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COMPARATIVE ANALYSIS · OCTOBER 2026

Kenya's cancer burden and the measurement gap: comparing the National Cancer Control Strategies 2017–2022 and 2023–2027

A biostatistics and epidemiology review of incidence, mortality, risk-factor and service-coverage statistics, targets, data quality and costing in Kenya's second and third national cancer control strategies.

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SOURCE DOCUMENTS: MINISTRY OF HEALTH, KENYA · NCCS 2017–2022 (80 PP.) · NCCS 2023–2027 (98 PP.)

EXECUTIVE SUMMARY

A growing burden, measured with borrowed data

Kenya's recorded cancer burden rose from about 37,000 new cases a year (2012) to 42,116 (2020), and is projected to reach 58,000 in 2028 and 95,217 by 2040. Both strategies rely almost entirely on GLOBOCAN model estimates, and the 2023 plan could not measure most of the 2017 plan's targets because the planned STEPS survey was never done.

42,116
new cancer cases in 2020 (GLOBOCAN), up from about 37,000 in 2012

0.64
mortality-to-incidence ratio in 2020; 0.9 or higher for oesophageal, liver and lung cancer

≈26%
of new cancer patients access treatment (11,040 of 42,000)

KES 31.6bn
true sum of 2023–2027 cost components; the plan states KES 49.2bn

- **The burden is rising faster than the population.** Projected cases grow about 4.1% a year to 2040, roughly double population growth, driven by ageing, urbanisation and risk factors.
- **The case mix is shifting.** Breast cancer (ASR 38.3 → 41.0) has overtaken cervical cancer (40.1 → 31.3) in women; prostate cancer rose from 31.6 to 39.9 in men, while oesophageal cancer fell in both sexes.
- **Lethality is high.** The mortality-to-incidence ratio of 0.64 (0.77 in 2012) reflects late diagnosis: 70–80% of cases presented at an advanced stage in 2017 and about 69–70% in 2023.
- **The 2017 targets were largely unmeasured.** Tobacco (13.1–13.3%) and alcohol (19%) baselines in 2023 still come from STEPS 2015. Only 28% of the 215 planned interventions were fully implemented.
- **The 2023 targets are ambitious.** They include breast screening from 1% to 30%, palliative care access from 2% to 50%, and the cancer budget from 0.8% to 10% of the health budget (a 12.5-fold rise).

- **Data defects exist in both plans**, including a double-counted cost total, inconsistent baselines (cervical screening 31% vs 42%), a likely swapped sex split for prevalent cases, and a county incidence map with implausible units.

01 · SCOPE AND METHODS

Two strategies, one data source

Both documents are Ministry of Health, Kenya strategies. The 2017–2022 plan was the second national cancer control strategy; the 2023–2027 plan is the third and draws on an end-term evaluation of its predecessor, a WHO–IAEA–IARC imPACT review, and the National Cancer Taskforce report of 2022.

ATTRIBUTE	NCCS 2017–2022	NCCS 2023–2027
Burden data	GLOBOCAN 2012 (Ferlay et al. 2013); WHO NCD country profile 2014	GLOBOCAN 2018 and 2020; Global Cancer Observatory projections; 2019 county map
Risk-factor data	STEPS 2015	STEPS 2015 (no newer survey); KHIS 2022 for vaccination
Structure	5 pillars, 33 strategic objectives, 215 interventions	5 key result areas; one headline indicator per area
Overall goal	Reduce incidence, morbidity and mortality; improve down-staging and survival by 2022 (not quantified)	Reduce premature cancer mortality by one third by 2028
Costing	None (deferred to a "next phase")	WHO costing model; stated KES 49.2bn
M&E	Implementation matrix with objective-level targets	MEAL framework (2023–2030) and Common Results and Accountability Framework

Method

Statistics were extracted from each strategy's burden section, pillar narratives, implementation matrix or results framework, costing tables and appendices. Derived measures (mortality-to-incidence ratios, growth rates, arithmetic checks) were computed from the published numbers.

Comparability caveat

GLOBOCAN estimates are modelled from a few regional registries that cover a small share of Kenyans, and methods change between editions. Differences between 2012, 2018 and 2020 mix real change with re-estimation.

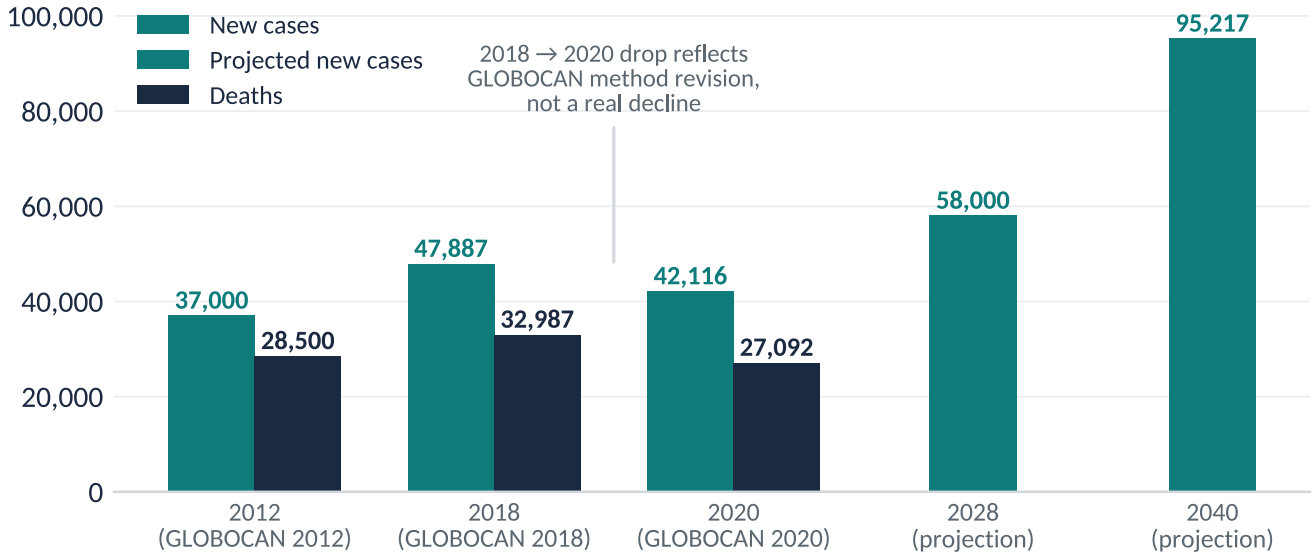
02 · EPIDEMIC PROFILE

More cases each year, with breast cancer now leading

Reported incidence rose by about 14% between the 2012 and 2020 estimates, while deaths stayed near 27,000–33,000. The 2018 estimate (47,887 cases, 32,987 deaths) is higher than 2020, which signals method revision rather than a real decline.

FIGURE 1

Cancer cases and deaths in Kenya across GLOBOCAN editions and projections

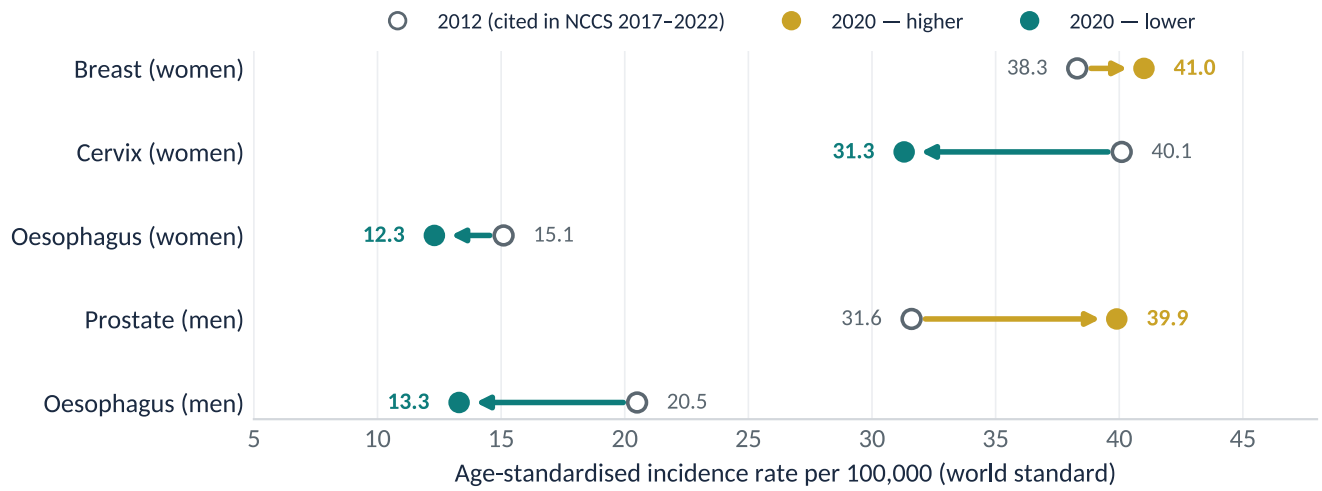


Source: NCCS 2017–2022 (GLOBOCAN 2012); NCCS 2023–2027 Figure 2 country profile (2018, 2020) and Section 1.3 (projections for 2028 and 2040).

INDICATOR	NCCS 2017–2022	NCCS 2023–2027
Reference year and source	2012, GLOBOCAN	2020, GLOBOCAN
Population	—	53,771,300
New cases a year	≈37,000	42,116
Deaths a year	≈28,500	27,092 (26,872 in Appendix 3)
Crude incidence per 100,000 (derived)	—	78.3
New cases, women / men	—	26,550 / 15,566
5-year prevalent cases	—	82,620
Cumulative risk before age 75, women / men	—	18.0% / 14.3%
Childhood cancers (ages 0–19)	—	3,272 (2019)
Rank among causes of death	3rd; 7% of national mortality	3rd

FIGURE 2

Breast and prostate cancer rates rose while cervical and oesophageal rates fell



Source: NCCS 2017–2022, burden section (Ferlay et al. 2013, GLOBOCAN 2012); NCCS 2023–2027 Figure 1 (IARC, 2020). Kaposi sarcoma (16.0 in men, 2012) drops out of the 2020 top ten; editions differ in method.

WHAT THE PROFILE SHOWS

- **Women carry most of the burden.** They account for 63% of new cases (26,550 of 42,116); breast (25.6%) and cervical cancer (19.7%) make up 45% of female cases.
- **Four screenable cancers dominate.** Breast, cervical, colorectal and prostate cancer account for 43.1% of new cases and 36.9% of deaths.
- **Infections remain a major cause.** The population attributable fraction for infections is 31.3% of cases (2012 data), against a 2017 target of cutting infection-related cancers from 33% to 16%. Tobacco accounts for 8.8% of cancer deaths and alcohol 5.9% of cases.
- **Childhood survival is very low.** Survival is 20–30% in both plans, against more than 90% in high-income countries and a 60% target by 2030.

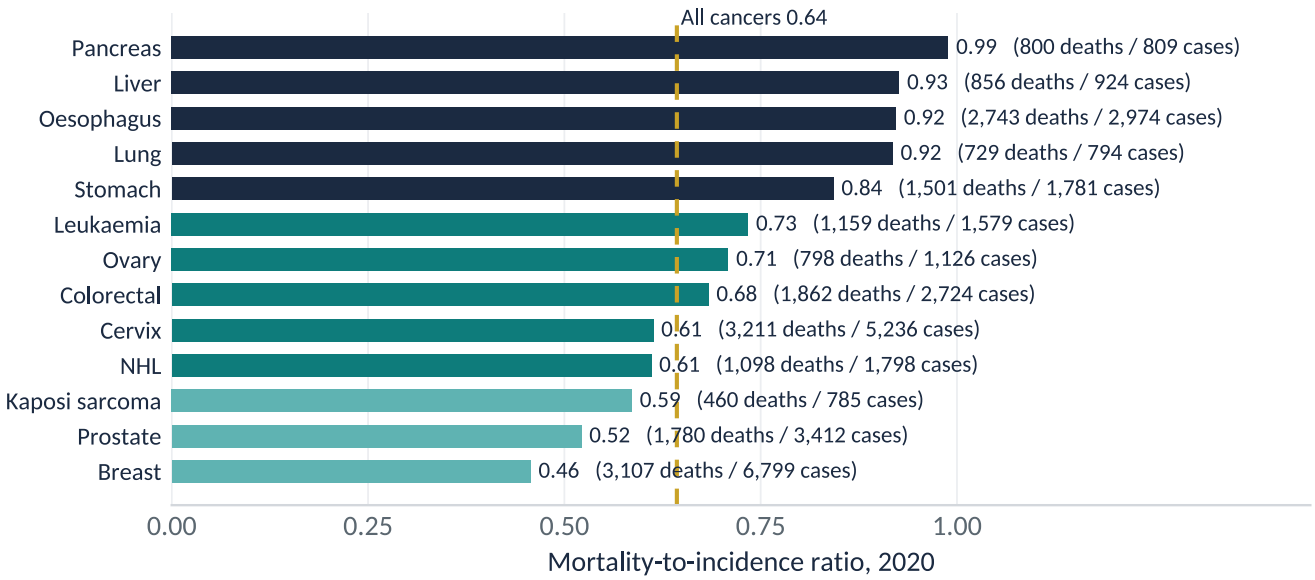
03 · LETHALITY AND LATE DIAGNOSIS

Most cancers are found too late to treat well

Kenya's all-cancer mortality-to-incidence ratio fell from about 0.77 (2012) to 0.64 (2020), but it remains high by international standards. Cancers with no screening pathway, such as oesophageal, liver, pancreatic and lung cancer, have ratios of 0.9 or more.

FIGURE 3

Mortality-to-incidence ratio by cancer site, 2020



Derived from NCCS 2023–2027 Appendix 3 (Global Cancer Observatory, 2020). The ratio is a crude proxy for 1 minus 5-year survival and is sensitive to incidence under-ascertainment.

70–80%
of patients diagnosed at an advanced stage (2017 plan)

69%
advanced cancer detection rate, 2023 baseline

12
comprehensive cancer centres in 2023 (6 public, 6 private)

58
oncologists and 11 medical physicists, about 726 new cases per oncologist

INTERPRETATION NOTE

A falling mortality-to-incidence ratio can come from better survival or from more complete case-finding. Because registry coverage is only 5–10% of the population, the 2012–2020 change cannot be attributed to programme effects.

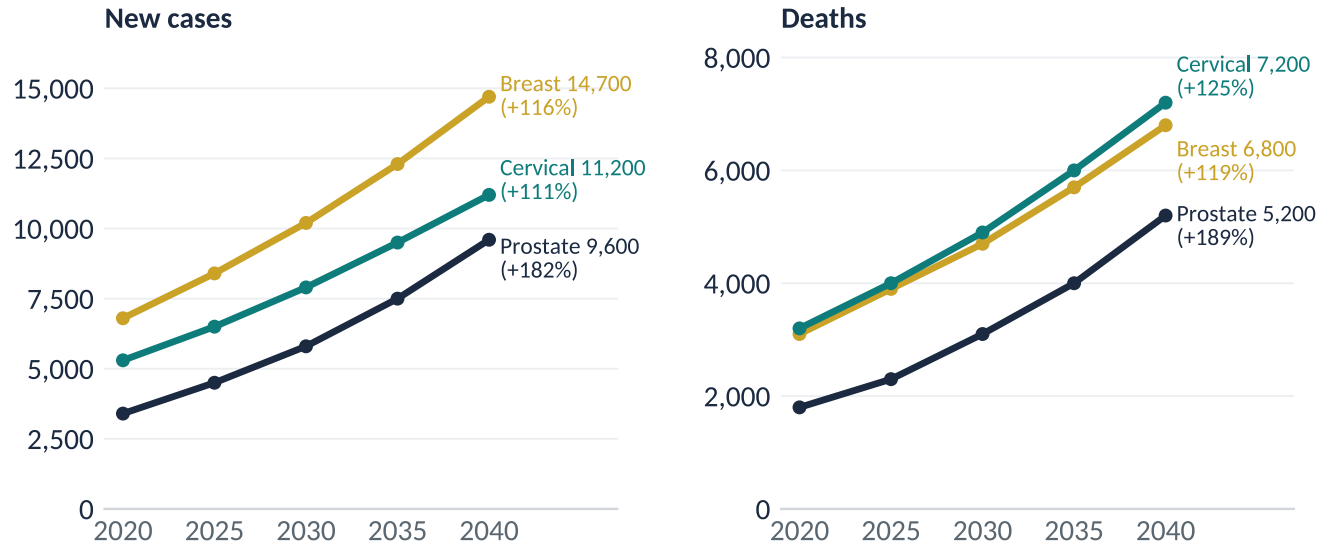
04 · PROJECTIONS

Breast, cervical and prostate cases roughly double by 2040

The 2023 plan projects 58,000 new cases in 2028 and 95,217 by 2040, an annual growth of about 4.1%. Prostate cancer grows fastest, with new cases rising 182% between 2020 and 2040.

FIGURE 4

Projected new cases and deaths for the three highest-burden cancers, 2020–2040



Source: NCCS 2023–2027 Figure 3 (Global Cancer Observatory). Projections assume constant age-specific rates applied to population growth and ageing; they do not include programme effects.

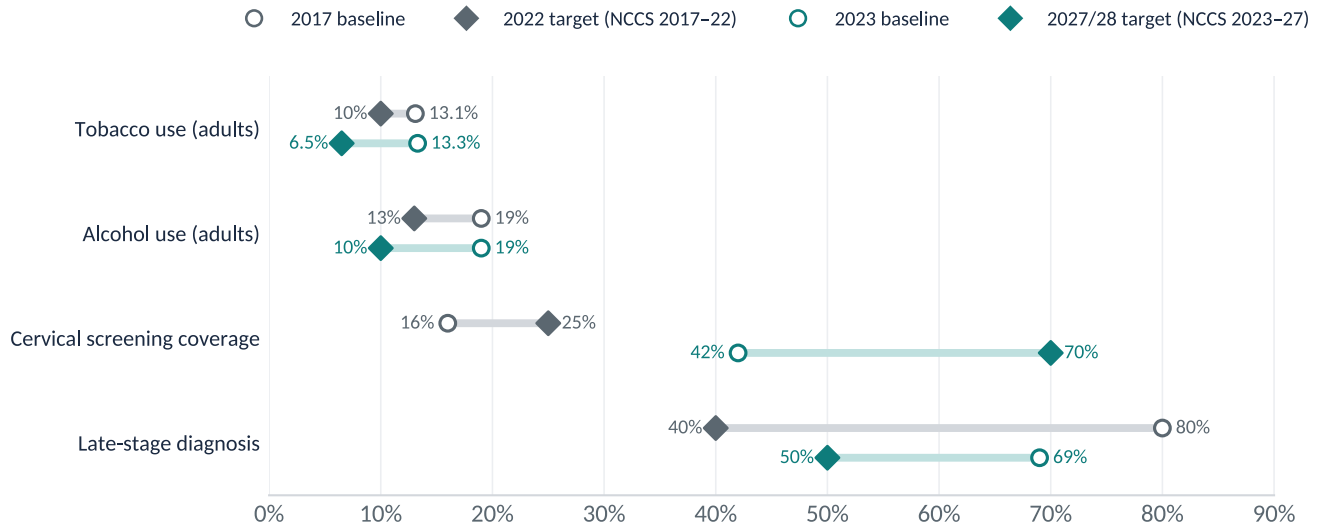
05 · TARGETS AND IMPLEMENTATION

The 2017 targets were set but not measured

The 2017 plan set eight quantified objective targets for 2022, all in Pillar 1. The 2023 plan evaluates none of them directly: only screening coverage and late-stage diagnosis have newer figures, because the STEPS survey and the colorectal screening pilot were not done for lack of funds.

FIGURE 5

Where the 2017 plan aimed to be by 2022, and where the 2023 plan starts

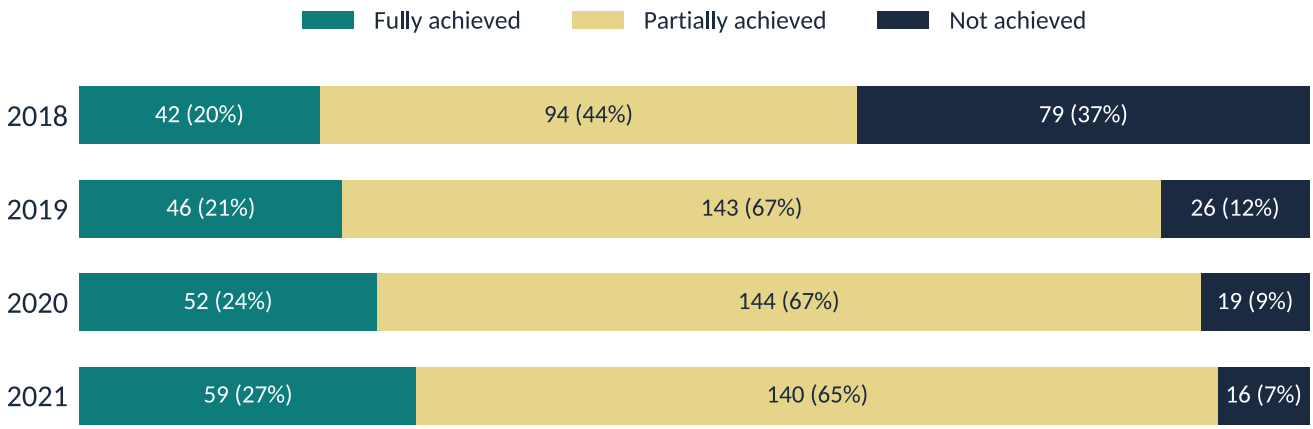


Source: NCCS 2017–2022 implementation matrix (Pillar 1 objective targets); NCCS 2023–2027 Section 4 strategies and Table 13. Tobacco and alcohol "2023 baselines" still come from STEPS 2015.

2017 OBJECTIVE TARGET (BY 2022)	BASELINE	TARGET	STATUS IN 2023 PLAN
Tobacco use	13.1%	10%	Not re-measured; baseline restated as 13.3%
Unhealthy diet	94%	62%	Not re-measured; 7% eat five servings of fruit and vegetables
Physical inactivity	46%	23%	Not re-measured
Alcohol use	19%	13%	Not re-measured; baseline still 19%
Infection-related cancers	33%	16%	PAF 31.3% (2012 data)
Screening coverage (cervical proxy)	16%	25%	31% (text) or 42% (Table 13)
Late-stage diagnosis	80%	40%	69–70%
Access to prevention and screening data	30%	70%	Not reported

FIGURE 6

Only 28% of the 215 planned interventions were fully achieved by 2021

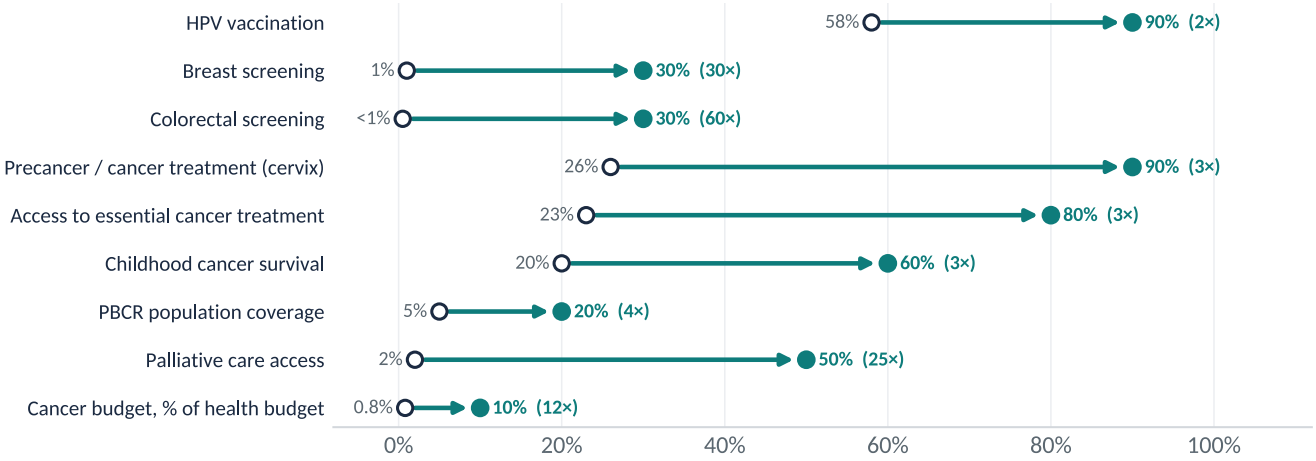


Source: NCCS 2023–2027 Table 3. Shares computed against 215 interventions.

THE 2023 HEADLINE INDICATORS

FIGURE 7

2023–2027 indicators: baseline and target



Source: NCCS 2023–2027 Table 13. The "diagnosis to treatment initiation within 60 days" indicator has no baseline or target. Multipliers show target ÷ baseline.

READING THE TARGETS

- The overall goal (cut premature cancer mortality by one third by 2028) has no stated baseline, and the plan cannot measure it without functional mortality surveillance.
- The late-stage target was relaxed from 40% (2017 plan) to 50%, which is more realistic but signals a slower down-staging path.
- The costing assumes coverage rising 3.5 points a year to 45% by 2028, which conflicts with the 70% cervical screening and 80% treatment-access targets in Table 13.
- Breast and colorectal screening targets of 30% are not matched by budget: colorectal screening is costed only as a KES 78.2m pilot.

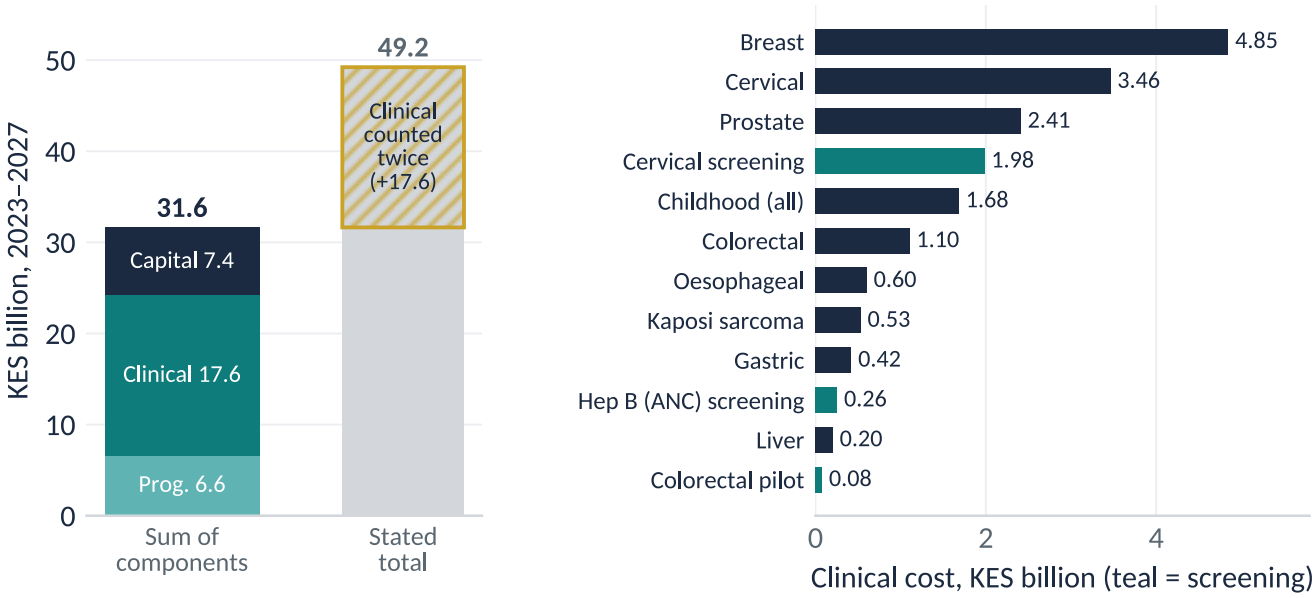
06 · COSTING AND FINANCING

The stated KES 49.2bn double-counts clinical costs

The 2017 plan was never costed; the 2023 plan uses the WHO costing model. Its total of KES 49.2 billion equals programme, clinical and capital costs plus the clinical total a second time. The true sum of its components is KES 31.6 billion.

FIGURE 8

Corrected five-year cost and the clinical budget by service



Source: NCCS 2023–2027 Tables 10 and 11. Year 1 shows the same error: 0.997 + 2.535 + 1.242 = KES 4.78bn, but the stated year-1 total is KES 7.31bn (the extra 2.535bn is clinical costs repeated).

FINANCING FACT	NCCS 2017–2022	NCCS 2023–2027
Total cost	Not costed	KES 31.6bn (stated 49.2bn)
Clinical services	—	KES 17.6bn; breast 27.6% and cervical 19.7% of clinical costs

FINANCING FACT	NCCS 2017–2022	NCCS 2023–2027
Childhood cancers	—	KES 1.68bn (9.6% of clinical costs)
Cancer budget, share of health budget	Not reported	0.8% baseline, 10% target
Health spending context	Not reported	Public health spending 2.2% of GDP; one-third of health spending out of pocket

07 · BIOSTATISTICAL APPRAISAL

Better structure, still weak foundations

The 2023 plan is the more rigorous document, with costing, a results framework and international benchmarks. Both, however, describe Kenya's cancer epidemic with external model estimates, and neither can track its own outcome targets.

DATA ERRORS AND INCONSISTENCIES

ISSUE	LOCATION	EFFECT
Total cost KES 49.2bn includes clinical costs twice	2023 Table 10	Need overstated by KES 17.6bn (56%)
Prevalent cases split 54,156 men / 28,464 women	2023 Section 1.3	Contradicts 63% female incidence; labels likely swapped
County incidence map at 1,200–2,000+ per 100,000	2023 Figure 4	About 20 times the national crude rate (78 per 100,000); unit error
2020 deaths given as 27,092 and 26,872	2023 Section 1.3 vs Appendix 3	Mortality baseline ambiguous
Cervical screening coverage 31% vs 42%	2023 Section 4 vs Table 13	Baseline for a headline indicator uncertain by 11 points
Treatment coverage "about 28%" from 11,040 of 42,000	2023 Section 4.3	Arithmetic gives 26.3%; Table 13 gives 23%
Tobacco baseline 13.1% vs 13.3% from the same survey	2017 / 2023	Minor, but signals no new data
"Costed interventions" claimed, costing deferred	2017 Introduction vs Executive summary	No financial baseline for the 2023 plan to compare against
Overall goal includes reducing "survival rate"	2017 Goal statement	Wording error; survival should increase
Objectives set targets but no indicator definitions or data sources	2017 Implementation matrix	Targets unmeasurable at end-term

STRUCTURAL LIMITATIONS

- **Registry coverage is the binding constraint.** Three population-based registries (Eldoret 1998, Nairobi 2001, Kisumu 2010) covered about 10% of Kenyans in 2017; high-quality coverage is given as 5% in 2023. The plan to add two registries by 2019 was not reported as achieved.
- **No national burden report in five years.** The 2023 plan states Kenya could not publish a detailed cancer burden report, so national estimates depend on GLOBOCAN.

- **Risk-factor data are eight years old.** All behavioural baselines date from STEPS 2015, so primary-prevention progress over the 2017–2022 period is unknown.
- **No survival, stage or mortality data.** Neither plan reports population-based survival or stage distribution by site, and without reliable cause-of-death registration the one-third premature-mortality goal cannot be evaluated directly.

08 · CONCLUSIONS AND RECOMMENDATIONS

Fix the data before chasing the targets

Kenya's cancer burden is growing about 4% a year, shifting toward breast and prostate cancer, and is still diagnosed mostly at a late stage. The 2023–2027 strategy is better structured and costed than its predecessor, but neither strategy produced the data needed to show whether control efforts are working.

01 Correct the 2023 cost total to KES 31.6bn before using it for budgeting or advocacy.

02 Reconcile baselines (cervical screening 31% or 42%; treatment access 23%, 26% or 28%; 2020 deaths 27,092 or 26,872) and publish indicator definitions and data sources.

03 Fund a new STEPS survey early in the period, so tobacco, alcohol, diet and activity targets can be evaluated by 2028.

04 Prioritise population-based registry expansion to the 20% coverage target and publish a national cancer burden report with stage distribution.

05 Set a measurable baseline for premature cancer mortality (ages 30–69) and track it with age-standardised rates rather than crude counts.

06 Report mortality-to-incidence ratios and stage at diagnosis by site and county as routine early-detection performance measures.

07 Align coverage assumptions in the costing (45% by 2028) with the results framework targets, or revise the targets.

SOURCES

Ministry of Health, Kenya (2017). *National Cancer Control Strategy 2017–2022.* Nairobi: MoH.
Ministry of Health, Kenya (2023). *The National Cancer Control Strategy (2023–2027).* Nairobi: MoH.
All epidemiological figures are estimates reported in these strategies (mainly GLOBOCAN 2012, 2018 and 2020); derived measures are computed by the author from the published values.

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