Package: 218 interventions**
  - **Highest-Priority Package: 108 interventions**
  - **Intersectoral package: 71 policies, including 29 core priorities**
- But, any package needs to reflect country burden, capacity, financing, resources and local costs

Recommended First-Phase Package

These services should form the core universal healthcare package before broader expansion:

- Community health workers & outreach linked to PHC
- Reliable essential medicines and commodities
- Maternal, newborn, child & adolescent health services
- Immunization
- HIV testing, treatment & prevention for missed groups
- TB screening, diagnosis & adherence support
- Hypertension & Diabetes screening and first-line management
- Basic palliative care and pain relief
- Referral triage, emergency transport & first-level hospital support
- Financial protection for covered HPP services

Using published costing for rough estimate

How should Lesotho prioritize its Universal Health Coverage (UHC) benefits package given a constrained health budget of M3.1 billion?

Phase 1 (Now)

PHC-First Highest-Priority Package

Within budget (79%)

Phase 2 (Later)

Expanded Essential UHC

Requires more fiscal space

DCP4: Help to turn the list into an implementable package

- DCP4 adds the implementation filter:
  1. **Is the package realistic to finance?**
  2. **Are coverage targets feasible?**
  3. **Are workforce, medicines, diagnostics and referral systems available?**
  4. **Do budgets and purchasing arrangements support the priority services?**
  5. **Are private and nonprofit providers relevant?**
  6. **Is effective coverage being monitored?**
  7. **Is there a process for revision?**

Best Case from DCP4: Malawi's UHC process

- The Essential Healthcare Package process used:
  - **Burden of disease**
  - **Cost-effectiveness**
  - **Equity**
  - **Continuum of care**
  - **Complementarities**
  - **Local costing data**
  - **Resource mapping**
  - **Realistic coverage scenarios**
- Key lesson: more than an academic exercise to include actual resources and implementation capacity

Four evidence-backed ways to improve value

1. Improve the intervention mix: Shift incremental funding toward DCP3 interventions that match IHME burden and coverage gaps
2. Improve effective coverage and quality: Fix delivery failures before expanding the entitlement list
3. Use the right delivery platform: Deliver services at the lowest level that can provide them safely and effectively
4. Reduce input prices: Procurement, vaccine prices and donated medicines can change cost-effectiveness

Summary

- IHME tells us
  - **where the health losses and coverage gaps are**
- DCP3 tells us
  - **which interventions are likely to produce high value**
- DCP4 tells us
  - **how to design a package that is fundable and implementable**

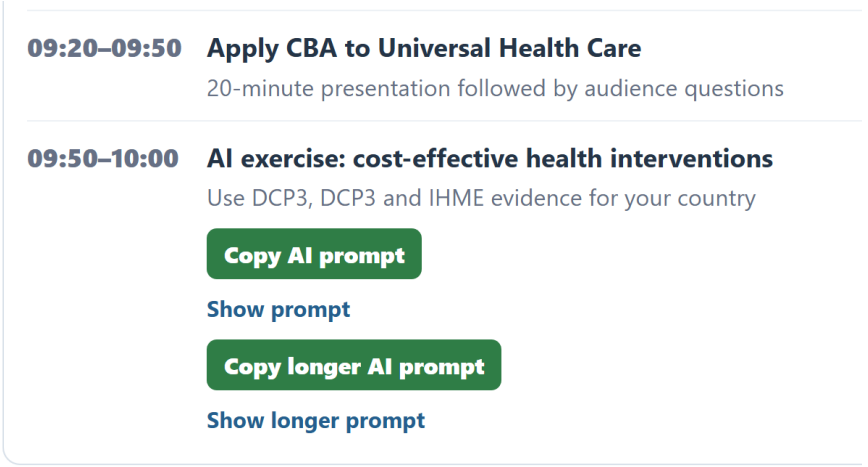
AI exercise: cost-effective health interventions

Use IHME, DCP3 and DCP4 evidence for your country

AI exercise:
Audit the evidence in IHME, DCP3, and DCP4

- Participants ask AI to:
  - **Identify IHME burden and coverage gaps**
  - **Match those gaps to DCP3 interventions or packages**
  - **Apply DCP4 implementation lessons**
  - **Distinguish CEA, ECEA, BCA and budget impact**
  - **Identify missing national data**
  - **Reject unsupported numbers**





Health-care with the highest value-for-money

- Policies designed to produce excellent benefit-cost ratios (BCR over 15)
- Read in Best Things First
  - **CHAPTER 6. Maternal and newborn health**
  - **CHAPTER 8. Malaria**
  - **CHAPTER 10. Nutrition**
  - **CHAPTER 11. Chronic Diseases**
  - **CHAPTER 12. Childhood immunization**

