Cancer in the Commonwealth: a *Lancet Oncology* Commission

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Cancer is now one of the defining health and development challenges of our time. The 56 nations of the Commonwealth, home to 2·7 billion people, mirror this global burden. Recorded cancer cases across member states rose by 35% in 2008–18 and the number of deaths reached almost 1·7 million in 2018. The *Lancet Oncology* Commission on cancer in the Commonwealth was convened to ask a deceptively simple question: how can 56 diverse nations act collectively to close the widening gap between the burden of cancer and the capacity of each country to respond? 80 researchers, clinicians, policy makers, and civil society members, organised into five working groups and ten research streams, spent 2 years assembling the evidence base for this report. Using a validated microsimulation model, we estimate that 5-year net survival across eleven common cancers in the Commonwealth stood at just 30·7% in 2020, ranging from 4·1% in low-income countries (LICs) to 59·0% in high-income countries (HICs), driven overwhelmingly by late-stage presentation, which affects 62% of patients in LICs compared with 43% in HICs. This difference in survival is compounded by chronic underinvestment. Infrastructure gaps are equally stark: only 12% of countries meet international benchmarks for CT imaging, 22% for hospital density, and 40% for radiotherapy. Governance is underdeveloped too: barely one-third of Commonwealth countries have a national cancer control plan meeting basic quality criteria. Research investment also mirrors these inequities: between 2016 and 2023, Commonwealth countries collectively invested only US$165 per cancer-related disability adjusted life year. Yet the case for investment is unambiguous. Our modelling shows that a comprehensive scaleup of treatment, imaging, and quality of care could raise 5-year net survival across the Commonwealth from 30·7% to 52·9%, averting an estimated 5·8 million deaths and adding 113 million life-years between 2025 and 2035, at an incremental cost of $36·7 billion, delivering a return of between four and twenty dollars on every dollar invested. Crucially, this investment need not depend chiefly on external aid, which is contracting sharply at present. Our modelling for 38 low-income and middle-income Commonwealth countries suggests that up to $701 billion in additional domestic fiscal space could be mobilised between 2025 and 2030, through budget reprioritisation, macroeconomic growth, targeted taxation, and prudent borrowing. On this evidence, the Commission proposes six priority actions. These commitments are ambitious, set against an unusually turbulent geopolitical backdrop of declining official development assistance, fiscal retrenchment, and contested multilateralism. Yet it is precisely this backdrop that gives the Commonwealth its distinctive advantage: a voluntary association spanning every income level and continent, bound by common legal and regulatory traditions, capable of collective action that neither purely bilateral aid nor multilateral institutions under strain can easily replicate.

Section 1: The challenge of cancer in the Commonwealth

Cancer is a major cause of death and a leading cause of morbidity worldwide. In 2022, there were an estimated 19·8 million new cases of cancer in the world, and 9·7 million deaths.[1] The number of new cancer cases is projected to reach 35 million by 2050, increasing by 77% from 2022.[2] The burden of cancer, as measured by disability-adjusted life years (DALYs), has increased globally by 53·4% from 1990 to 2023, by 159·2% in lower-middle-income countries and by 147·8% in low-income countries (LICs).[3] Cancer is also major source of suffering, that actively compromises a person's physical, social, spiritual, and emotional functioning.[4] For comparison, non-communicable diseases (NCDs) other than cancer caused 34·0 million (50%) of 67·9 million total deaths in 2021.[5]

Globally, most countries have struggled to respond effectively to the rising burden of cancer, especially in low-income and middle-income countries (LMICs), which account for the greatest share of the cancer burden, under invest in cancer control, have wide inequalities in access to diagnostics, vaccines, therapies, and services for cancer, and have huge disparities in cancer outcomes.[6] In LICs, almost 50% of cancer cases are missed or never diagnosed.[7]

Highly cost-effective evidence-informed interventions for cancer control exist but are not widely scaled in most countries.[8–10] The global survey on universal health coverage (UHC) and cancer revealed that in 2022 just 45 countries, 39% of the 115 participating countries, included 20 cancer-care services recommended by WHO that could potentially be covered in the publicly funded health benefits packages for all citizens, and only 32 countries (28%) additionally covered care for people who require palliative care.[11] Yet, worldwide, comprehensive scale-up of cancer control, with high-quality cancer services, imaging diagnostics, surgery,

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chemotherapy, nuclear medicine, and radiotherapy could produce an estimated 130 million life-years saved with US$2 trillion in economic benefits over a 10-year period (2020–30), leading to net returns of $12 for every $1 invested.[12,13]

In the 56 Commonwealth countries (figure 1), the burden of cancer is increasing rapidly due to demographic shifts, with fast-growing populations in some countries, such as Nigeria, India, and Pakistan, and increasingly ageing population in others, such as Australia, Canada, and the UK.

Increasing population means higher numbers of cancer cases, and ageing brings epidemiological transition with growth of NCDs and cancer. Between 2008 and 2018, the number of cancer cases in the 56 Commonwealth countries rose by 35% and recorded cancer deaths reached almost 1·7 million in 2018.[14]

Recognising the rapidly rising burden of cancer and the risks it poses to health, the economy, and financial security of member countries, the Commonwealth Secretariat initiated a coordinated response to improve cancer care and control. In 2022, leaders at the Commonwealth Heads of Government Meeting in Rwanda committed to advancing cervical cancer elimination in the Commonwealth.[15] This commitment was followed by the creation of a voluntary information and price sharing database[16] to improve procurement, availability, and pricing transparency of cervical cancer health products and vaccines to address disparities in access and affordability in member states, which was recognised as a major challenge.

In 2024, the Outcome Statement of the 36th Commonwealth Health Ministers meeting in Geneva, Switzerland, noted that well financed, functional, and well governed health systems are fundamental to ensuring equitable and timely access to high quality and affordable health services, diagnostics, medicines, medical devices, and vaccines, which enable health system resilience.[17] In October 2024, at the Commonwealth Heads of Government Meeting in Samoa, the leaders reiterated their dedication to eliminating all forms of cancer.[18]

These commitments come at a time when the world faces multiple interdependent and complex transitions and geopolitical shifts for Commonwealth countries. Against this backdrop, the *Lancet Oncology* Commission on Cancer in the Commonwealth (appendix pp 4–7) was conceived with the Commonwealth Secretariat to explore how member states could effectively respond to these challenges related to rising cancer burden and harness opportunities to improve health, economies, and resilience of the Commonwealth countries.

The Commission involved 80 researchers, clinicians, policy makers, and civil society members across the Commonwealth, consisting of 31 commissioners, a core research team of ten, and an extended interdisciplinary group of collaborating researchers. It established ten research streams and five working groups to examine challenges posed by the evolving geopolitical context and the rising cancer burden and to identify potential solutions to address these challenges.

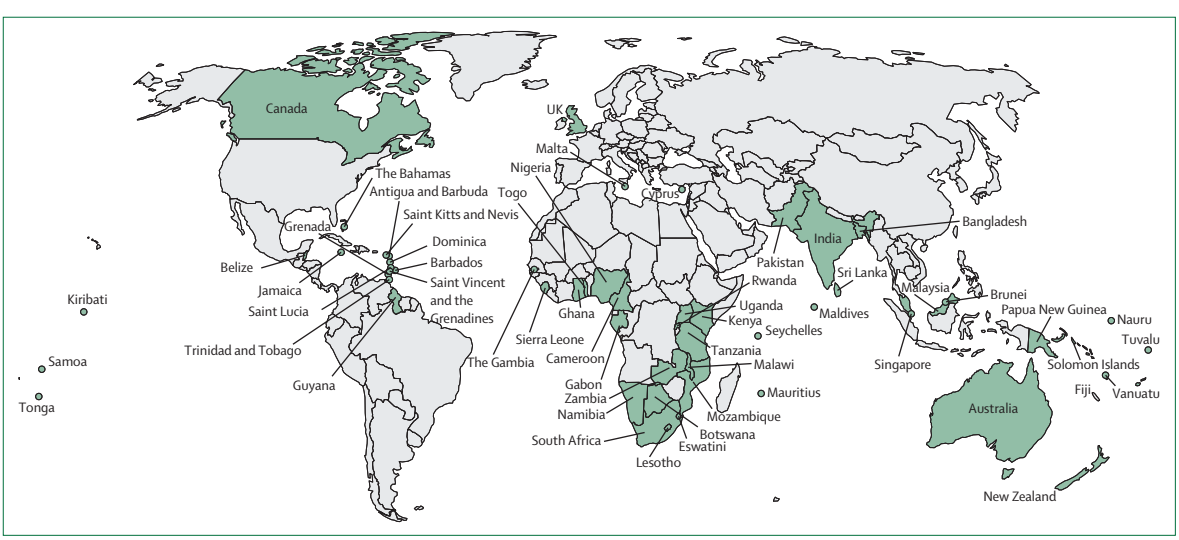


Figure 1: **Map of the world and the Commonwealth Countries**
The Commonwealth includes 56 independent and diverse countries in Africa, the Americas, Asia, Europe, and the Pacific, with a shared history that binds these nations together. A modern-day association of sovereign states, with shared goals, common legal and regulatory frameworks, a shared language and political ties, they include high-income countries, such as New Zealand, upper-middle-income, such as South Africa, lower-middle-income, such as India and Nigeria, and low-income, such as Malawi. The Commonwealth includes 33 of the world's 42 small states that have a population of 1·5 million or less, such as, Barbados, Botswana, and Brunei, as well some of the countries with the largest land mass, such as Australia and Canada, and largest populations, such as Bangladesh, India, Nigeria, and Pakistan. The Commonwealth comprises 2·7 billion people with unmatched diversity and cultural richness, who speak more than 2000 languages, follow nearly all world religions, and practice many traditions.

The Commission worked closely with the Commonwealth Secretariat and Commonwealth countries (including interviews of focal persons for health and senior officials at the Secretariat). A 2-day meeting in London, UK (March 17–18, 2025), at the Commonwealth Secretariat involved participation of a broad group of stakeholders, such as civil society and professional associations, in a roundtable discussion with the leadership and members of the Commonwealth Advisory Committee on Health. Commission members also participated at the Commonwealth Ministers of Health meetings in May, 2024, and May, 2025, and the Commonwealth Health Forum at WHO in Geneva, Switzerland, in May, 2026. The Commission used a health-systems framework[19] (appendix pp 9–10), that is based on a context–function–output–outcome architecture as a logic chain and theory of change, to guide its analysis and proposed actions (appendix pp 11–17). The Commission set out its approach in the 2024 Roadmap paper,[20] where the movement from health-system diagnosis to multifunctional intervention was presented.

This Commission is organised into 15 sections. This introduction (Section 1) is followed by an analysis of evolving geopolitical and economic context in Section 2. Section 3 focus on the Commonwealth advantage and strategic opportunity in the rapidly changing geopolitical and global health climate. A detailed analysis of Commonwealth country responses to the rising burden of cancer follows in Section 4, including changing incidence, national cancer control plans, and health expenditure on cancer and resources to deliver cancer services. Section 5 presents health benefits of scaling cancer control interventions on simulated 5-year net survival in Commonwealth countries. Section 6 includes a new analysis of cost of scaling cancer control interventions with estimated health and economic benefits and projected returns on investment. Section 7 provides estimates of direct and spillover effects of investments in cancer control in adjacent economic sectors and the induced effects of these investments on gross value added (GVA) to the economies of Commonwealth countries. This is followed by an introduction to the six priority areas for investment starting with targeted policies to improve access to affordable, high-quality cancer technologies (Section 8), transforming care delivery (Section 9), innovation (Section 10), patient and public engagement, (Section 11), education and professional development (Section 12), and robust data systems and comprehensive national cancer control plans (Section 13). Section 14 quantifies fiscal space that could be generated under different scenarios to fund these priorities, and finally, Section 15 presents the actions arising from these priorities, with potential roles at country, Commonwealth-wide, and Commonwealth Secretariat levels to catalyse their implementation.

Section 2: Evolving context—challenges and opportunities

Cancer incidence, policies, interventions, and outcomes are shaped by determinants outside the health sector, such as education, housing, employment, food systems, and tobacco and alcohol taxation, as well as broader demographic, political, legal, economic, sociocultural and technological factors, which we explore in this Commission. These factors also influence global health landscape.

The global health landscape is undergoing profound disruption due to a rapidly changing global order, driven by seismic geopolitical realignments. Although change was anticipated, the speed, scale, and depth of transformation was unexpected. The withdrawal of the USA from WHO in 2025[21] has changed the nature of international health financing and multilateral engagement at this crucial time, whereas China's rise as a dominant development partner—providing extensive loans, infrastructure projects, and official development assistance for health—is redefining global health dynamics. With many nations, particularly small and vulnerable states, caught between competing geopolitical pressures,[22] the new geopolitical context provides a unique opportunity for the Commonwealth to take leadership in driving health promotion and cancer control, with careful navigation of the new geopolitical landscape, to maintain strategic neutrality while leveraging opportunities for collaboration and building new alliances.

In this rapidly changing global landscape, fiscal retrenchment by major donors and funding fragility create further uncertainty and exacerbate vulnerabilities. Official Development Assistance from the UK is declining sharply from 0·7% of gross domestic product (GDP), as was the case during the Millenium Development Goal era in 2000–15, to a projected 0·15% of GDP, with similar declines in funding by France and other traditional funders.[23] The consequences are stark: crucial funding gaps in cancer control and NCD care are widening, as resources increasingly prioritise infectious diseases, such as HIV and tuberculosis, and maternal health. Many Commonwealth nations—LICs that are highly dependent on Official Development Assistance and facing high out-of-pocket health expenditures—are particularly at risk of funding shortfalls in their health budgets.

Contestation of major institutions in global health, democratic backsliding, and rising and diverse citizen demands, as well as geopolitical pressures, are creating governance challenges. Political instability and conflict are rising across the Commonwealth and beyond, with increasing fragility and the prioritisation of security and defence. Some member states face imminent threats of sharp economic slowdowns or regional spillover crises.[24] As national security concerns intensify, defence budgets are expanding at the expense of health, education, and

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See **Online** for appendix

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social sectors. This reallocation further restricts already limited fiscal space for public health investment, particularly for cancer control.

Changing demographic and epidemiological composition is adding to these challenges. So-called youthful societies with rapid population growth and ageing societies are experiencing a rising cancer burden that need to be addressed effectively and equitably. These major transitions at global and country level are creating pressures for health-system performance in relation to cancer control.

Recognising these geopolitical headwinds, in the Strategic Plan for 2025–30, the Commonwealth Secretariat identified three priorities—democratic, economic, and environmental resilience—underpinned by core values, including youth empowerment, gender equality, and support for small and vulnerable states.[25] Although the Strategic Plan recognises health as a complex challenge that needs tackling through strategic partnerships, and that achievement of environmental resilience will need to address the environment–health nexus, which undoubtedly underpins democratic and economic resilience, a lack of specific commitment for cancer risks hampering a coordinated response to cancer in the Commonwealth.

Section 3: Commonwealth advantage and strategic opportunity

At a time when the geopolitical landscape is rapidly shifting—with traditional donors retreating, multilateral institutions under strain, and global health funding becoming more fragmented—the Commonwealth offers stability, solidarity, and scalability. The Commonwealth can serve as an internal engine for equitable reform and an external voice for inclusive, innovation-driven global health leadership. The Commonwealth's enduring platform for multilateral engagement can serve as a stabilising force and an engine for collective action.

The Commonwealth's diverse membership, which includes small island developing states (SIDS), low-income member states, middle-income member states, and high-income member states, allows it to advocate credibly for equity-first solutions on the global stage. The Commonwealth's inclusive platform challenges the traditional donor–recipient dynamic by focusing on shared solutions rather than vertical aid flows. As global health realigns in a post-aid era, this approach is both ethical and strategic.

Geopolitically, the Commonwealth can serve as a balancing actor between major powers. In a world of rising multipolarity and fractured multilateralism, many countries—particularly in Africa, Asia, and the Pacific—face growing pressure to align with major powers. The Commonwealth includes many so-called middle powers, such as Australia, Canada, India, and South Africa, that have an important role in shaping the changing global geopolitical landscape. The Commonwealth offers a third way: a collaborative, non-aligned platform grounded in common values, mutual benefit, and pragmatic implementation.

Cancer is often viewed as a rich country problem, yet most new cancer cases now occur in LMICs, where late diagnosis, inadequate treatment capacity, and unaffordable therapies create a perfect storm of preventable mortality and economic strain. Importantly, cancer control must be seen not only through a health lens, but also as a driver of fiscal discipline, social equity, and development resilience. Addressing cancer strengthens national productivity, supports gender and youth outcomes, and enhances household economic stability—key priorities for many Commonwealth governments.

	Diversity	Commonalities
Geography	Small island states to continental size countries, such as Australia, Canada, and India	Global distribution; large maritime presence in every ocean with island states or substantial coastlines
Demography	Population size ranges from 9490 in Tuvalu to 1·46 billion in India;[26] varied population age structure	Many countries with rapidly growing young populations and a handful of countries with ageing populations
Economy	All country income groups from some of the poorest (Mozambique at US$570 gross national income per capita)[27] to the richest (Singapore at $81 760). Commonwealth economies range from about US$57 million (Tuvalu) to US$4·0 trillion (UK) in US$ at current US$;[28] wide variation in household income	Shared common law and legal systems, public administration models, and business practices that reduce friction for trade
Ecology	Multiple climate forms, ranging from vast arid deserts, tropical rainforests, mountainous regions in Lesotho, and island ecosystems	Climate vulnerability and natural disasters
Governance	Republics, Commonwealth realms, and national monarchies	Parliamentary system; recognition of monarchical head of Commonwealth
Legal	Mixed legal systems combining common law, civil law, religious and constitutional law; varied judicial independence	Legal systems based on common law; shared legal heritage due to historical links to the British Empire
Cultural	Rich tapestry of traditions, blending Indigenous customs, and African, Asian, Caribbean, Oceania, and European cultures	Shared values through the Commonwealth Charter with commitment to democracy, human rights, the rule of law, good governance, and environmental sustainability

Table 1: **Commonwealth diversity and commonalities that provide strategic advantage for cancer control**

The Commonwealth is uniquely positioned to lead a bold, collective response to address the growing cancer burden. Unlike other international networks, it brings together 56 countries as a voluntary association across all income levels with shared linguistic, legal, and regulatory traditions. These shared systems—rooted in common law and parliamentary governance—form a strong foundation for policy harmonisation, mutual recognition, and joint action in cancer control (table 1), and offer the opportunity for stability, solidarity, and scalability.

The Commonwealth can also play a strategic convening role—to catalyse financing innovations, cross-country manufacturing partnerships, and coordination across countries to standardise health technology assessments, facilitate clinical guideline alignment, and support the uptake of transparency and pricing tools. These shared instruments increase efficiency, reduce duplication, and ensure that countries can do more with less, particularly in resource-constrained environments.

Furthermore, the Commonwealth offers a pre-wired network effect. From academic consortia and professional societies to regulators, its institutional architecture can be harnessed to support innovation, workforce training, and operational learning, with legitimacy and ability to scale quickly within its existing ecosystem.

The Commonwealth's capacity for collective action on cancer is real. The 2022 commitment to cervical cancer elimination[15] and the subsequent Voluntary Information and Price Sharing Database[16] were enabled by the Commonwealth's shared regulatory traditions, professional networks, and the Secretariat's convening authority. Yet both instruments remain voluntary and non-binding, with participation of a subset of member states. The translation of this capacity to scale will depend on leadership while addressing uneven country resources and capabilities.

In the new geopolitical context, the Commonwealth has a unique opportunity to promote collective aspirations underpinned by a renewed ethos as enshrined in its charter to advocate for new global instruments to address health-financing gaps, enhance access and affordability, ensure equity for indigenous and underserved populations, and harness economic potential of investing in cancer control.

Section 4: Commonwealth country responses to cancer

Commonwealth countries face major challenges in implementing effective cancer control to address the rising burden of cancer in an uncertain geopolitical context. We analysed how well countries are responding to these challenges. Using a health-systems framework,[19] we examined contextual shifts in demographics and epidemiology to estimate current and future incidence of cancer in the Commonwealth. We analysed performance for cancer control in relation to health-system functions (organisation and governance, financing, and resource management), health-system outputs (public health services and individual health services), and health-system outcomes (cancer survival and mortality; appendix pp 9–10).

Our definition of cancer control considers health-system actions, including public health and individual health-service interventions across the care continuum, aimed at reducing the incidence, morbidity, suffering, and mortality for cancer and improving survival and wellbeing of individuals with cancer. For cancer control continuum, we consider management of risk factors, screening, prevention, early detection, diagnosis, all forms of treatment, survivorship, support, and palliative and end of life care.[20]

Cancer Incidence in the Commonwealth

For the Commission, we adapted a previously developed microsimulation model of global cancer outcomes for 11 common adult cancer sites[29] (oesophagus [C15], stomach [C16], colon [C18], rectum [C19 and C20], anus [C21], liver [C22], pancreas [C25], lung [C33 and C34], breast [C50], cervix uteri [C53], and prostate [C61]) to simulate the first incidence and 5-year net survival projections for Commonwealth countries. The detailed methods for the original model and its adaptation for the Commonwealth countries are described in detail in earlier publications[29,30] and briefly here.

This novel structural model uses Bayesian hierarchical modelling with country-specific population projections, estimated data on baseline cancer incidence from GLOBOCAN, new empirical data on the stage at diagnosis for each cancer, survival data from the Surveillance, Epidemiology, and End Results (SEER) programme in the USA, and estimated survival for each treatment and imaging modality modelled by cancer and stage informed by expert opinion based on relevant local guidelines.[29,30] We used the model to simulate 5-year net survival for each patient, accounting for the stage at diagnosis (I–IV), availability of specific treatment and imaging modalities, and quality of care (based on residual differences in expected *vs* observed survival after accounting for the availability and effectiveness of treatment and imaging modalities). We also simulated counterfactual policy scenarios, in which we scaled up various aspects of cancer care to the mean level of HICs to estimate the comparative effectiveness of different policies.[29,30]

We note the limitations of the model as it relies on the SEER data for survival, estimated survival for each treatment and imaging modality by cancer and stage based on expert opinions, and inability to disaggregate incidence and net survival estimates by population subgroups due to lack of country-level data.

In 2020, there were an estimated 1 610 000 new adult cancer cases in the Commonwealth countries

(95% uncertainty interval [UI] 1 556 000–1 674 000), accounting for an estimated 14·3% of the 11 227 000 global diagnosed cancer cases [11 069 000–11 406 000] among the 11 most common adult cancers in the world.[29] Of these, 265 650 (16·5%) were Stage I (189 980–375 130; 11·8–23·1%), 478 170 (29·7%) were Stage II (376 740–586 040; 23·4–36·4%), 489 440 (30·4%) were Stage III (404 110–616 630; 25·1–38·3%), and 376 740 (23·4%) were Stage IV (299 460–487 830; 18·6–30·3%). The proportion of new cancer cases presenting at Stage III and IV were 42·6% in HICs, and 61·9% in LICs.[29]

Similarly, the modelling showed substantial variation of incidence by geography. The proportion of late-stage (III–IV) cancers ranged from 61% in Africa to 56% in Asia, and less than 50% in the Caribbean and the Americas, Europe, and the Pacific Commonwealth countries.[29]

The simulation estimates suggest that, for the 11 most common adult cancers, the number of cancer cases in the Commonwealth is projected to increase to reach an estimated 3 330 000 cases (3 154 000–3 539 000) in 2050 (appendix p 18), accounting for 17·3% of the total number of projected cancer cases in the world.[29] As noted earlier, this projection compares with an estimated 19·8 million new cases of cancer in the world in 2022, projected to reach 35 million by 2050.

Governance and organisation

Few data exist on governance or implementation of cancer control in the Commonwealth countries for a meaningful analysis. Therefore, to examine governance we used national cancer control plans (NCCPs) to examine approaches planned by each country where NCCPs exist. NCCPs are policy instruments designed to establish appropriate governance, resource allocation mechanisms, and clear objectives for effective cancer control.

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We identified the most recent official NCCP for each country by searching three sources: the International Cancer Control Partnership (ICCP) repository, the WHO Noncommunicable Disease Document Repository,[31] and government websites. We included cancer-specific national plans in any language but excluded sub-national plans, broader NCD plans, universal health coverage (UHC) plans, health-system strategies, draft documents, and superseded versions of NCCPs. For the 56 Commonwealth countries, 23 (41%) had NCCPs that met these criteria, but 33 (59%) did not, whereas 23 (70%) of the 33 countries without an NCCP had a national plan for NCDs. These Commonwealth countries, which included four SIDS, are listed in the appendix (pp 19–20).

There is no unform standard for NCCPs, therefore, we adapted a framework that was used for analysing European NCCPs to define the content of a comprehensive NCCP suitable for implementation and scale-up[32] by aligning it with WHO,[33] the ICCP, and the Union for International Cancer Control (UICC) guidance[34] to ensure consistency with global frameworks and recommendations. We validated the initial analytical framework and extended it further using a modified two-stage Delphi process[35] by engaging selected experts (n=67) in clinical medicine, oncology and surgery, health policy, public health, and health systems involved in cancer control and NCCP development. The Delphi exercises led to the further development and refinement of the framework to include 12 elements and 76 sub-elements. Using this new framework, we developed a novel artificial intelligence (AI)-based Policy Reasoning Integrated Sequential Model (PRISM) using large language models (LLMs) and agentic AI, using human-in-the-loop in every stage of the model and algorithm development to examine the comprehensiveness of the NCCPs. The PRISM model has since been adapted to examine national cardiovascular and NCD plans and health policies. We provide details of the development of the PRISM model in the appendix (pp 21–26), along with the framework for analysis (appendix pp 27–32).

The results reveal a median overall comprehensiveness score of 1·5 of 5 across all plans, indicating very low completeness (appendix pp 33–36). Nine of the 12 elements scored below 2·0, with the financing element showing the lowest score for comprehensiveness (0·82). Elements designed to assess performance in relation to cancer control were consistently underspecified without meaningful targets, metrics, and time scales for achieving results with NCCP implementation (outcomes 1·25; objectives 1·25; outputs 1·75). There was also a low level of contextual analysis to assess the emerging opportunities for cancer control brought by a changing context in countries (1·0) or the anticipated threats to cancer control due to shifts in context (0·88). Similarly, NCCPs did not provide meaningful indications on resource planning and resources needed for cancer control (resource management 1·64) or how the NCCPs would be funded (financing 0·82) or implemented (implementation 1·0). Most NCCPs did not clearly articulate who would be responsible for implementation and for the achievement of results, or how an inclusive governance process would be established by including patients, civil society and patient organisations, vulnerable individuals, and indigenous populations in countries with such populations (governance 2·17). The NCCPs listed services that would be supported but often lacked specification on what would be new and how the additional services would be resourced (health services 2·14). It is important to note, however, that the analysis does not extend to broader country capabilities or other policy instruments (such as health insurance) that might help with the implementation of NCCPs.

Analysis of comprehensiveness scores by World Bank country income group and WHO world regions is presented in the appendix (pp 33–36).

Detailed country level analyses of NCCPs by element and sub-element are presented at the Commonwealth Data Observatory and Visualiser for Health Systems and Cancer Control with a functional tool that enables countries to analyse their NCCPs and cardiovascular disease plans. An agentic AI tool will be launched with this Commission that will enable countries to rapidly generate new national cancer control plans or cardiovascular disease plans, with an opportunity for including human-in-the-loop, and benchmark these with peers, taking into account current and projected demographics (eg, population characteristics, and indigenous and minoritised populations), geography, cancer incidence, economic growth, levels of technology adoption, level of digitisation, sociocultural attitudes, health-system performance over time and relative to peer countries (for cancer control and generally), health-system financing, health expenditures for cancer, research and development intensity, and human resource and infrastructure availability for cancer, among others. The tool will continue to be updated in the future for generating context specific policies and plans for other conditions.

These findings indicate major gaps in plans to advance cancer control in the Commonwealth. Although many of the NCCPs analysed describe what to deliver and how to organise services, they provide few details on how programmes will be financed or how performance will be measured. Few plans quantify current cancer expenditure, set out mechanisms for pooling funds, indicate changes to provider-payment methods, explain capital planning investments, or specify who will provide financial oversight. Outcome frameworks rarely specify indicators, baselines, or review timelines for the targets to be achieved. Without financing details and performance metrics, these plans cannot be implemented effectively or held accountable for results.

Member countries could use Commonwealth-wide data systems and the PRISM tool to develop comprehensive and data-driven NCCPs, considering contextual and health-system characteristics, and innovation ecosystems, as well as the available resources and capacity for implementing the plan.

For more on the **Commonwealth Visualiser for Health Systems and Cancer Control** see https://hsilcommonwealthvisualizer.com/

For more on the **Harvard Health Systems Innovation Lab agentic AI tool** see https://hsilcommonwealthvisualizer.com/P.AI/

Health expenditures for cancer control in the Commonwealth

Analysis of level of funding for cancer control is essential to ascertain if funding is adequate, and whether its allocated effectively, efficiently, and



Figure 2: **Per capita expenditure on cancer control versus cancer incidence rate**
Gray dashed lines represent the median value across countries.

equitably to inform planning. To quantify financing for cancer in the Commonwealth, we examined expenditures on cancer control in the 56 Commonwealth countries and assessed how expenditure varies with cancer incidence, across country-level World Bank income groups, and by SIDS status as defined by the UN.

For more on the **UN list of SIDS** see https://www.un.org/ohrlls/content/list-sids

We collected expenditure data on cancer control from national health accounts (NHAs). When NHAs were not available, we used expenditure data for cancer control from the gray literature (ie, government-led or commissioned reports) and peer-reviewed publications. All data were pulled from publicly available documents.

We fit a regression model and predicted per capita expenditures for countries with missing data (n=18). The model included covariates for GDP per capita and cancer incidence rate (per 100 000 people). The model details are provided in the appendix (pp 37–39).

All expenditure values represent recurrent expenditures, covering all public and private spending, which regularly occur to maintain and improve individual and community health.

Figure 2 presents observed and predicted expenditures (with 95% uncertainty intervals) on cancer control by country plotted against cancer incidence. Countries in the bottom-right quadrant are those with below average

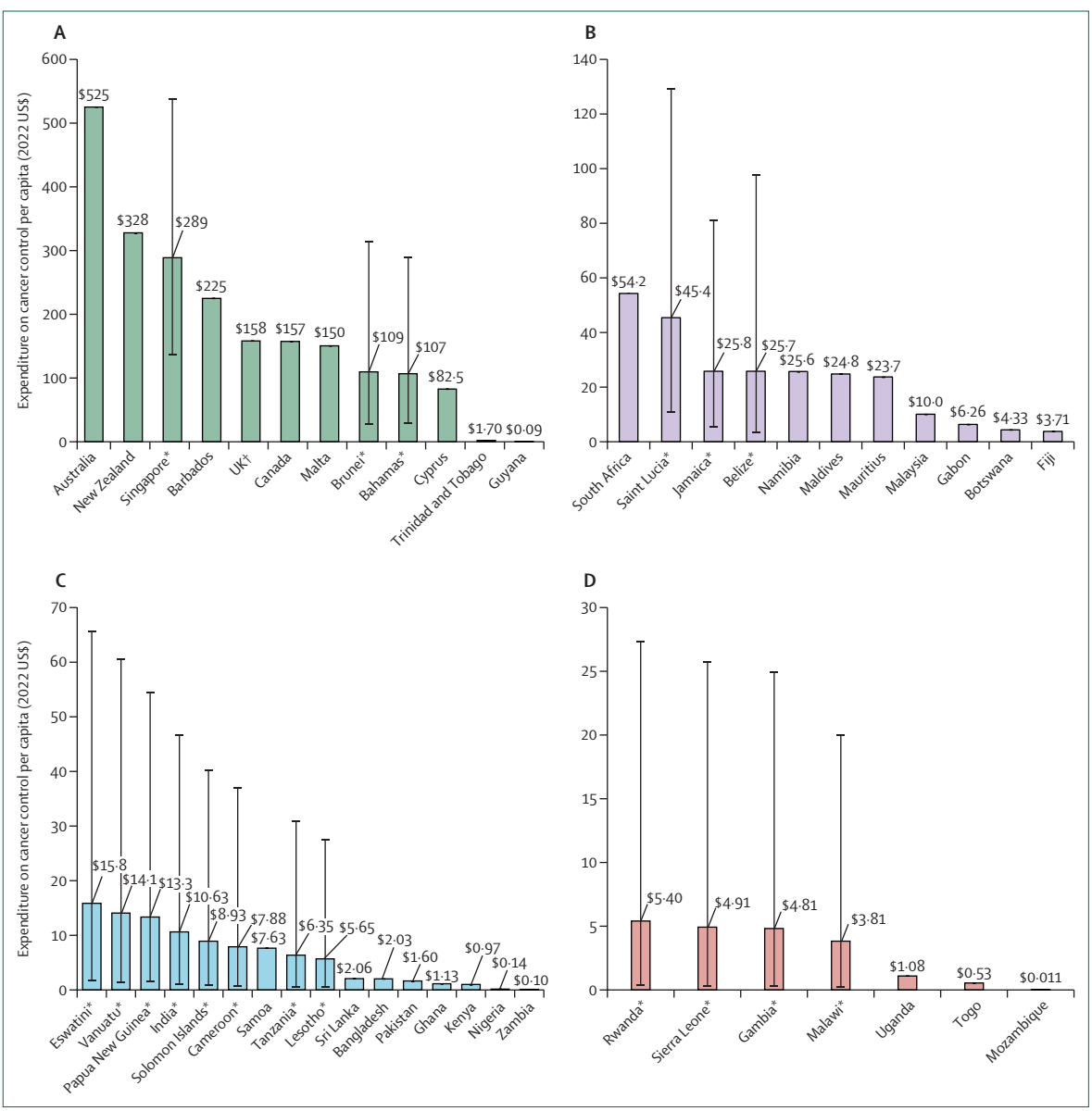


Figure 3: **Health expenditure on cancer control per capita (2022 US$) by World Bank income group: high-income countries (A), upper-middle-income countries (B), lower-middle-income countries (C), and low-income countries (D)**

*Predicted.

expenditure on cancer control and higher-than-average cancer incidence among Commonwealth countries. Countries in the upper-left quadrant have below average cancer incidence rates and above average per capita expenditure on cancer control. Countries in the bottom-right quadrant have above average cancer incidence rates and below average per capita expenditure on cancer control. Countries in the upper-right quadrant are those with above-average cancer incidence and expenditure on cancer control.

Observed and predicted per capita expenditure on cancer control cancer control (with 95% UI included) are presented in figure 3.

Analysis revealed a stark lack of available data, with expenditure data available for only 28 (50%) of 56 Commonwealth countries. For countries with available data, per capita expenditure on cancer control was on average US$64·2 (n=28; standard deviation [SD] $122), and by World Bank income group, $181 (n=9; SD $165) among HICs, $19·1 (n=8, SD $17·0) among upper-middle-income countries (UMICs), $1·96 (n=8; SD $2·41) among LMICs, and $0·54 (n=3; SD $0·53) among LICs. Average per capita expenditure on cancer control for non-SIDS was $71·9 (n=21; SD $134) and for SIDS was $40·9 (n=7; SD $81·7). Predicted expenditure on cancer control per capita ranged from $289 (95% UI $135–539) in Singapore to $3·81 ($0·19–20·0) in Malawi. There was major variation in health expenditures for cancer among countries in same country-income groups and similar incidence.

We present country level data in the Commonwealth Observatory for Health Systems and Cancer Control. Although our model provides reasonable estimates of expenditure on cancer control, factors beyond our currently included predictors (GDP per capita and cancer incidence) might influence expenditure on cancer control. Predicted values also cluster more narrowly than observed values, which reflects the model's tendency toward mean prediction without inclusion of country-specific factors. The UIs we provide account for uncertainty in our estimates but cannot fully capture the potential country-specific deviations that might exist due to unmeasured variables. Country-specific factors (such as the visibility of cancer as a national challenge, political commitment, and budgeting, among other prioritisation processes for financial allocations) likely influence real-world expenditures, some of which cannot be measured using routinely available national health expenditure data. Greater understanding of these factors will be important for understanding country spending behaviour, and the observed variations between countries with otherwise similar cancer burden or economic conditions.

Resource management

Specialised infrastructure and services are needed to directly deliver services across the cancer control continuum. However, there are major gaps in surgery,[36,37] pathology and laboratory services,[38] diagnostic imaging and nuclear medicine, radiotherapy, systemic therapies, and palliative care, with adverse consequences for health outcomes.[6–10]

For example, in the Pacific, although infrastructure for radiotherapy is available for 12 million individuals, not all are functional,[39] and two-thirds of the population in Africa live more than 2 h from a radiotherapy centre.[40] Systematic data on the availability of cancer-related infrastructure in the Commonwealth are lacking.

We applied a health-systems framework to examine availability of five infrastructure elements for cancer control across the 56 Commonwealth countries, benchmarked against international targets: diagnostic imaging (mammography and CT), treatment (radiotherapy and surgery), and provider facilities (hospitals).

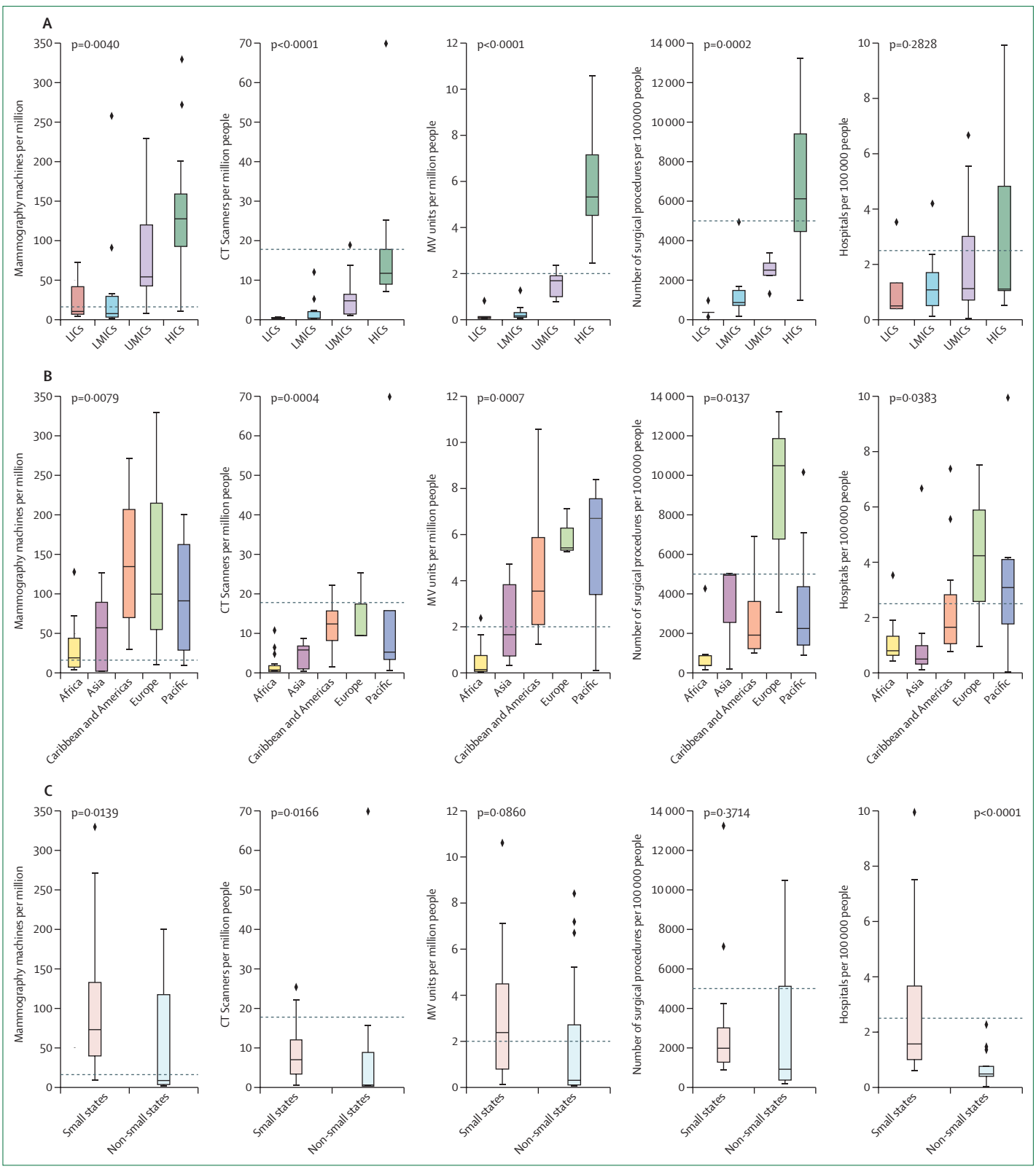
One validated indicator per element was selected based on data quality criteria. The primary endpoint was the availability of infrastructure benchmarked against international targets. Secondary endpoints included infrastructure variation by income group, region, and state size; availability relative to national income and health spending; and correlation with cancer outcomes. Data were sourced from WHO, World Bank Group, Organisation for Economic Co-operation and Development, and The International Atomic Energy Agency (IAEA). The detailed methods for the study are provided elsewhere.[41]

Benchmarking revealed major gaps (figure 4). Just 12% of Commonwealth countries met the CT target, 23% met the surgical benchmark, 22% met the hospital density threshold, and 40% met the radiation oncology target (megavoltage units per million people). Mammography had the highest level of provision compared with target (76%). The most profound disparities were found in radiation oncology, with 62 times variation by country income group, 47 times variation by world region, and 8 times variation by state size. LICs in Africa and Asia had the most substantial deficits, with 13–46 times lower availability compared with benchmarks across the five infrastructure elements. In secondary analyses (appendix pp 40–44), infrastructure availability varied substantially by health-system economic context. Quadrant analysis identified countries outperforming or underperforming relative to income and spending.

Our analysis had limitations due to inadequacy of data available for assessing health-system infrastructure in terms of timeliness, consistency, and comprehensiveness, in particular absence of pathology and laboratory medicine data.

Research and knowledge generation

We analysed public and philanthropic research funding for cancer control (pre-clinical, phase I, II, and III clinical


A
Mammography machines per million
p=0·0040
CT Scanners per million people
p<0·0001
MV units per million people
p<0·0001
Number of surgical procedures per 100 000 people
p=0·0002
Hospitals per 100 000 people
p=0·2828
LICS
LMICS
UMICS
HICS
B
Mammography machines per million
p=0·0079
CT Scanners per million people
p=0·0004
MV units per million people
p=0·0007
Number of surgical procedures per 100 000 people
p=0·0137
Hospitals per 100 000 people
p=0·0383
Africa
Asia
Caribbean and Americas
Europe
Pacific
C
Mammography machines per million
p=0·0139
CT Scanners per million people
p=0·0166
MV units per million people
p=0·0860
Number of surgical procedures per 100 000 people
p=0·3714
Hospitals per 100 000 people
p<0·0001
Small states
Non-small states

trials, and evaluative research) and the patterns of research collaboration and research networks for clinical trials, and outputs of these networks in terms of publications and intellectual property.

We conducted a comprehensive analysis on the amounts and distribution of public and philanthropic global human cancer research funding between 2016 to 2023, the patterns of international collaboration in funding, and the downstream research outputs, with a specific emphasis on the Commonwealth. The methods, approach to social network analysis and detailed results are presented elsewhere as background research for the Commission.[42]

We extracted data from the Digital Science Dimensions database and Cancer Research UK website. Awards were categorised by cancer type, cross-cutting theme, and research phase. Awards labelling used machine learning algorithms, large language models, and manual scrutiny from cancer experts. Social network analysis examined the position of Commonwealth countries in international collaboration in the four stages of cancer research ecosystem, ie, grant applications, publications, clinical trials, and patent inventions.

We identified 107 955 cancer research awards, with total investment of US$51·4 billion during 2016 to 2023 globally, with the Commonwealth collectively providing $8·7 billion (17·0%) of total funding. The leading contributors from the Commonwealth were the UK (just below $5·7 billion, 11·1%), Australia ($1·5 billion, 2·9%), and Canada ($1·3 billion, 2·5%); these countries were also the lead receivers of cancer funding as principal investigators, with the UK receiving $2·5 billion (4·9%), Australia $1·3 billion (2·5%), and Canada $0·9 billion (1·8%).

Overall, research investment per cancer-associated DALY was low in Commonwealth countries, which collectively contributed $165·0 per DALY. This investment contrasts with $1852·2 per DALY in the US.

Globally, there were 431 733 cancer related publications between 2016 to 2023. Institutions based in the USA were involved in 184 906 (42·8%) of these publications, followed by China (158 136 [36·6%]), and Japan (58 797 [13·6%]). Commonwealth countries contributed to 58 463 (13·5%) publications, with the UK (32 420 [7·5%]) being the highest-contributing country within the group. The Commonwealth did not emerge as a distinctive group in the publication analysis, with Commonwealth HICs forming part of the USA-centred cluster of research networks, and Commonwealth LICs being part of the Brazil, South Africa, and India grouping.

The positions of Commonwealth countries within the publication network roughly correlated with the positions in the research funding network. Ranking analysis showed the dominance of the UK, Australia, and Canada in both networks. When comparing involvement in funding activity between 2016 to 2020, before the COVID-19 pandemic and 2021–2023 periods, the UK and Australia's per activity-based positions markedly declined, reflecting weakened breadth of engagement with the rest of the world.

Social network analysis revealed that the global collaboration networks in cancer research are characterised by a core of strong links between HICs. There is also a periphery of LMICs, but these are very weakly linked to each other. This pattern also holds for Commonwealth countries. Network structure also reveals the consistent presence of US-centric, Europe-centric, and eastern-European-centric clustering of countries. There are low levels of intra-Commonwealth collaborations, particularly within middle-income and low-income groupings, restricting the capability for knowledge exchange and thus reinforcing health inequalities. The findings suggest that a core of Commonwealth HICs, including the UK, Australia, and Canada, has the potential to serve as a bridge connecting other Commonwealth research activities with worldwide leaders in cancer research, as they have strong links to the US and European research networks.

We also compared knowledge exchange between countries in cancer research and innovation. A prominent finding of this analysis is that in the Commonwealth, co-invention network for patents related to cancer involves fewer countries and is sparser (appendix p 45) compared with clinical trial and publication networks. Normalised patent co-invention network and normalised clinical trial co-involvement networks showing the positioning of Commonwealth countries are included in the appendix (p 45).

The findings indicate the need to review research investment priorities in the Commonwealth to align with population needs and promote collaboration strategies that can build research skills and infrastructure across Commonwealth countries.

Figure 4: **Infrastructure for cancer care by country income group (A), world region (B), and state size (C)**

The grey horizontal line represents the benchmark for each infrastructure indicator: established international targets for radiation oncology and surgery, and OECD median values for mammography, CT, and hospitals, for which established global targets were unavailable. Boxes indicate the IQR, centre lines indicate medians, whiskers indicate the range of non-outlying values, and diamonds indicate outliers (defined using the 1·5 × IQR rule). HICs=high-income countries. LICs=low-income countries. LMICs=low-middle-income countries. MV=megavoltage units per million population. UMIC=upper-middle-income countries.

Service delivery

Comprehensive data on the quality of cancer care in the Commonwealth are lacking, but few available studies indicate major challenges in relation to equity, affordability, and accessibility of high-quality services, especially in low-income and middle-income Commonwealth countries and Indigenous populations. There are also concerns with licensing and accreditation

of health-care institutions and health professions providing cancer control.

We conducted a scoping review and examined published literature to build a picture of suboptimal and substandard cancer care in the Commonwealth. The details of the study and methods are presented elsewhere.[43] The review included findings from 66 studies from 21 Commonwealth countries. It revealed widespread suboptimal cancer care characterised by delays in care (51%), poor access (18%), poor assessment (18%), and inadequate management (8%) of cancer. These deficiencies were linked to worsened outcomes for cancer, reduced treatment completion, and advanced disease at diagnosis. Rurality, low socioeconomic status, and deficient health-system infrastructure were associated with suboptimal outcomes. Other factors associated with suboptimal care included lack of access to appropriate specialty services, health human resources, and health infrastructure; delays in diagnosis or treatment and geographical disparities (such as long travel distances); and inability to provide care consistent with international standards.[43]

To reduce suboptimal care and its downstream adverse effects, it is important to develop context sensitive and culturally appropriate cancer services, which we further discuss in later sections. However, it is important to note that research and development spending in the Commonwealth for service delivery related research is very low and the majority of funding is directed to preclinical cancer research.[42]

The Commonwealth Secretariat should establish a dedicated Cancer Equity Taskforce to foster knowledge exchange, support capacity-building programmes in oncology workforce training, and promote stronger cross-national clinical research collaboration across the Commonwealth, building on existing networks. At the country level, priority should be given to early detection programmes, timely referral pathways, multidisciplinary tumour boards, and tele-oncology solutions for remote areas. National clinical audits should be used to systematically identify gaps and track progress longitudinally.

Cancer outcomes

In the Commonwealth, there is substantial variation across and within countries in terms of cancer outcomes, such as mortality and 5-year net survival. Using the microsimulation model of cancer outcomes for 11 common cancer sites for Commonwealth countries described earlier, we estimated 5-year net survival for these 11 cancers. Model outputs indicate that in Commonwealth countries in 2020, the estimated 5-year net survival across 11 cancers combined was 30·7% (95% UI 22·4–38·6). However, there was large variation by setting.[29]

5-year net survival estimates ranged from 4·1% (95% UI 0·04–15·2) in LICs to 59·0% (57·8–60·2) in HICs. Survival estimates were 17·8% (3·7–30·9) in LMICs and 33·1% (23·7–46·0) in UMICs.[29]

These survival estimates also varied by geographical area. 5-year net survival was 15·3% (95% UI 8·1–22·4) in Africa, 20·1% (5·4–35·8) in Asia, 62·4% (61·0–64·1) in the Caribbean and the Americas, 56·6% (55·2–58·3) in Europe, and 57·0% (50·1–61·9) in Pacific Commonwealth countries.[29]

There were an estimated 1 114 000 (95% UI 975 000–1 260 000) cancer deaths in the Commonwealth in 2020. Breast cancer (20·9%), lung cancer (16·8%), and cervical cancer (14·2%) accounted for more than half of cancer deaths among the 11 cancers modelled.[29]

	Baseline estimated survival (no intervention)	Traditional treatment	Traditional treatment and imaging	Traditional treatment and imaging and quality of care	Comprehensive strategy
Commonwealth total	30·7 (22·4–38·6)	41·3 (30·4–47·4)	44·0 (37·5–48·6)	47·2 (44·3–50·8)	52·9 (50·0–56·0)
Income group					
Low-income countries	4·1 (0·04–15·2)	13·7 (0·2–37·1)	19·5 (0·3–42·4)	37·5 (29·6–47·3)	45·3 (37·1–55·0)
Lower-middle-income countries	17·8 (3·7–30·9)	33·7 (15·3–43·0)	37·3 (27·0–44·5)	41·4 (36·7–46·9)	49·0 (44·3–53·9)
Upper-middle-income countries	33·1 (23·7–46·0)	42·3 (28·8–53·3)	46·7 (31·6–53·5)	49·0 (44·7–53·5)	56·1 (52·9–59·6)
High-income countries	59·0 (57·8–60·2)	59·4 (58·1–60·9)	59·4 (58·2–60·9)	59·5 (58·2–61·1)	61·1 (59·9–62·4)
Geographical region					
Africa	15·3 (8·1–22·4)	28·8 (12·5–42·9)	34·3 (12·9–47·1)	43·6 (38·3–49·5)	51·6 (46·2–57·9)
Asia	20·1 (5·4–35·8)	35·5 (17·2–47·3)	38·6 (25·2–47·3)	41·5 (36·7–47·8)	48·7 (43·9–53·5)
Caribbean and the Americas	62·4 (61·0–64·1)	62·5 (61·2–64·3)	62·5 (61·2–64·3)	62·6 (61·2–64·3)	64·0 (62·4–65·6)
Europe	56·6 (55·2–58·3)	56·9 (55·5–59·2)	56·9 (55·5–59·2)	57·1 (55·5–59·7)	58·5 (56·8–60·6)
Pacific	57·0 (50·1–61·9)	58·5 (52·0–64·3)	59·3 (52·9–64·7)	60·6 (55·7–65·4)	63·3 (59·9–66·6)

Data are mean 5-year net survival % estimates (95% uncertainty interval). Original table published in Ward et al.[29]

Table 2: **The effect of different scenarios of scale-up (treatment, treatment plus imaging modalities, treatment plus imaging modalities plus quality of care and comprehensive scale-up including targeted therapy and advanced imaging modalities) on 5-year net cancer survival in the Commonwealth, by country income group and geography**

We present modelled 5-year net survival figures for each cancer type (appendix pp 46–51), and 5-year net survival figures for each Commonwealth country by cancer type are available at the Commonwealth Observatory for Health Systems and Cancer Control.

The model has limitations as it cannot disaggregate 5-year net survival estimates by population subgroups and subcountry geographies due to lack of appropriate country-level data.

Section 5: Health benefits of investing in cancer control

Using an individual-level microsimulation model of cancer survival we modelled the health benefits of scaling treatment and imaging modalities across Commonwealth countries in terms of 5-year net survival and compared this with baseline 5-year net survival of 30·7% (95% UI 22·4–38·6) without scale-up.[29]

The model simulates survival for 11 cancer sites (C15, C16, C18, C19 and C20, C21, C22, C25, C33 and C34, C50, C53, and C61) using the number of incident (diagnosed) cancer cases in each country based on estimates from GLOBOCAN 2020 and models the individual-level cancer treatment cascade and survival outcome for each patient with cancer.[29]

We obtained country-specific population projections from the 2024 UN World Population Prospects.[26] We simulated incident cancer cases from 2025 to 2035. For simplicity, we assumed that cancer incidence rates would remain constant during this period but accounted for changes in population size and demographics. In each iteration, we sampled an incident number of cases in 2025 and scaled this number by the (sampled) projected population size. The number of diagnosed cases was sampled from the GLOBOCAN 2020 UIs for each cancer within a country independently. For each simulated patient with cancer, we then sampled their cancer stage and age at diagnosis from the estimated cancer-specific joint distribution. We obtained country-specific estimated lifetables (annual mortality rates) from the UN World Population Prospects 2024. Lifetables by age and calendar year were used to simulate competing mortality risks. Individuals with cancer were simulated until death (from any cause). Further details of the methods are presented in a 2024 article by Ward and colleagues.[29]

To estimate the impact of different scale-up policies on cancer survival, we simulated counterfactual policy scenarios (1000 simulations each), in which we increased the relevant parameter for each country to the mean estimated parameter among HICs globally (if higher than the baseline parameter value). We simulated the impact of progressively more comprehensive packages of scale-up, beginning with traditional treatment modalities (surgery, radiotherapy, and chemotherapy), then adding traditional imaging modalities (ultrasound and x-ray), quality of care, and a comprehensive scale-up of all treatment, imaging modalities, and quality of care.[29]

The survival impact of each treatment and imaging modality was modelled by cancer and stage, informed by expert opinion based on relevant guidelines. Previous probability distributions for the country-specific availability of treatment modalities were based

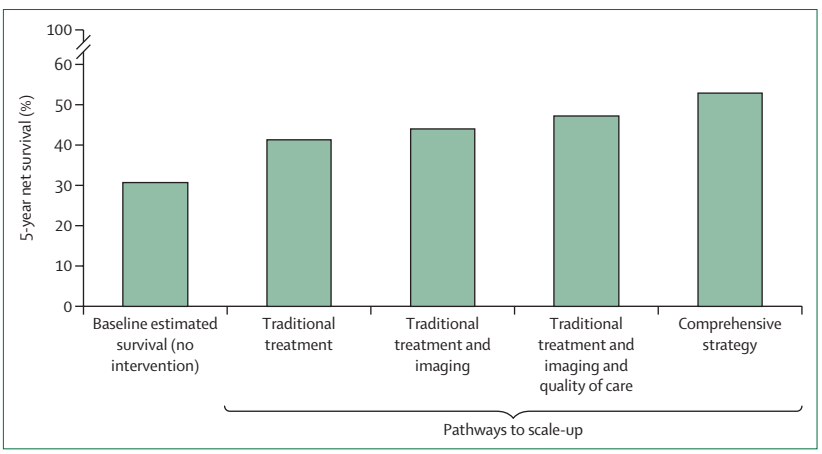


Figure 5: **The effect of different scenarios of scale-up (treatment, treatment plus imaging modalities, treatment plus imaging modalities plus quality of care, and comprehensive scale-up including targeted therapy and advanced imaging modalities) on 5-year net cancer survival in the Commonwealth**

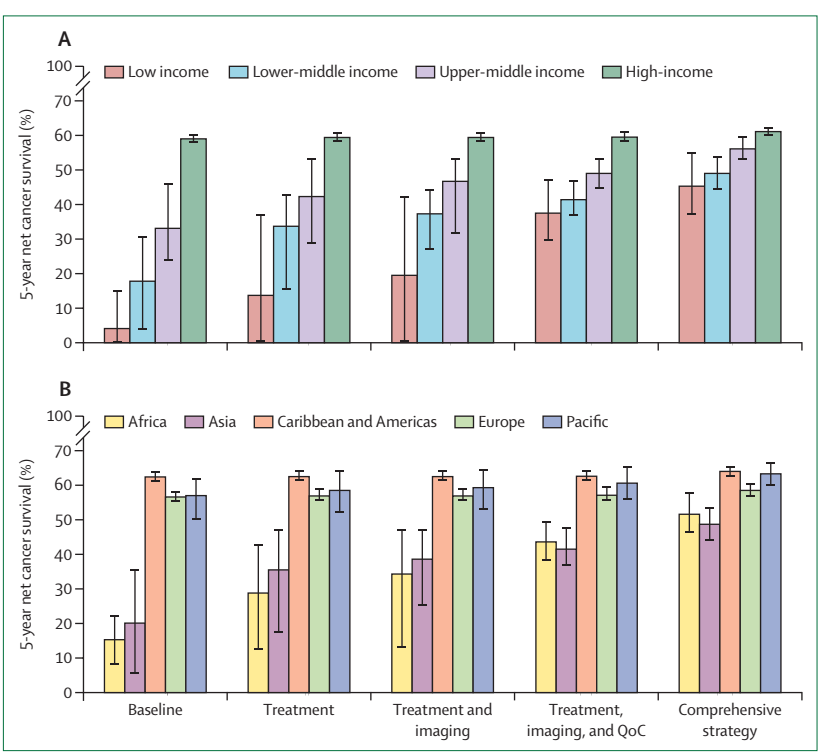


Figure 6: **The effect of different scenarios of scale-up (treatment, treatment plus imaging modalities, treatment plus imaging modalities plus quality of care, and comprehensive scale-up including targeted therapy and advanced imaging modalities) on 5-year net cancer survival in the Commonwealth by country income group (A) and by geography (B)**

Treatment refers to surgery, radiotherapy, and chemotherapy. The bars represent mean 5-year net survival, and the error bars represent 95% uncertainty intervals. QoC=quality of care.

on previously published estimates,[14–16] except for targeted therapy, for which general priors were set by income group due to the lack of data.[5] Availability of imaging modalities was informed by coverage estimates (equipment per million population) from the IAEA IMAGINE database. We included a quality-of-care parameter (defined as the extent to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge) to account for other health-system and facility-level factors that result in differences in survival outcomes not explained by stage at diagnosis or availability of treatment and imaging modalities.[29]

Four modelled scenarios included scale-up across the Commonwealth countries of: (scenario 1) Traditional treatment (chemotherapy, radiotherapy, and surgery); (scenario 2) Traditional treatment (chemotherapy, radiotherapy, and surgery) with low-cost imaging diagnostics (x-ray and ultrasound); (scenario 3) Traditional treatment (chemotherapy, radiotherapy, and surgery) with low-cost imaging diagnostics (x-ray and ultrasound) and quality of care; and (scenario 4) comprehensive strategy of scale-up that included Traditional treatment (chemotherapy, radiotherapy, and surgery) with targeted therapy, a broader range of imaging diagnostics (x-ray, ultrasound, CT, MRI, and PET) and quality-of-care.[29] These four scenarios are shown in Table 2, Figure 5 and

	Baseline (no intervention)	Treatment	Treatment and quality	Comprehensive
Commonwealth	16 295 400 (14 182 400–18 655 800)	13 571 100 (11 761 000–16 635 100)	12 800 000 (11 357 200–15 178 500)	10 489 000 (9 609 000–11 372 100)
Income group				
Low-income countries	847 800 (695 400–999 100)	753 800 (522 800–971 200)	643 000 (494 100–806 800)	449 900 (351 300–554 500)
Low-middle-income countries	11 803 700 (9 670 000–14 135 600)	9 395 700 (7 726 500–12 389 300)	8 780 300 (7 402 500–11 093 400)	6 944 300 (6 131 400–7 752 500)
Upper-middle-income countries	1 083 600 (868 500–1 269 600)	911 100 (717 500–1 142 900)	874 800 (709 600–1 107 500)	681 100 (621 700–752 300)
High-income countries	2 560 300 (2 441 400–2 684 900)	2 510 500 (2 358 000–2 645 500)	2 501 800 (2 336 800–2 639 400)	2 413 700 (2 296 000–2 529 100)
Geographical region				
Africa	3 911 800 (3 442 000–4 412 000)	3 240 000 (2 552 400–4 101 200)	2 909 000 (2 373 100–3 516 900)	2 101 300 (1 797 100–2 409 000)
Asia	9 732 800 (7 593 300–11 872 900)	7 747 800 (6 180 700–10 621 900)	7 327 700 (6 063 000–9 530 600)	5 949 100 (5 271 200–6 667 300)
Caribbean and the Americas	679 700 (624 400–743 400)	674 700 (620 200–740 200)	673 800 (615 800–739 200)	647 000 (590 200–706 100)
Europe	1 347 100 (1 260 300–1 430 400)	1 318 100 (1 219 400–1 409 600)	1 313 900 (1 206 700–1 407 100)	1 275 300 (1 189 100–1 355 900)
Pacific	624 000 (503 700–828 800)	590 600 (466 900–786 000)	575 600 (461 300–754 900)	516 300 (434 000–641 900)
State size				
Small states	344 300 (236 200–538 500)	303 600 (206 800–493 500)	285 600 (200 600–448 500)	218 600 (155 700–337 200)
Non-small states	15 951 200 (13 833 100–18 302 900)	13 267 500 (11 479 300–16 359 400)	12 514 300 (11 099 500–14 882 800)	10 270 400 (9 407 500–11 130 200)

Data are estimated number of death and 95% uncertainty interval.

Table 3: **Total number of predicted cancer deaths in the Commonwealth in 2025–35 at baseline and with three scale-up scenarios: (1) treatment modalities, (2) treatment and quality, and (3) comprehensive (treatment, quality, and imaging modalities)**

	Baseline (no intervention)	Treatment	Treatment and quality	Comprehensive
Commonwealth	151·2 (106·5–193·4)	206·1 (146·5–242·6)	221·8 (174·4–251)	264·2 (244·3–284·2)
Income group				
Low-income countries	1·3 (0·4–3·6)	3·4 (0·5–8·6)	5·8 (2·7–9·3)	9·6 (7·3–12·4)
Low-middle-income countries	62·5 (18·5–105·1)	111·5 (54–146·8)	123·9 (76·1–152·1)	158·0 (139·5–176·7)
Upper-middle-income countries	11·5 (8·4–15·5)	14·6 (10·5–18·1)	15·2 (11·3–18·3)	18·4 (17–19·9)
High-income countries	75·8 (73·2–78·6)	76·7 (73·8–79·8)	76·8 (73·9–80·2)	78·2 (75·4–81·1)
Geographical region				
Africa	15·8 (9·6–23·5)	28·4 (14·2–40·7)	34·9 (24·2–44·5)	49·0 (42·3–55·8)
Asia	60·5 (17–103·4)	101·7 (51·5–135·3)	110·5 (65·6–136·2)	136·7 (121–152·6)
Caribbean and the Americas	23·0 (21·6–24·6)	23·1 (21·6–24·7)	23·1 (21·6–24·7)	23·5 (22·1–25·2)
Europe	34·7 (32·9–36·4)	35·2 (33·3–37·3)	35·3 (33·3–37·3)	35·8 (34·1–37·7)
Pacific	17·1 (15·5–18·8)	17·7 (16–19·9)	18·0 (16·2–20·1)	19·0 (17·2–21·4)
State size				
Small states	3·5 (2·9–4·7)	4·2 (3·2–5·7)	4·5 (3·6–6)	5·6 (4·5–7·6)
Non-small states	147·7 (102·9–189·9)	201·9 (142·5–237·3)	217·3 (170·4–246·1)	258·6 (238·4–277·6)

Table 4: **Life-years lost among individuals diagnosed with cancer between 2025–35 (millions, undiscounted) for the Commonwealth by country income group and by geography, at baseline and with three scale-up scenarios: (1) treatment modalities, (2) treatment and quality, and (3) comprehensive (treatment, quality, and imaging modalities)**

figure 6A and 6B. Whereas, in tables 3 and 4, and figure 7 only three scenarios (1, 3, and 4) are shown to make the results more accessible.

Across the Commonwealth, scale-up of chemotherapy, radiotherapy, and surgery (scenario 1) led to an estimated increase in 5-year net survival from 30·7% to 41·3% (95% UI 30·4–47·4; figure 6). Scale-up of chemotherapy, radiotherapy, and surgery with low-cost imaging diagnostics (x-ray and ultrasound; scenario 2) led to an estimated increase in 5-year net survival from 30·7 to 44·0 (37·5–48·6), scaling quality of care with chemotherapy, radiotherapy, surgery and low-cost imaging diagnostics (x-ray and ultrasound; scenario 3) produced an increase to 47·2 (44·3–50·8) and comprehensive scale-up (scenario 4) produced an increase in 5-year net survival to 52·9 (50·0–56·0; table 2; figure 5).[29]

The improvements in 5-year net survival varied substantially by country income group and geography (figure 6). In LICs, scale-up of chemotherapy, radiotherapy, and surgery with low-cost imaging diagnostics (x-ray and ultrasound) and quality of care (scenario 3), improved 5-year net survival from 4·1 (95% UI 0·04–15·2) to 37·5 (29·6–47·3). With comprehensive scale-up (scenario 4), 5-year net survival increased further to 45·3 (37·1–55·0). In UMICs, there were also substantial improvements with 5-year net survival improving from 33·1 (23·7–46·0) to 49·0 (44·7–53·5) with Scenario 3, and to 56·1 (52·9–59·6) with scenario 4. For HICs, the improvements were more modest, reaching from 59·0 (57·8–60·2) to 59·5 (58·2–61·1) with scenario 3 and 61·1 (59·9–62·4) with scenario 4 (figure 6; table 2).

Results of changes in 5-year net survival with different scale-up scenarios for each Commonwealth country are available at the Commonwealth Observatory for Health Systems and Cancer Control.

Section 6: Health and economic benefits of investing in cancer control

We adapted an earlier microsimulation model on costs of scale-up of cancer control interventions for 11 cancer types in 200 countries and territories, health benefits in terms of cancer survival, economic benefits, and return on investment. We included in this model up-to-date costs of cancer control interventions obtained from a systematic review and new estimates for economic value of life. The details of the model are presented elsewhere.[30]

Cancer costs by country GDP were based on an analysis of cancer treatment costs from the medical literature, accounting for cancer type and stage. In the model, we assume that if a needed treatment or imaging modality is not available then the patient incurs only 50% of the treatment and imaging costs, as estimates of non-procedure costs (eg, hospitalisation) account for roughly half of cancer treatment costs. For scenarios in which we scaled up quality of care, to account for the complexity of

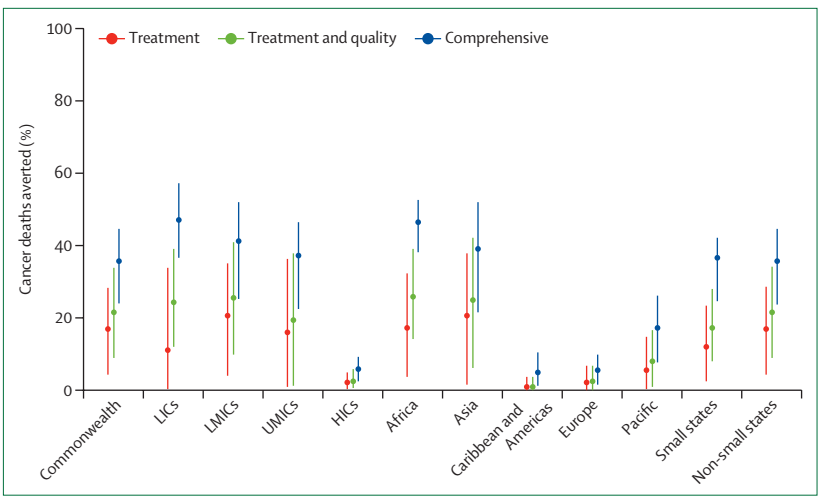


Figure 7: **Percentage cancer deaths averted in the Commonwealth in 2025–35 with three scale-up scenarios of (1) treatment modalities, (2) treatment and quality, and (3) comprehensive (treatment, quality, and imaging modalities) compared with baseline**

Figure shows 95% uncertainty intervals. HICs=high-income countries. LICs=low-income countries. LMICs=low-middle-income countries. UMICs=upper-middle-income countries.

implementing various quality improvement programmes, we also include a 20% cost increase for health-system strengthening for countries below the high-income mean for quality of care, based on estimates of the cost of scaling-up other targeted health programmes from earlier studies.[8,12]

We obtained per capita GDP data and projections (2025 US$) from the International Monetary Fund for the period 1980–2030. When calibrating the model that included all countries of the world to ensure as many data points as possible, data were not available for several countries, so the mean regional GDP estimates were used for these countries: Bermuda, Cayman Islands, Cuba, South Korea, Faroe Islands, Greenland, Liechtenstein, and Monaco.

We carried forward the last available estimate of per capita GDP for the following countries when calibrating the model: Afghanistan (2023), Bolivia (2026), Eritrea (2019), Lebanon (2024), Pakistan (2024), Sri Lanka (2024), Syria (2010), Venezuela (2026), and occupied Palestinian territory (2023). As a simplifying assumption, estimates for 2030 were held constant for future years.

To account for additional future health expenditures from improved cancer survival, we used estimates of health expenditures as a percentage of GDP from the WHO Global Health Expenditure database. We used country-specific estimates for 2022 (except for Ukraine, for which the most recent estimate was for 2021).

We estimated the costs and benefits of different packages of scale-up in which we improved the availability of treatment modalities (chemotherapy, radiotherapy, surgery, and targeted therapy), imaging modalities (ultrasound, x-ray, CT, MRI, PET, and single-photon-emission CT), and quality-of-care to the mean level of

	Costs	Benefits (human capital)	Benefits (full income)
Commonwealth	36·73 (25·46–48·65)	139·62 (82·98–199·05)	793·13 (492·1–1106·15)
Income group			
Low-income countries	0·67 (0·47–0·86)	3·48 (2·22–4·79)	13 (8·5–17·84)
Lower-middle-income countries	19·01 (11·52–26·91)	97·49 (46·51–153·46)	460·56 (217·15–726·44)
Upper-middle-income countries	4·31 (2·53–6·06)	14·4 (8·16–20·72)	77·61 (44·61–106·71)
High-income countries	12·73 (4·8–21·29)	24·25 (11·09–40·86)	241·96 (106·38–391·07)
Geographical region			
Africa	5·62 (3·38–7·49)	26 (18·14–32·92)	117·6 (78·03–150·8)
Asia	18·86 (11·34–26·24)	90·91 (38·74–148·03)	454·53 (207·97–725·68)
Caribbean and the Americas	2·11 (0·36–5·25)	3·71 (0·5–10·03)	36·18 (3·09–98·51)
Europe	6·46 (2·1–12·06)	10·74 (2·41–21·65)	110·85 (27·24–218·91)
Pacific	3·67 (0·28–8·18)	8·27 (1·34–18·13)	73·98 (6·71–172·09)
State size			
Small states	1·06 (0·81–1·39)	3·62 (2·19–5·39)	17·08 (11·14–24·39)
Non-small states	35·67 (24·49–47·55)	136·01 (79·99–195·77)	776·06 (476·9–1091·34)

Table 5: **Incremental costs and benefits (using human capital and full-income approaches) of comprehensive scale-up 2025–35 (US$ billion, discounted 3%) in Commonwealth countries**

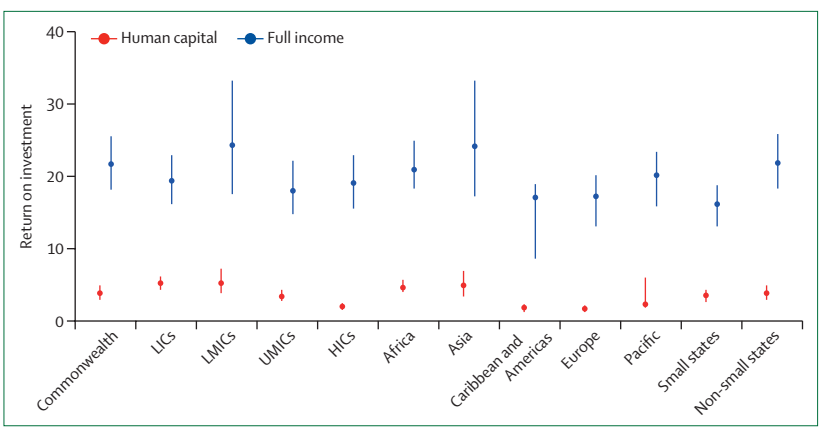


Figure 8: **Return on investment with comprehensive scale-up across Commonwealth countries in 2025–35 by country income group and by geographical grouping using human capital and full income approaches for estimating benefits**

Comprehensive scale-up includes treatment modalities, quality of care, and imaging modalities, including (ultrasound, x-ray, CT, MRI, PET, and single-photon emission CT). Human capital: Values health gains by lost or gained economic productivity. Full income: Values health gains by the societal value of additional life-years, including but extending beyond productivity. HICs=high-income countries. LICs=low-income countries. LMICs=low-middle-income countries. UMICs=upper-middle-income countries.

HICs: (scenario 1) treatment only—scale up all treatment modalities, (scenario 2) treatment and quality—scale up all treatment modalities and quality of care, and (scenario 3) comprehensive—scale up all imaging and treatment modalities and quality of care. The model was previously calibrated to empirical data to ensure the predicted survival estimates were consistent with population-based survival estimates from CONCORD-3 study.[30]

Building on earlier work,[12] we estimated the return on investment of scaling-up cancer treatment and imaging modalities and quality of care using two approaches. Our primary analysis used the full-income approach (also called the value-of-life-year approach), which recognises the intrinsic societal value of a life-year, based on estimates from the 2013 *Lancet* Commission on Global Health in 2035 (2·3 times GDP per capita for LMICs; 1·4 times GDP per capita in HICs).[44] For the human capital approach, productivity estimates were calculated using 1 times per capita GDP for individuals aged between 18 to 65 years only. Benefits were compared with the costs of scale-up (cancer treatment costs and future health-care expenditures for cancer survivors) to calculate the return on investment of scale-up. All costs and benefits were discounted at 3% annually.

Cancer deaths averted with scale-up increased with each scenario and were greatest with comprehensive scale-up across the Commonwealth, by country-income groups and by geography (table 3; figure 7). Across the Commonwealth, cancer deaths declined from a baseline of 16 295 400 (95% UI14 182 400–18 655 800) deaths in 2025–35 to 13 571 100 (11 761 000–16 635 100) with scale-up of treatment modalities (scenario 1), to 12 800 000 (11 357 200–15 178 500) with treatment and quality of care (scenario 2), and to 10 489 000 (9 609 000–11 372 100) with comprehensive scale up (scenario 3; table 3).

There were substantial increases in life-years across all country income groups and geographies for each scenario, compared with baseline (table 4). Compared with a baseline of 151·2 (95% UI106·5–193·4) million life-years diagnosed with cancer between 2025–35, the number of life-years increased to 206·1 (146·5–242·6) million with scale-up of treatment (scenario 1), 221·8 (174·4–251) million with scale-up of treatment and quality (scenario 2), and to 264·2 (244·3–284·2) million with comprehensive scale-up (scenario 3; table 4).

The incremental cost of comprehensive scale up across the Commonwealth over 2025–35 amounted to US$36·73 billion (95% UI 25·46–48·65; table 5), but the incremental benefits were very substantial, amounting with the more conservative human capital approach to

$139·62 (82·98–199·05) billion. The benefits using full-income approach amounted to $793·13 billion (492·1–1106·15) (table 5). There were substantial incremental benefits by country income group and by geographical groups (table 5) and major returns on investment that ranged from $16 to $24 for every $1 invested (figure 8). We provide in the Commonwealth Observatory for Health Systems and Cancer Control the incremental costs, incremental economic benefits, and the return on investment for each Commonwealth country for each of the three scale-up scenarios.

Section 7: Broader economic benefits of investing in cancer control through direct effects in the health economy and spillover effects in adjacent economic sectors

There are three pathways to generating economic benefits with investments in health systems. First, investments in cost-effective interventions improve health outcomes and thus reduce direct costs of treatment in health systems. For example, WHO has identified highly cost-effective best buys for tackling NCDs and cancer (including tobacco taxation, cervical cancer screening, vaccination against human papilloma virus (HPV) for prevention of cervical cancer, HPV DNA screening, hepatitis B vaccination for prevention of liver cancer, and early diagnosis programmes for breast and colorectal cancer)[45] and 20 cost-effective interventions for inclusion in publicly-funded health benefit packages for UHC.[11]

Second, investments improve the health and wellbeing of the population and accumulate human capital by increasing paid and unpaid work productivity of the individuals.

Third, an important but less well quantified pathway relates to the broader economic benefits, including direct effects within the health economy, spillover effects (ie, effects in adjacent sectors), and induced income effects to the overall economy via sectoral interconnectedness with other industries.

Broader economic benefits of investing in cancer control in the Commonwealth

A 2025 study by Atun and colleagues quantified for the first time the size of the health economy in terms of GVA and employment creation across four Commonwealth countries.[46] For the Commission, we extended and adapted this study to include new figures for health expenditures for cancer control presented in Section 4.

Due to the unavailability of time series data for several subsectors of the health economy in most Commonwealth countries, we adopted a simplified forecasting approach. Specifically, we extrapolated previous health economy data (2014 data) to 2022 by assuming that its growth followed the nominal growth rate of GVA[47] and employment in each country, rather than a detailed time-dynamic forecast across individual subsectors as was done in the earlier study.[46]

Our analysis comprised of three consecutive steps. We positioned the Health Economy as a satellite sector that comprises all companies, services, manufacturers, and other suppliers,[48] which provide goods and services that contribute to health in a broader sense.[49] The Health

	Expenditure on cancer control (mUS$)*	mUS$*			As % GDP		
		Inside the HE	Adjacent sectors	Induced income	Inside the HE	Adjacent sectors	Induced income
High-income countries†							
UK	10 129·0	8103·2	4694·1	5947·3	0·25	0·15	0·18
Australia	9185·0	7348·0	2738·9	6434·8	0·46	0·17	0·41
Canada	5347·0	4277·6	1704·2	2534·2	0·24	0·10	0·14
Singapore	2298·0	1838·4	700·3	386·0	0·48	0·18	0·10
New Zealand	1075·0	860·0	473·8	959·8	0·40	0·22	0·44
Cyprus	105·0	84·0	22·9	30·4	0·29	0·08	0·10
Malta	85·9	68·7	16·6	18·8	0·40	0·10	0·11
Brunei	74·1	59·3	42·3	45·2	0·46	0·33	0·35
Barbados	62·3	49·8	26·0	25·8	0·93	0·49	0·48
Bahamas	55·6	44·5	17·0	30·3	0·37	0·14	0·25
Trinidad and Tobago	2·3	1·8	1·0	1·0	0·01	0·00	0·00
Guyana	0·1	0·1	0·0	0·0	0·00	0·00	0·00
Upper-middle-income countries†							
South Africa	2952·0	2361·6	1637·0	1969·9	0·65	0·45	0·55
Malaysia	324·0	259·2	109·5	101·0	0·07	0·03	0·03
Namibia	66·1	52·9	23·5	28·0	0·47	0·21	0·25
Jamaica	65·6	52·5	30·1	33·4	0·35	0·20	0·23
Mauritius	29·2	23·4	4·8	10·5	0·18	0·04	0·08
Gabon	13·2	10·6	8·1	7·8	0·07	0·05	0·05
Belize	11·6	9·3	3·9	4·3	0·37	0·15	0·17
Maldives	11·3	9·0	6·0	5·1	0·16	0·10	0·09
Botswana	8·9	7·1	2·8	2·6	0·04	0·02	0·01
Fiji	3·4	2·7	1·6	1·4	0·06	0·03	0·03
Lower-middle-income countries†							
India	14 769·0	11 815·2	6119·6	4496·2	0·40	0·21	0·15
Tanzania	394·0	315·2	282·7	44·4	0·47	0·42	0·07
Pakistan	391·0	312·8	210·0	361·7	0·08	0·05	0·09
Cameroon	210·0	168·0	107·0	140·2	0·42	0·27	0·35
Bangladesh	168·0	134·4	47·9	162·4	0·04	0·02	0·05
Kenya	138·0	110·4	36·1	68·4	0·12	0·04	0·07
Papua New Guinea	133·0	106·4	101·7	34·4	0·42	0·40	0·14
Togo	44·4	35·5	30·6	19·8	0·45	0·39	0·25
Sri Lanka	37·3	29·8	6·2	25·9	0·03	0·01	0·03
Ghana	32·5	26·0	9·5	19·8	0·04	0·01	0·03
Nigeria	29·0	23·2	2·9	1·9	0·00	0·00	0·00
Eswatini	19·6	15·7	8·1	6·6	0·36	0·19	0·15
Lesotho	12·3	9·8	6·2	6·7	0·44	0·28	0·30
Zambia	9·4	7·5	5·0	7·6	0·03	0·02	0·03
Vanuatu	4·4	3·5	2·5	2·5	0·42	0·30	0·30
Samoa	1·5	1·2	1·2	1·2	0·15	0·16	0·15

(Table 6 continues on next page)

	Expenditure on cancer control (mUS$)*	mUS$*			As % GDP		
		Inside the HE	Adjacent sectors	Induced income	Inside the HE	Adjacent sectors	Induced income
(Continued from previous page)							
Low-income countries†							
Malawi	76·6	61·3	41·0	52·8	0·53	0·36	0·46
Rwanda	70·9	56·7	33·8	50·3	0·44	0·26	0·39
Sierra Leone	39·3	31·4	43·3	30·7	0·36	0·49	0·35
Gambia	12·2	9·8	12·0	9·8	0·52	0·64	0·53
Uganda	10·8	8·6	5·3	6·9	0·02	0·01	0·02
Mozambique	0·3	0·2	0·1	0·2	0·00	0·00	0·00

Data was not available for four high-income countries (Seychelles, Antigua and Barbuda, Saint Kitts and Nevis, and Nauru), six upper-middle income countries (Dominica, Grenada, Saint Lucia, Saint Vincent and the Grenadines, Tonga, and Tuvalu), and two lower-middle income countries (Kiribati and Solomon Islands). Data taken from from Figi et al.[53] GDP=gross domestic product. GVA=gross value added. HE=health economy. mUSD=million US dollars. *2022 prices. †Average from the countries in the income group.

Table 6: **Value creation from cancer investment: GVA gains across 44 Commonwealth countries (for which data are available) by country income group (2022)**

Economy is divided into three subsectors: health care, industrial health economy, and services and support, which consolidate to the extended ecosystem of the health economy. Using multiregion input–output data we quantified the direct economic contribution of the subsectors in terms of GVA and employment. In the second step, we identified the interconnectedness of the health economy with other economic sectors by implementing input–output modelling[50–52] based on intermediate consumption of goods and services along the economic value chains. This approach allowed us to quantify the indirect contribution of the health economy in terms of GVA and employment to the rest of the economy. Finally, we evaluated induced consumption effects that are triggered by the first two mechanisms, which lead to provision of wages and thus stimulate consumption in the overall economy. The methods are presented in the appendix (pp 52–60).

In table 6, we present an assessment of the GVA generated from health expenditures for cancer control across Commonwealth countries. Figure 9 shows the results in terms of absolute GVA generated by the cancer investment case, as well as its contribution, and as a percentage of GDP, categorised by World Bank country income level, and then broken down by country in each country income group in figure 10.

In 2022, the GVA from health expenditures for cancer control across all Commonwealth countries was an estimated US$82·9 billion, but there was substantial variation in the GVA generated across countries and country income groups (table 6). Although many of the highest absolute values are observed in HICs—except for India, an LMIC—considerable variation exists within each income group. For example, in 2022, total health

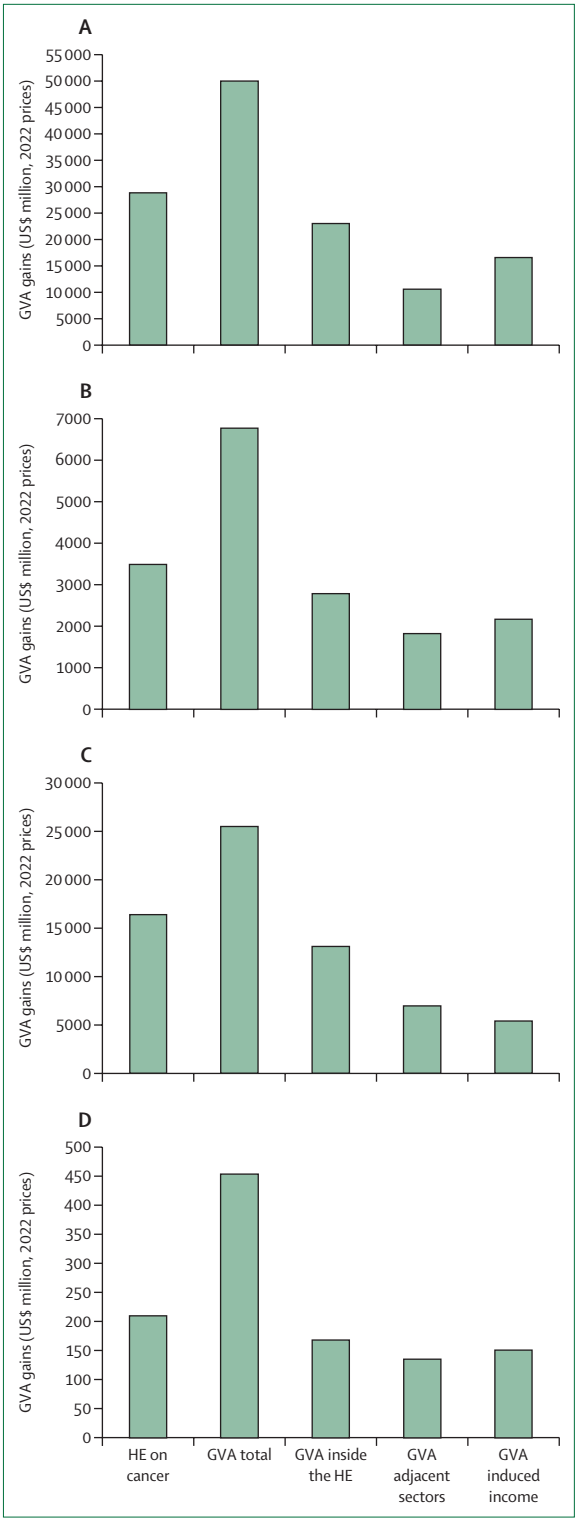


Figure 9: **Value creation from cancer investment: GVA gains across Commonwealth countries by income group**
(A) High-income countries. (B) Upper-middle-income countries. (C) Lower-middle-income countries. (D) Low-income countries. GVA=gross value added. HE=health economy.

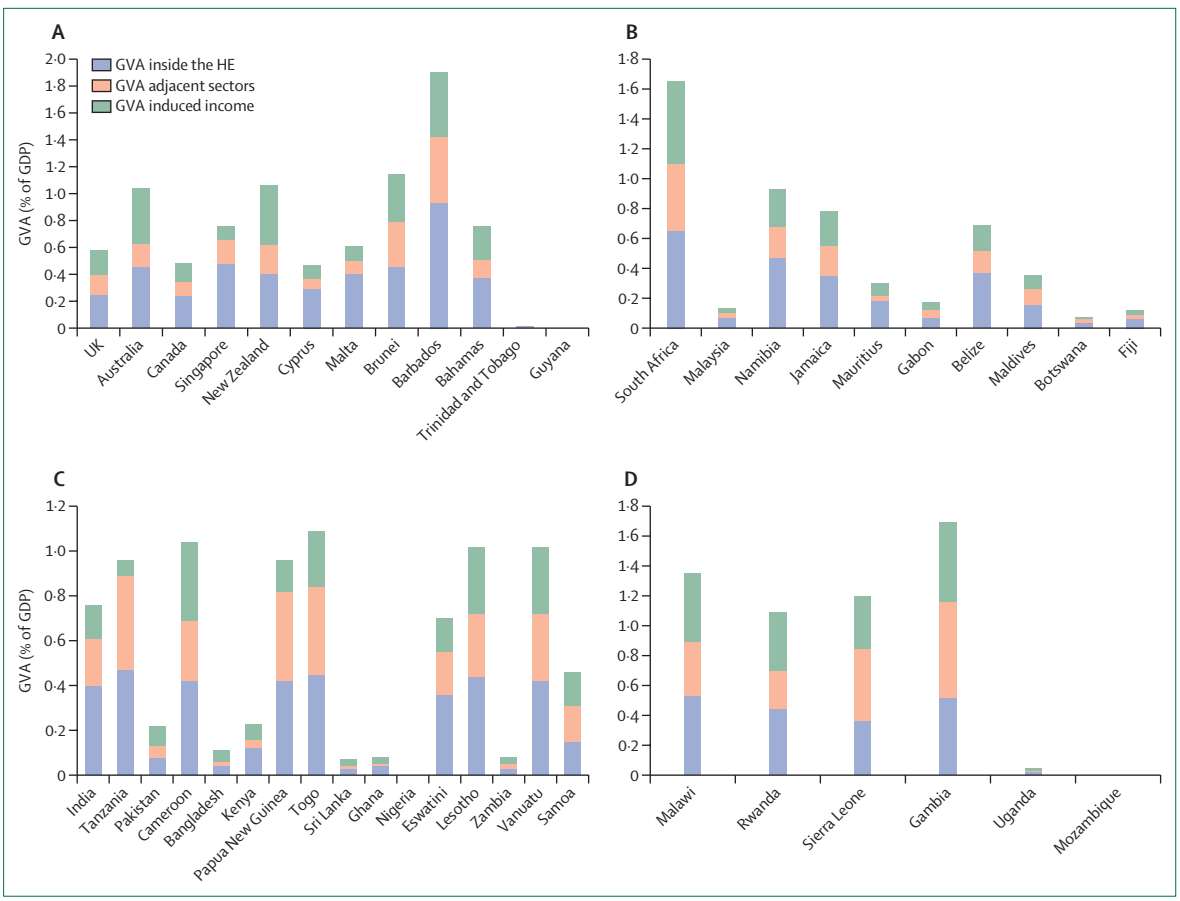


Figure 10: **Value creation from cancer investment: GVA gains from investment in cancer control as a percentage of national GDP across Commonwealth countries by income group**

(A) High-income countries. (B) Upper-middle-income countries. (C) Lower-middle-income countries. (D) Low-income countries. GDP=gross domestic product. GVA=gross value added. HE=health economy.

expenditure on cancer control in Commonwealth HICs was an estimated as $28·8 billion, and the GVA generated from this investment amounted to $50·2 billion, comprising $23·0 from GVA inside the health economy, $10·6 in GVA from adjacent sectors, and $16·6 in induced income (figure 9A). For UMICs, these figures amounted to $3·5 billion investment in cancer control, with total GVA generated $6·8, comprising $2·8 from GVA inside the health economy, $1·8 in GVA from adjacent sectors, and $2·2 in induced income (figure 9B). The GVA generated were also substantial for LMICs and LICs (figure 9C and 9D).

A similar pattern is observed with GVA as a percentage of GDP. The variation is substantial both within and across income groups, ranging among HICs from 0·6% in the UK, to 1·0% in Australia, and 1·1% in New Zealand to as high as 1·9% in Barbados (figure 10A). Among UMICs, GVA as a percentage of GDP varied from 0·1% in Malaysia to 1·7% in South Africa (figure 10B). A similar picture was observed in LMICs, where GVA for Pakistan was 0·2% and that for India 0·8% (figure 10C), and for LICs, where GVA added was as high as 1·1% in Rwanda, 1·2% in Serra Leone, 1·4% in Malawi, and 1·7% in the Gambia (figure 10D).

Priority areas for investing in cancer control in the Commonwealth

The Commission argues that a core set of standards and essential services should be established across all countries for cancer control, while driving simultaneous improvement across all countries with differing levels of baseline performance. In doing so, the Commission identified six priority areas for targeted investments to advance equitable cancer control across the Commonwealth countries

These priority areas are selected to address cancer-related disparities across gender, socioeconomic status, geography, Indigenous populations, minoritised ethnicities, and disability, and should be read alongside the Commission's cross-cutting equity principle.

The six priority areas discussed in Sections 8–13 are calibrated to serve these objectives concurrently and were informed by the analyses undertaken by the

For more on the **PAHO Strategic Fund** see https://www.paho.org/en/paho-strategic-fund#:~:text=The%20PAHO%20Strategic%20Fund%20is%20a%20regional,stock%2Douts%20in%20the%20region%20of%20the%20Americas

Commission that identified cancer related challenges, opportunities, and Commonwealth advantages; discussions with the Commonwealth Secretariat; interviews and roundtable deliberations with Chief Health Officers and a consultation meeting involving a broad range of stakeholders at the Commonwealth Secretariat in London, UK (March 17–18, 2025). When identifying priorities, the Commission noted the challenges of implementing earlier health-related initiatives across all Commonwealth countries and at scale.

Anchored in the Commonwealth Charter, these priority areas present a shift from narrative strategies to data-driven, operational solutions that leverage the Commonwealth's unique legal, regulatory, and political ties to achieve shared health and development goals. These priority areas include targeted policies to improve access to affordable, high-quality cancer diagnostics and technologies; transforming care delivery; innovation; patient engagement; education and professional development; and robust data systems and comprehensive NCCPs.

It is important to note that although some of these priorities are inherently cancer specific (eg, targeted policies to improve access to affordable and high-quality cancer diagnostics and technologies, such as radiotherapy infrastructure and cancer-specific pooled procurement), the rest of the priority areas, namely education (eg, workforce training and accreditation), service delivery (eg, quality-assurance systems), innovation ecosystems, and patient engagement structures, are interventions that address system-wide functions and offer opportunities to strengthen the broader health system, but are being advanced through a cancer lens.

Section 8: Targeted policies for improved access to affordable, high-quality cancer diagnostics and technologies

In this section, we explore the first priority: targeted policies to improve access to affordable, high-quality cancer diagnostics and technologies where major disparities exist due to high cost of new cancer drugs, inefficient supply chains, and regulatory barriers. The Commission has identified five areas to develop near-term high-impact solutions: pooled procurement, systems for health-technology assessment (HTA), transparency tools, fiscal sustainability, and Indigenous and equity-first frameworks.

Pooled procurement

Evidence shows benefits of pooled procurement that has resulted in a 79–85% reduction in medication prices, better quality products, reduced stockouts, and improved supply chain efficiency.[54]

Successful examples from the Caribbean show the benefits of pooled procurement; for example. through the Organisation of Eastern Caribbean States Pharmaceutical Procurement Scheme and the Pan American Health Organization (PAHO) Strategic Fund, which partially supports cancer care and has secured competitive prices for 105 essential medicines, including a biosimilar to trastuzumab.

The Caribbean's regional procurement network, for example, has shown how smaller nations can access medicines affordably and reliably when acting together. These models, and others involving Commonwealth countries, including intra-country pooling, such as the National Cancer Grid Pooled Procurement Initiative in India (appendix p 61), can be replicated and scaled across other Commonwealth regions, including sub-Saharan Africa, South Asia, and the Pacific. Yet middle-income countries pay twice the price for cancer medicines compared with HICs despite having lower purchasing power and greater need,[55] and less than 20% of WHO member states participate in pooled procurement.[56]

An important action is to build on the existing initiatives in the Caribbean, and the Voluntary Information and Price Sharing Database, as part of its Heads of Procurement Network,[16] to establish a Commonwealth-wide pooled procurement mechanism to negotiate better pricing for cancer medicines, vaccines, diagnostics, and health technologies to help improve accessibility and affordability. This mechanism proposes three levels: the Commonwealth Secretariat, a pooled procurement organisation, and the member states, each with defined operational responsibilities: (1) Commonwealth Secretariat: a facilitative body providing overarching governance, policy, regulatory, and technical support, without engaging in direct procurement operations—core responsibilities include policy and regulatory alignment, technical assistance, and capacity building, monitoring, and evaluation; (2) Commonwealth pooled procurement organisation: the operational engine of the framework, funded through tiered contributions by member states—key functions include demand aggregation and harmonisation, centralised procurement management, data system integration and interoperability, and regional warehousing and distribution coordination, and (3) Member States: as owners of the mechanism, member countries participate voluntarily upon meeting minimum readiness standards—responsibilities include legal and institutional alignment, financial contributions, and implementation of interoperable supply chain tracking systems to enable transparent use of the procurement platform.

It is important to note, however, that the price-reduction potential of pooled procurement is not uniform across product types: it is best evidenced for multisource, off-patent generic medicines with several qualified suppliers, whereas single-source originator biologics and biosimilars operate in markets with fewer competing suppliers and offer correspondingly lesser scope for pooling to lower price. Furthermore, price reductions are not automatic, as pooled procurement schemes carry

well documented implementation costs, including cross-country coordination, the need to harmonise quality-assurance and regulatory standards across jurisdictions, and mixed results where participating countries differ in financing capacity or administrative readiness.

Health technology assessment

The rising costs of cancer interventions do not always correlate with meaningful clinical benefits. Many new cancer drugs come to market with marginal health benefits, often less than 3 months survival gains.[57–60] Even HICs, such as Canada and the UK, struggle with allocative inefficiencies, with widespread use of low-value treatments.[61,62]

HTA, the systematic evaluation of the properties, effects, and impacts of health technologies and interventions, is used by many countries for prioritising health technologies for inclusion in benefits packages for reimbursement by publicly funded services. The Commonwealth has an opportunity to design and implement a streamlined HTA tool to inform design of benefits packages for cancer control and to enable of long-term value assessment for new health technologies.

Although high-income Commonwealth nations, such as Canada, Australia, and the UK, have institutionalised HTA, these models have been costly and technically complex and have at times led to substantial delays in undertaking appraisals and integrating them into practice.[63] For example, in the UK, the Medicines and Healthcare products Regulatory Agency (MHRA) has full regulatory authority for approving new medicines and technologies. MHRA has developed flexible licensing pathways, such as The Innovative Licensing and Access Pathway,[64] including national approvals and participation in international collaborations to expedite access to promising therapies. Economic evaluations are led by the National Institute for Health and Care Excellence (NICE), which assesses submissions using quality-adjusted life-years (QALYs) and incremental cost-effectiveness ratios, applying thresholds between £25 000–35 000 per QALY to determine value for National Health Service (NHS) resources.[65] Since 2017, NICE has incorporated a budget impact test, where if projected NHS costs for a new therapeutic exceed £20 million annually within the first 3 years, phased introductions or commercial agreements can be negotiated to ensure sustainability.[65] Post-market real-world evidence data collection, particularly through the Cancer Drugs Fund, adds to the UK model by requiring mandatory reappraisals approximately 2 years after conditional funding, using data sourced from NHS Digital and patient registries.[65]

High costs and complexity of traditional HTAs means only 10 (37%) of 27 of Commonwealth countries with NCCPs use HTAs, creating a need for capacity building and shared resources. Where capacity constraints exist, adaptive HTA models tailored to local contexts and resources can be used.[66] For example, the India National Cancer Grid (NCG) piloted an adaptive HTA method evaluating ten cancer interventions using rapid evidence reviews and local price benchmarking to support inclusion in the national health insurance programme.[67]

Where traditional HTAs and adaptive HTAs are not feasible, other approaches could be used. For example, the WHO Model Lists of Essential Medicines, updated biennially and which now includes high-cost therapies, could be used as a starting point to define cancer medicines to be included in health-benefit packages,[68] although the list does not include some older but effective drugs that could be used in LMICs.[69] However, half of Commonwealth countries do not currently have a national essential medicines list. Alternatively, the European Society of Medical Oncologists Magnitude of Clinical Benefit Scale or American Society of Clinical Oncology (ASCO) Value Framework that are publicly available could be used complement the essential medicines list by evaluating clinical benefit and value for newer medicines not included in the WHO Model Lists of Essential Medicines (appendix p 62).

For more on the **ESMO Magnitude of Clinical Benefit Scale** see https://www.esmo.org/guidelines/esmo-mcbs

Adoption of cost-effective but high-cost technologies (such as radiotherapy equipment and advanced imaging diagnostics) is often hindered by budget constraints for procurement and maintenance.[70] Sustainable adoption of cost-effective technologies for cancer requires processes that are connected to regulation, procurement, financial planning, budget impact analysis, and building an investment case for new health technologies within a specific setting. A Commonwealth-wide tool for HTA could follow regulatory approval as the first step to ensure safety and efficacy of new technologies. Such a tool could include a shared assessment framework underpinned by economic evaluation methods that are consistent across member states, with a flexible appraisal component that ensures context specificity, such as ethical and equity considerations, budget impact assessment, incidence and prevalence of different cancers, competing health priorities, political considerations, reimbursement decisions (which would remain a sovereign country function, informed but not determined by the shared tool), and real-world outcome monitoring of value creation once introduced into health systems.

The scope of a Commonwealth-wide HTA tool should extend beyond pharmaceuticals and vaccines to include medical devices, diagnostics, AI-enabled solutions, and therapeutic technologies, for example, linear accelerators, radionuclide teletherapy units, and brachytherapy systems, as recommended by PAHO.

For more on the **PAHO Health technology assessment** see https://www.paho.org/en/topics/health-technology-assessment#:~:text=Health%20Technology%20Assessment%20(HTA)%20is,ineffective%20or%20not%20cost%2Deffective

The proposed Commonwealth HTA approach is intended to complement rather than duplicate the WHO Model Lists of Essential Medicines and existing national HTA bodies to provide a uniform approach to inclusion of cancer technologies in public benefit packages to ensure sustainable access to initially high-cost but ultimately cost-effective interventions.

Price transparency tools

Price transparency is an important policy lever for better procurement decisions and improving access to affordable cancer medicines, particularly in LMICs, where cancer medicines consume a large proportion of the health budget. However, there is little or no visibility into what countries pay, what discounts are offered and why prices vary, as contracts for purchasing medicines are confidential, and not publicly disclosed. LMICs sometimes pay higher prices than HICs for the same medicines due to fragmented procurement systems (without coordination between regulatory, procurement, and clinical sectors that purchase and use these medicines), low negotiation leverage, and lack of access to price intelligence.[71]

Without transparency, policy makers cannot assess affordability, evaluate the impact of markups along the supply chain, or promote fair competition, and prices for essential medicines vary greatly among countries.[72] WHO's Global Report on Cancer Medicines Pricing and Affordability highlights a wide variance in cancer drug prices across country income settings, with no consistent link to economic status or volume of use.[73] In some Commonwealth countries, systemic therapies consume up to 50% of national cancer budgets, often depleting spending on diagnostics, radiotherapy, and surgery.[73]

Price transparency initiatives for medicines exist in a few countries in low-resource settings with benefits.[74] In South Africa, government initiatives to promote drug price transparency required manufacturers to disclose a single exit price of originator prescription medicines, which was shown to be associated with a 20% decrease in drug pricing.[75] The WHO has created a price transparency tool that aggregates pricing, regulatory, and coverage data from over 60 countries (personal communication and demonstration by Andre Ilbawi). The tool was piloted in several Commonwealth states, and tool implementation led in one UMIC to a renegotiation of oncology drug prices, generating projected annual savings of 20%, which were redirected to radiotherapy investments. A second country used the tool to benchmark national prices against global standards, exposing overpayments and prompting procurement reform (personal communication and demonstration by Andre Ilbawi). These tools also align with global best practices recommended in Sustainable care for children with cancer: a *Lancet Oncology* Commission[7] and have been endorsed by multilateral donors for integration into pooled procurement initiatives. However, less attention is given to the equally crucial need for transparency in pricing of medical devices, diagnostics, and other health technologies.

For more on the **Common Sense Oncology initiative** see https://commonsenseoncology.org/about-cso/

There is an opportunity for the Commonwealth to use existing tools to extend the Voluntary Information and Price Sharing Database[16] to establish a price transparency platform to achieve greater value for medicines, devices, diagnostics, and health technologies. However, achieving price transparency is challenging and only likely to be realised where Commonwealth members can coordinate regionally for pooled procurement to achieve bargaining power, credibly identify alternative suppliers, commit to reporting through mechanisms, such as the WHO Price Transparency Tool, and establish phased or tiered transparency commitments—conditions that are increasingly challenging in practice given the broader trend toward confidential pricing negotiations in HICs.

Mechanisms for fiscal sustainability of cancer control

Fiscal sustainability is a major issue for all health systems due to the widening gap between rising demand and available supply of resources for cancer care that are increasingly complex and costly, incorporating bi-modality or trimodality care with advanced imaging and pharmaceuticals.[76,77] For example, in the UK, there was a 43% increase in expenditures on HTA-approved cancer drugs between 2018 and 2022 (£904 million).[78] By 2050, the economic cost of cancer is estimated to reach US$25·2 trillion, representing approximately 0·7% of the GDP of HICs.[79]

For many Commonwealth countries, achieving fiscal sustainability requires a better understanding of the cost of delivering an essential package of services, which includes both capital expenditures (radiotherapy equipment and imaging) and recurrent cost for hospital-based care delivery and workforce.[80] Without full and proper costing, policy makers underestimate true needs, leading to underfunded plans and implementation gaps; yet around 65% of NCCPs are not costed or budgeted.[81]

The first step is to ensure available resources are used effectively to invest in prevention policies, such as taxes on tobacco, alcohol, and sugary beverages, and cost-effective cancer control actions to minimise waste by reducing inappropriate or unnecessary care. For example, the Choosing Wisely programme uses multi-stakeholder consensus to identify low-value practices that are likely to deliver no benefit or even cause harm, and should not be provided within public or private sector care,[82] whereas the Common Sense Oncology initiative promotes cancer control interventions that measurably improve the lives of patients. Furthermore, value scales have been developed by professional organisations to inform reimbursement of specific cancer therapies, including appraisal of benefits of high-cost cancer drugs beyond those recommended by the WHO Model Lists of Essential Medicines,[83] which could be adapted by Commonwealth countries to their own contexts.

The second step involves assessing the health and economic benefits of shifting investment upstream in the care pathway to ensure early diagnosis and intervention. Treating late-stage cancers costs twice as much as early-stage, with worse outcomes.[84] Early diagnosis and screening programmes, therefore, offer

a high return on investment both in terms of lives saved and money spent.[85]

Together, these steps will help create fiscal space by eliminating poor quality and inappropriate care through use of treatment protocols that enable more efficient care models, such as fractionation schedules in radiotherapy and evidence-based de-escalation.[86] Ineffective, non-evidence-based therapies squander opportunities to cure patients (eg, not providing surgery or radiotherapy where indicated) result in higher rates of mortality and complications, and waste resources.[87]

Value and fiscal sustainability are not always aligned, however: a therapy judged high value can still have substantial budget impact, so Commonwealth processes must balance cost-effectiveness value against affordability rather than assuming the two will routinely coincide, and encourage use of appropriate mechanisms, such as managed entry agreements, outcomes-based pricing, or phased introduction, to manage budget impact.

Potential options for fiscal space creation and funding that could be generated are quantified and presented in Section 14.

Indigenous and equity-first frameworks for cancer control

Policies designed to provide the best outcomes for the greatest proportion of a given population risk underserving minority and other vulnerable populations and invariably lead to inequitable cancer outcomes within populations. Achieving equitable cancer outcomes is an important principle guiding the Commission.

For Indigenous peoples in historically colonised countries, the introduction and sustained impacts of colonial policies and rapid westernisation have produced substantial inequities in access to cancer control and disparities in survival outcomes.[88] These inequities can be alleviated through system-level policies that target cancers, such as lung cancer, that occur disproportionately among Indigenous peoples, are difficult to detect and treat, and have poor survival.

Cancer control should consider the unique burden of cancer among Indigenous peoples, while recognising that different nation-distinct approaches might be needed for Indigenous compared with non-Indigenous people to improve cancer outcomes and close outcome gaps.[89] Yet, most NCCPs lack comprehensive strategies for equity, to prioritise Indigenous communities and minoritised and other underserved populations, or incorporate systematic mechanisms for transparent engagement of civil society, patients, and non-government organisations.[81]

Although contexts and needs differ, several common principles underpin effective and culturally grounded cancer control. These principles include the ability for Indigenous people to exercise autonomy and self-determination in the design, implementation, and evaluation of cancer control, either through Indigenous-led (by and for) or co-design approaches, including training Indigenous physicians and health professionals, which we discuss further in section 9; respect for and inclusion of Indigenous epistemology, concepts of health and wellness and traditional practices; and inclusive partnerships between governments and Indigenous communities that allow for equal power in decision making and active protection to support, empower, and strengthen populations affected by inequities.[90]

Several Commonwealth countries, including New Zealand, Australia, and Canada, have made commitments to achieve equity in cancer outcomes for Indigenous peoples through their NCCPs (appendix p 81) Establishing and maintaining the social and political conditions, governance, structures, and investments to operationalise these aspirations has been challenging. Too often, Indigenous health equity is framed as a partisan political issue, subject to changes in government priorities and ideologies, rather than as a non-partisan requisite for an optimally performing health system,[91] an inherent and constitutional right, and a reconciliation practice. Despite these challenges, there are examples of sustained success in the development of equity-focused cancer control policies across the Commonwealth For example, in New Zealand, the country's national cancer control agency Te Aho o Te Kahu (the spine of the cloak) reports directly to the Government on matters of cancer control policy. Equity is embedded as a core foundation of the agency, with all work scrutinised by external Indigenous stakeholders for accountability.[91] A key remit of Te Aho o Te Kahu is to deliver on the country's Cancer Action Plan 2019–29, which includes a target of achieving cancer survival equity for Māori people by 2030.[92] The target might be aspirational, but with Māori experiencing poorer survival outcomes for 23 of the 24 most common cancers in New Zealand,[91] the target at least provides a basis for developing cancer control policy and activities that aim to address these inequities.[93]

In Canada, acknowledging the proximal and root causes of cancer inequities for Indigenous peoples, and embedding equity within cancer policy has been advanced by truth and reconciliation processes. In 2015, the Truth and Reconciliation Commission of Canada published seven health-related calls to action to redress the legacy of residential schools and advance the process of Canadian reconciliation with Indigenous peoples.[94] These health-related calls included calls for measurable goals to close the gap in health outcomes for Indigenous peoples, support for traditional healing practices, and greater representation of Indigenous peoples in the health professions. In response, Canadian federal, provincial and territorial, and non-governmental cancer control bodies partnered with First Nations, Inuit, and Métis governments, organisations, and community partners to develop, fund, and implement Indigenous people-specific,

First Nations, Inuit, and Métis equity-focused cancer priorities and plans in each province and territory.[94]

The Canadian Strategy for Cancer Control 2019–29, outlines three priorities identified by First Nations, Inuit, and Métis governments, organisations, and communities, along with three Indigenous people-specific actions, to develop an equitable cancer system for all people in Canada.[95] These actions include culturally appropriate care closer to home; people-specific, self-determined cancer care; and Indigenous-governed research and data systems.[95] Equity indicators that include Indigenous (self)-identifiers have been added to regional and national health datasets, using Indigenous-driven processes and partnerships to monitor how policy impacts Indigenous outcomes and equity, and serve as a mechanism for accountability.[95]

In summary, the targeted investments in five areas for improving affordability and accessibility to high-quality diagnostics and technologies, namely pooled procurement, systems for HTA, transparency tools, fiscal sustainability, and Indigenous and equity-first frameworks, a guiding cross-cutting principle, form a strategic package. Individually, they deliver technical value. Together, they represent a shift toward resilient, equity-based, and cost-effective cancer control across the Commonwealth.

Section 9: Transforming care delivery

Many patients across the Commonwealth face challenges in receiving high-quality cancer services, particularly Indigenous, minoritised, and underserved populations. Health service networks for cancer care remain suboptimal, while the consistency of care with latest evidence-based guidelines vary. These challenges are shaped by many factors. including geography, country income level, Indigenous status, and minoritised ethnic backgrounds.

Quality of care for patients with cancer

The quality of cancer care in the Commonwealth is shaped by multiple factors, including the availability of appropriately accredited health professionals providing services for cancer, robust regulation of services, and rigorous mechanisms for quality assurance and improvement. Quality of care depends on appropriate governance and organisation (such as regulation of professional roles and task shifting, licencing, accreditation, and revalidation), financing (eg, appropriate level of funding and payment models that incentivise provision of quality services), resource management (eg, training, education, distribution and retention of health professionals, appropriate level and allocation of health infrastructure, and networks that link and allow co-ordination of resource use), and delivery of services that are effective, efficient, equitable, and responsive (eg, through guidelines, and referral and counter-referral mechanisms).

Although all countries in the Commonwealth face a shortage of trained oncology professionals, a paucity of robust accreditation systems and continuous professional development programmes in LMICs leads to major variation in oncology workforce skills and the services provided. For example, many Caribbean nations struggle to provide advanced oncology services and treatments due to shortage of specialised health professionals.[96]

Without a robust, structured accreditation and revalidation processes, disparities in care persist, exacerbating the already poor cancer outcomes observed in many LMICs of the Commonwealth.[97]

The shortage of trained oncology professionals, particularly in LMICs, could be overcome by establishing systems for task shifting, transferable licencing, and shared Commonwealth oncology training programmes, including training of family physicians and district medical officers in India with clinical skills to manage cancer (appendix p 63). A hub-and-spokes network of training could enhance capacity in medical, surgical, and radiation oncology, as well as pathology and imaging diagnostics, modelled on successful regional initiatives (appendix p 63) .

Variability in competency standards across Commonwealth nations is a further barrier to providing high-quality services. Many Commonwealth countries lack opportunities for professional development and accreditation systems for professionals that require appropriate regulatory bodies with mandates for regular accreditation and revalidation of oncology health professionals. Strengthening workforce accreditation through regional collaborations and structured training hubs could help address these gaps in LMICs.[98] However, training and accreditation will need to be combined with incentives, such as competitive remuneration, career advancement opportunities, and supportive work environments, to retain skilled professionals in LMICs and underserved areas in HICs.

Effective regulation of health-care providers and services for cancer underpins the delivery of equitable, high-quality cancer care. However, regulatory mechanisms in the Commonwealth vary in the few countries where they are used and do not exist in most. The Commonwealth should establish shared principles that guide the licensing and accreditation of health-care providers providing cancer services, learning from the experience of member states where such regulations exist (appendix pp 63–64).

Evidence-based clinical guidelines and pathways help improve the provision of right services for patients and reduce variations in service quality and outcomes. In many Commonwealth nations, disparities in cancer care stem from fragmented service delivery, inconsistent clinical guidelines, and uneven access to diagnostics and treatment. For example, few Pacific Island countries have formal cancer-specific pathways for diagnosis and referral, and in these countries more than 70% of adult

cancers are diagnosed at advanced stages (stage III or IV).[99]

Adaptive guidelines could be used in low-resource settings to improve the uptake of evidence-based interventions by defining suitable options for health-care organisations in different contexts,[100] for example, where alternative imaging modalities in management of breast cancer account for varying accessibility of nuclear medicine scans.[101] This approach should be adopted throughout the Commonwealth to develop locally suitable guidelines. The African Cancer Coalition, in partnership with the National Comprehensive Cancer Network and professional societies, such as African Organisation for Research and Training in Cancer and ASCO, has developed resource-stratified treatment guidelines for sub-Saharan Africa, whereas Kenya and Rwanda have introduced national treatment guidelines for cancer services and palliative care.[98]

Even in the presence of evidence-based guidelines, consistently effective care requires quality assurance through cancer registries and regular clinical audits, with ongoing monitoring of an agreed set of indicators and feedback. However, inconsistent and incomplete cancer data collection, particularly in small and low-income nations, and the lack of population-based cancer registries mean that core epidemiological indicators (incidence and survival derived directly from population-based cancer registry data) are not available, hindering the establishment of robust quality assurance systems. Hence, Commonwealth countries should establish a population-based cancer registry where they do not already have one, to contribute to cancer control. However, results of direct relevance to national cancer control planning could be expected a few years after the establishment of the registry and will be influenced by factors, such as population size, existing health information infrastructure, analytic capacity, and sustained financing to yield actionable results.[102] The establishment of population-based cancer registries needs to be accompanied with Commonwealth-wide platforms for training of registry staff and data sharing for cross-learning and comparative analysis (appendix pp 64–65).

Reducing variation in quality assurance across Commonwealth requires systems for regular clinical audit and quality improvement, underpinned by robust governance, reliable data, and a standardised set of quality indicators to assess performance in relation to diagnostic accuracy, treatment timeliness, and outcomes (appendix pp 65–66).[103] Although there are well established quality improvement programmes in Commonwealth HICs, these are lacking in most LMICs. India is developing a national initiative through the NCG that has established the Enhancing Quality of Care in Cancer Programme that uses competency-based quality improvement methods to train health professionals providing cancer services, with participation of mentors from a global network.[104]

Equitable access to cancer care

Disparities in access to cancer services across the Commonwealth are shaped by factors including geography, country income level, Indigenous status, and minoritised ethnic backgrounds

Indigenous populations, including First Nations, Inuit, and Métis peoples in Canada, Aboriginal and Torres Strait Islander people of Australia, Māori in New Zealand, and Indigenous groups in Commonwealth states in Africa, Asia, and the Caribbean, face stark disparities in access to cancer care due to systemic racism, historical marginalisation, and socioeconomic disadvantage.[105,106] In New Zealand, for example, Māori face compounded barriers from uneven general practitioner availability and prohibitive primary care costs, leading to higher emergency department presentations or delays in seeking care, which in turn affect the timeliness of cancer diagnoses and referrals to specialists.[106] Comorbidities are more prevalent among Indigenous populations, further complicating access to and receipt of health-care services, and their under-representation among health-care providers further constrains culturally appropriate care.[107]

Migration is also a shared characteristic of Commonwealth nations, with migrants and refugees from within and outside the Commonwealth facing discrimination, language barriers, and a lack of agency, which can be intensified by intersectional factors—for instance, individuals from minoritised ethnic backgrounds who identify as LGBTQ+ can face discrimination that discourages them from seeking care.[108]

Subnational inequities are also widespread. In both high-income and lower-middle-income settings in the Commonwealth, patients living further away from radiotherapy centres are less likely to receive radiotherapy.[109] Rural and remote patients often face significant delays in diagnosis and treatment due to a shortage of oncology services, workforce, and infrastructure.[110]

In many Commonwealth countries, factors such as travel distance, costs, and time away from work intensify these disparities, particularly in LMICs where oncology services are often concentrated in major cities, leaving rural populations underserved. For example, in Botswana, a nation of 2·5 million people, radiotherapy is only available in the capital, Gabarone.[111] In New Zealand, care disparities are influenced by the centralisation of surgical services, which vary by cancer type—for instance, patients with lung cancer often travel great distances for surgery, whereas stomach cancer treatment is more decentralised, often accessible in regional hospitals.[112] Although a centralised model might improve care quality for some, it can also worsen inequities for those who live the furthest away.

Across Commonwealth nations, structural racism and systemic inequities remain major barriers to workforce diversity and require action. As highlighted in *The Lancet* Series on Racism, Xenophobia, Discrimination, and Health,[113] structural racism manifests through policies and institutional practices that perpetuate inequities in medical education and employment opportunities.

Paucity of data on Indigenous and marginalised populations exists due to political unwillingness to acknowledge colonial legacies, legal frameworks that prevent collection of data by ethnicity, challenges in classifying race and ethnicity, gaps in routine data collection methods, missing and incorrect data, and weak systems for collecting data on displaced, migrant, and refugee populations, and is a major barrier to addressing inequities and sharing in new solutions.[114] Many emerging health-care innovations, particularly AI-driven diagnostic solutions, are developed using data derived largely from Western, non-ethnically diverse populations that introduce algorithmic bias in the solutions developed.[115] Minoritised communities are also under-represented in clinical trials and research that shape modern cancer treatment and care.[116] Without inclusive, locally relevant evidence, practices might be adopted that are neither appropriate nor effective.

In the Commonwealth, reducing inequities in cancer care and outcomes requires models that prioritise culturally safe, community-led approaches. Several initiatives have successfully improved access and outcomes for underserved populations.[117] For First Nations and Indigenous populations, cultural understanding and safety are central to improving care, by moving away from colonial models and embracing cultural practices alongside so-called Western health care, recognising Indigenous traditions and implementing solutions designed and led by Indigenous leaders and communities.[118]

Health-care navigator programmes have proven effective in various Commonwealth nations to assist patients in navigating complex cancer care systems, where navigators, often from similar cultural or linguistic backgrounds, support patients in navigating complex health systems and improving cultural safety.[119] Indigenous patient navigator programmes in Canada and Australia have improved cancer care access and patient adherence by ensuring culturally competent guidance throughout the cancer journey.[120]

Investing in an oncology workforce that reflects the communities it serves is also crucial for addressing disparities. Recent initiatives to support recruitment into medical school and oncology training include the University of Otago's Mirror on Society Program and the Royal Australian and New Zealand College of Radiologists' Indigenous scholarships,[121] but sustained investment, commitment, and collaboration with Indigenous leaders and communities are required to translate these initiatives into actual increases in workforce. Sustained and focused policy efforts have narrowed equity gaps, for example, in Wahine Māori with screen-detected breast cancer.[122]

Telehealth is another important intervention in bridging cancer care gaps for remote populations, enabling rural and Indigenous communities to access oncologists and specialists virtually without extensive travel.[123] Initiatives in countries such as India, Pakistan, and Canada show that digital health can improve diagnosis, treatment monitoring, psychosocial support, and palliative care.[124–126] Early experience in Australia and New Zealand with decentralised clinical trials, or Teletrials, to improve equitable access to trials for rural and remote patients could provide useful lessons for the Commonwealth.[127]

Organisation and design of cancer services

Appropriate organisation and design of cancer services is crucial for the efficient use of available resources and equitable access to high-quality cancer services in the Commonwealth and relate to the nature of centralised versus decentralised care, tiered and networked service delivery with linkages between and within tiers, optimal location of new health facilities, collaboration among Commonwealth countries, and collaboration and partnerships with private sector (appendix pp 67–70). However, as the experiences from different Commonwealth countries indicate, such a major transformation requires strong political will, navigating different stakeholder interests, aligning incentives, and having appropriate regulatory frameworks and institutional capacity for strategic change (appendix pp 67–70).

Frameworks adapted from high-income settings can support the establishment of cancer centres in the Commonwealth by focusing decentralised models, such as hub-and-spokes systems.[128] These models involve smaller satellite centres (spokes) that provide routine and preventive care while referring complex cases to a few central locations (hubs). Although physical facilities might be centralised due to cost and specialised workforce requirements, a hub-and-spoke model can make services more accessible to dispersed populations by extending the reach of the hub (specialist knowledge and advanced equipment) to the spokes (local clinicians and community settings) through various means, such as telemedicine, regional collaboration and training, workforce development, and resource training (appendix pp 67–70).

Tiered cancer service delivery models, often used in high-income settings, typically include four levels: primary, secondary, tertiary, and quaternary, each with a distinct role. Primary care includes general practitioners and community health centres that focus on cancer prevention, early detection, and basic palliative care. Secondary care includes district hospitals and specialised clinics that offer provide more advanced diagnostic procedures services, basic chemotherapy, and surgical

interventions. Tertiary care is delivered through comprehensive cancer centres equipped with specialised technologies, and quaternary care encompasses highly specialised services, such as experimental therapies, clinical trials, and organ-specific oncology units. The effectiveness of a tiered system depends on strong linkages between tiers to establish a network, supported by integrated referral pathways, interoperable electronic health records, and reverse referrals (where patients are transitioned back to lower levels for follow-up or palliative care).

A tiered approach to cancer service delivery should be adopted in the Commonwealth. This approach will help to structure patient care efficiently by aligning services with varying levels of clinical complexity and resource intensity (appendix pp 67–70), and ensure patients receive care appropriate to their needs while avoiding unnecessary strain on higher-level facilities.

India's NCG provides a notable example. The model organises cancer services into three levels: level 1 (comprehensive cancer centres), level 2 (cancer centres), and level 3 (cancer units).[128] By distributing services across a national network, the Grid alleviates pressure on central hospitals and enhances access across regions. Nonetheless, maintaining consistent service quality and ensuring seamless communication between hub-and-spoke facilities remain important challenges. To optimise patient flow between tiers and service efficiency, prioritisation frameworks are also essential. Systems that classify patients by urgency (eg, emergency, priority, and routine), and dynamically redistribute referrals based on hospital capacity help make managing service demand more equitable and reduce delays.[129]

Geographical distribution of cancer services substantially influences efficient, equitable, responsive, and accessible service provision. Geographical information system (GIS) modelling is used to match radiotherapy services to cancer burden and identify service gaps to inform equitable positioning of cancer care facilities—an approach highly applicable across Commonwealth countries to optimise access,[130] although care should be exercised as GIS data might be scarce for Indigenous and minoritised populations (appendix pp 67–70). Adaptable health service planning model (appendix pp 67–70), which has been used in the UK to quantify consequences of on patient travel times, equity in access to services, patient outcomes, and hospital workload for different service design choices,[131] could also be used in the Commonwealth, given its considerable diversity in size, population density, and health-system structures.

The Commonwealth should establish regional collaborations of neighbouring nations to address service gaps, enable optimal usage of available infrastructure and capabilities for cancer services, and improve access to high-quality and timely cancer services. Such collaborations would be particularly beneficial for small and island states, where it might not be feasible to establish tertiary services with advanced high-cost technologies and capabilities. An example of this is the collaboration between various island nations in the Pacific, including those without a Commonwealth membership. These collaborations could be used for establishing regional referral pathways, workforce exchanges, specialist training, continuous professional development and shared use of high-cost technologies, such as radiotherapy, nuclear medicine, complex immunotherapy, and advanced imaging. Government mandates to ensure equitable access to specialist oncology services would help catalyse such initiatives.

As with regional collaborations, public–private partnerships involving co-investment to develop new facilities or strategic purchasing offer a further pragmatic solution for Commonwealth countries to improve access to cancer services and reduce delays in diagnosis and treatment.[132]

Section 10: Innovation

Despite the progress made in controlling cancer, we are still nowhere near addressing the scale and depth of burden it brings to humanity. However, despite the remarkable and accelerating pace of technological invention, real progress in the compelling need for cancer control is lacking in many parts of the world, and the Commonwealth is no exception. The diversity of the member states across the Commonwealth forms a microcosm of the global challenge of cancer control. This shared, lived experience provides an opportunity to build capacity for innovation-enabled cancer control programmes.

It is often said that "true creator is necessity, who is the mother of invention".[133] The preoccupation with the invention of a device or drug as the solution to the day's challenges emerged in the rise of the industrial revolution and the development of scientific capacity.[134] However, there is a distinction between invention and innovation with the former being the creation of something new (eg, device or drug) and the latter being the adoption of that new creation.[135]

Today's bewildering myriad of technological advances are not being incorporated into cancer control, and we must find a way to realise the promise of new discoveries (eg, diagnostic tests and drugs), technologies (eg, AI tools and imaging), and new approaches (eg, cancer networks) to reduce cancer burden and cost. This is more than closing the know–do gap—as knowledge of the local issues is crucial for developing locally effective cancer control that is both aligned with need and relevant to experienced disease burden.

A need-driven innovation ecosystem across the Commonwealth would be one that addresses, embraces, and leverages the diversity, history, and connectivity of the member states to control cancer. The Commonwealth is already rich with the key elements of a vibrant innovation ecosystem. With a population of 2·7 billion, the

56 member states represent a third of the world's population and are well represented in all levels of human development index—ranging from small developing island states to membership in the G7 (Section 3; table 1) with cancer control innovation capacity shown across Commonwealth countries.

Innovation ecosystems bring together actors, activities, and artifacts, and they link institutions and relations, including complementary and substitute relations to enable innovation performance of an actor or a population of actors.[136] In complex settings, such as health care and health systems, these innovations require a sound understanding of the local need to validate the problem and simultaneously appreciate the need for a pathway to adoption.[137]

The actors in cancer control innovation include individuals (eg, patients, providers, scientists, and technologists), organisations (eg, health-care service, non-governmental organisations, and not-for-profits), and governments (eg, local, regional, national, and international). They also include industry (eg, local, regional, and multinational firms) and agents (eg, philanthropy, marketing, advocacy, educators, and consultants). Activities related to innovation include research and development (eg, research investment, incentives, data capture, hypothesis generation, and prototyping), co-creation (eg, diverse actors, dialog and shared perspectives, problem identification and validation, and co-operative problem solving), innovation processes (eg, brainstorming, whiteboarding, problem challenging, and ideation), and innovation activities (eg, prototyping, fail-fast culture, and innovation skills development). Artifacts for innovation include knowledge and technology (eg, data, vaccines, drugs, imaging, AI tools and robotics), capital and resources (eg, budgets, facilities, and equipment), products and services (eg, diagnosis and treatment services, health insurance, rehabilitation, and supportive care), and platforms (eg, regulatory frameworks, accreditation, licensing, credentialling, identity management, and surveillance).

India's NCG is an excellent example of an innovation ecosystem that began as a voluntary network of oncology institutions and has since expanded its functional scope from consensus guideline development to pooled procurement, shared electronic medical records, and virtual tumour boards, linking centres across a geographically vast and resource-heterogeneous health system.[138] The NCG has established a hub-and-spokes model of tiered services that brings together a wide range of actors as an inclusive group of stakeholders, a broad set of innovative activities, ranging from research and development to translation of evidence-based guidelines to practice, and artefacts, such as integrated digital health data and disrupted traditional procurement approaches, to create better value for the participating institutions.[138]

Other examples of exemplar innovation ecosystems include Canada's Cancer Care Ontario, which supports a novel community-of-practice approach.[139] Numerous AI-inspired innovation ecosystems are being advanced across African Commonwealth nations in which technology hubs, education investments, and policy shifts are being integrated to create innovation capacity that is local.[140] For example, Rwanda's innovative deployment of a drone-based blood product delivery system, which started in 2016, now serves 20 health facilities across the country with 80 min faster delivery than routine care and a 67% reduction in blood product expiration rates.[141] Such innovations are now working their way into HICs with pilots in the UK, Canada, India, and Australia applied to medical supplies, including chemotherapy, with differential rates of adoption more related to local needs and operational contexts than technological or financial barriers.[142] These examples further illustrates the importance of local innovation capacity wherein local needs and priorities can drive forward creative, relevant solutions.

Drawing upon the existing literature, we identified six factors needed to stimulate innovation across the Commonwealth. First, a motivating challenge, where the scale and importance of cancer burden is shared across the Commonwealth. Second, incentives, with a need to see innovation as an investment by all cancer control actors. Failure to innovate will delay progress and undermine capacity to improve cancer control. Third, culture, creating an expectation that innovation is a means to advance all agendas. Fourth, innovation skill, as formulation of the problem, assessment of solutions, and plotting a pathway to impactful, durable change requires rigor and is crucial to assuring on-going investment. Fifth, tolerance of failure, as health care is intrinsically risk-adverse due to the impact of failure on human life. Innovation actors must create permissive environments to fail-fast and learn. Finally, connectivity, where interaction and challenging of status quo through connecting with other settings and across scales is a driver of innovation capacity.[143]

Impactful innovation requires investment and creating skills and a supportive ecosystem. As a collective, the member states of the Commonwealth are well positioned through the Commonwealth Secretariat to develop and stimulate a cancer control innovation ecosystem through linking and networking existing and emerging actors, activities, and artifacts. This ecosystem can be achieved through three interlinked strategic actions. First, support for an innovation ecosystem within NCCPs. An Office of Responsible Innovation should be established that works to address the six factors outlined above to enable ethical, transparent, and accessible innovation, with appropriate mechanisms for HTA (see Section 8). Reporting on the development of the innovation ecosystem should be routed through the Commonwealth Cancer Observatory. Included in this effort is the creation of the critical artifact of cancer control data through a cancer control data strategy. In addition, this Office would assure the communication, education and engagement of innovation ecosystem

actors. This includes patient/population access to clinical research programmes and growing the societal awareness of need, importance, and opportunity of innovation to positively impact cancer control.

Second, integrate and support innovation capacity within NCCPs. Realising the promise of an innovation-enabled CCP requires moving beyond theory, strategy, and skills—it needs to be embraced by the operational elements of the CCP. Active innovation ecosystems include a dynamic among actors, activities, and artifacts. Key innovation skills include context-specific solutioning and development of intrapreneurial capacity that is only possible if innovation is occurring within CCPs. Combining deep understanding of the problem set and appropriate incentives that operate within guiderails creates environments that are permissive of a data-driven fail-fast culture.

Finally, build and foster a commonwealth-wide network for innovation ecosystem development. Existing assets for innovation and data-driven perspectives on the needs for advances in cancer control across the Commonwealth need to be mapped, linked, and classified in terms of the existing engagements and their future contributions towards a dynamic innovation-enabling network for advances in cancer control. This is a critical step for establishing the Commonwealth Cancer Control Innovation Network (C3IN).

Existing actors, activities, and artifacts from within countries, across industries, and among Commonwealth member states will form the basis of the C3IN. By exchanging best practices in innovation skill (eg, educational programmes, methods, and talent) and driving engagement at all levels (local, regional, national, and international), a rich network to stimulate innovation ecosystems within and across the Commonwealth will be established.

An example of one such innovation ecosystem is digitally enabled cancer control—a rapidly evolving innovation frontier—and is an obvious area where the Commonwealth can help shape hype to real impact. The capability to digitise, transmit, store, analyse, and visualise data of every form is enabled through advances in physics, mathematics, and engineering. We are at the very beginning of this transformation and its full capacity to contribute to the cancer control agenda is largely untapped. Furthermore, the pace of technological change is accelerating as illustrated through recent advances in AI, which clearly show that some of the most complex of human endeavours in medicine can be remarkably well replicated.[144]

There are many tangible examples of digitally enabled transformation in the Commonwealth. For example, rather than using AI tools to interpret immunohistochemical pathology slides, completely new approaches that leverage AI to extract similar data from the morphology of histology slides are being explored.[145] Digital connectivity through chat platforms augmented with LLMs are creating multilingual provider mimics that can augment skilled professions and provide on-going interaction and engagement in health-care management.[146] Use of agentic AI could help address multiple issues, including shortages in health professionals, access to services, participation in prevention, provision of telehealth and telegenetic services, follow-up for better outcomes, and the costs for remote populations, as well as issues of privacy in seeking assistance in person; but these technologies should be available equitably.

When noting the potential benefits of AI use potential risks should also be carefully evaluated and addressed when deploying AI solutions to ensure safety, effectiveness, and appropriateness, not undermine equity, as AI mediated inequity can be reinforcing as articulated in the Recursive Care Law—"unequal care produces unequal data, unequal data lead to unequal model development, and unequal model performance further augments unequal care."[147] Hence, generation of local and regional data and local innovation capacity is of critical importance for the development of AI technologies that will be non-biased and effective.

Development of locally validated intelligence sources (eg, foundation models and predictors or classifiers) that are based on data relevant to the (local) context in which it is to be applied needs investment and support. Importing intelligence from foreign settings (ie, hyperscaler frontier and electronic health record vendor models), based on foreign problems (eg, alternative practices, behaviours, and values), and foreign data (eg, genomics dominated by European ancestry) will constrain local benefit of AI technologies.

Advances in automation and human–machine interaction have the potential to reshape cancer control and not just augment the current practices. Realising this potential requires real innovation capacity to focus on need and challenge the status quo.

Section 11: Patient and public engagement

Patient and public engagement is a cornerstone of delivering high-quality care, is crucial for inclusive governance and policy making, and is a cross-cutting priority for cancer control. By incorporating patient voices throughout the care journey, including survivorship, health systems are fostering a more holistic and inclusive approach to treatment and recovery. Patient engagement requires active involvement of patients at every stage of their health-care journey, from initial diagnosis to survivorship. Understanding and integrating patient perspectives not only helps to personalise care plans, ensuring that treatment and care align with the unique needs and preferences of individuals, but also improves treatment adherence and satisfaction. Although the role and benefits of patient and public engagement in cancer control are well established, it has been challenging to secure sustainable financing for patient

and civil society organisations from independent sources, with the risk of these organisations being influenced by funders that promote their own agendas.

Patient advocacy empowers individuals and communities to inform and influence cancer care policies, shape research, improve access to care, promote patient-centred approaches to care, and help reduce care disparities. Although patient advocacy is increasing in the Commonwealth (appendix pp 71–72), it varies greatly among countries, and there is no overarching Commonwealth-wide system to increase engagement

Shared decision making in cancer care is another growing and important area for patient involvement in cancer control. Although not well established or successfully implemented across most countries in the Commonwealth, even in well resourced settings,[148] several good examples of shared decision making exist in the Commonwealth, where digital tools are being used to increase patient engagement across the care continuum (appendix pp 72–77), with opportunity for expansion of similar initiatives across member states. However, shared decision making is inherently complex and successful implementation culturally dependent, and requires training of stakeholders involved, including clinicians. There is an opportunity to learn from paediatric oncology, where family-centred decision making is often more developed out of necessity (appendix pp 72–77).

Patient navigation for cancer control—evidence-informed effective interventions to assist patients with cancer to overcome barriers in accessing health care and social services[149]—is another area that is highly cost-effective and leads to higher treatment completion rate, improved quality of care, patient satisfaction, dignity, and outcomes.[150] The navigation continuum ranges from education and outreach, screening, diagnosis and staging, treatment, and survivorship to end-of-life care and is shown to increase cancer screening participation, reduce both diagnostic and treatment initiation time intervals, and improve patient satisfaction and quality of life in survivorship and palliative care settings.[151] Many Commonwealth countries, including in LMICs, have successful examples of patient navigation services cancer—some emerging, others well established (appendix pp 72–77).

Peer support systems, often referred to as buddy systems, are a further novel approach enabling patient engagement in decision making and have proved invaluable in enhancing patient care (appendix p 77). By connecting patients with peers who have undergone similar experiences, these networks provide emotional and practical support. Peer systems foster a sense of community, reduce feelings of isolation, and empower patients to navigate their health-care journeys with confidence. For example, a cancer survivor paired with a newly diagnosed patient can offer insights, encouragement, and a firsthand understanding of what to expect. Peer support improves mental health outcomes and coping mechanisms during treatment and recovery phases.[152] Buddy systems show the benefits of formalised peer networks in improving resilience and providing crucial support after adverse health-care events.[153]

Buddy systems also enhance patient engagement beyond recovery, helping patients stay connected with their caregivers for follow-up care. Survivors often face long-term physical, emotional, and social challenges, which can be better managed through continued support and involvement in care decisions (appendix p 77). By keeping patients engaged and informed about available resources, the system facilitates smoother transitions to post-treatment life. A successful survivorship plan not only addresses follow-up medical care but also emphasises the importance of mental health, social reintegration, and lifestyle adjustments—areas where peer networks and buddy systems can play a pivotal role. Peer networks are important in chronic disease management and mental health support, making them vital for survivorship care.[154] Advances in digital technologies have created new possibilities for scalable peer support systems, enabling survivors to connect with broader communities.[155]

We propose four actions related to patient and public engagement in the Commonwealth. First, institutionalise patient and civil society representation in cancer policy making at national and sub-national levels mandated through NCCP governance arrangements to ensure legitimate advocacy. Second, embed shared decision making as a standard of care in oncology, by incorporating it in national clinical guidelines supported by cultural adaptation and for use in training for oncology, primary care, and palliative care teams. Third, establish cancer patient navigation as an essential element of cancer services across diagnosis, treatment, survivorship, and palliative care. Finally, integrate structured peer support and buddy programmes as a standard component of psychosocial and survivorship care for cancer.

Section 12: Education and professional development

Challenges the oncology workforce faces across the Commonwealth span pre-service education, recruitment, retention, and skill-mix, with the shortages, accreditation gaps, and retention pressures documented in Section 9 compounding one another across career stages. Hence, education and development must address preservice education, recruitment and retention, and continuing professional development of health professions and health literacy of all stakeholders involved in cancer control. Quantifying the scale of this challenge is constrained by the absence of a reliable, comparable Commonwealth-wide workforce data.

The high burden of cancer and complexity of cancer care require well informed and educated stakeholders, including patients, health professionals, and the public. However, cancer education has been traditionally linked

to teaching health professionals for cancer care and education for patients has been confined to a so-called need-to-know basis when participating in on-going care.

Transition to community-based services; person-centred care; self-management; and increasing involvement of health professions (beyond cancer specialists), patients, caregivers, and patient support organisations at all stages of the care continuum necessitates a shift in education that must be integrated within comprehensive cancer control.

Health literacy,[156] the ability to acquire, internalise and use information to make appropriate decisions about one's own health care or of cared ones is vital for shared decision making and is at the heart of this shift. However, this transition requires an understanding of the disease, of health care, and of the health system.

Health literacy of people living with cancer and their carers helps to improve their understanding of the illness, participation in cancer screenings, and adherence to complex multimodal therapies.[157,158] Suboptimal health literacy widens health disparities and adversely affects social determinants of health,[159] with delays in presentation, and is an independent risk factor for poor cancer outcomes.[160]

Public education underpins health literacy that helps to improve success of prevention initiatives aimed at risk reduction (eg, tobacco use) and vaccine uptake (eg, HPV), participation in population-based screening programmes, awareness of early symptoms of cancer, early detection, effectiveness of treatment, and defeating the stigma of cancer. Health literacy should not be confined to an understanding of disease but also familiarity of health system, shared decision making, and the optimal ways to facilitate interaction between patients, and public and health professions (appendix pp 78–80).

Raising the level of population health literacy should be a priority for Commonwealth policy makers, with a holistic, multisectoral, whole-of-government approach incorporated in NCCPs that meets the information needs of cancer patients, carers, and public.

Continuing professional education and development (CPD) for health professionals is necessary for staying current with growing contemporary evidence on cancer control to ensure patients receive appropriate care. CPD helps to improve professional practice and outcomes across different clinical areas.[161,162] However, although CPD is well established, systematic, and resourced in Commonwealth HICs, such as Australia, Canada, New Zealand, and the UK, this is not the case in most LMICs that lack the necessary structures, funding, capacity, accreditation mechanisms, and incentives.

A Commonwealth-wide in-service CPD programme for health professionals involved in cancer control that is digitally enabled and appropriately accredited is feasible and would yield substantial benefits. The design and development of such a CPD programme should be inclusive, incorporating a diverse group of stakeholders and views. As with CPD, Commonwealth-wide harmonised, adaptable, and shared curricula could be developed for education, training, and competence development of health professions involved in cancer control, starting at university and continuing into higher training, involving existing training linkages, Commonwealth-wide associations, and royal colleges.

The importance of health literacy in improving cancer control and outcomes and consequences of low health literacy in widening disparities is well documented. The Commonwealth should develop an initiative for improving health literacy across the life course with incorporation in NCCPs, alignment with national education strategies, and involvement of public and patients in design, development, and delivery.

Although digital and social media offer major opportunities for development and dissemination of cancer health information at scale, appropriate guardrails, such as algorithms with strict response rules to cancer-related queries, should be put in place to prevent misinformation that might harm patients with cancer or negatively impact their health care. Commonwealth-wide digital and social media efforts should be augmented with support and expansion of local mechanisms to provide adult education, and culturally and linguistically appropriate health information services in the community.

To improve population health literacy, education, and CPD of health professions involved in cancer control, the Commonwealth should: first, embed cancer health literacy across the life course and health systems by mandating its inclusion in school curricula, adult education, NCCPs, and digital communication strategies, with co-designed, culturally and linguistically appropriate materials, and safeguard against online misinformation; second, establish a Commonwealth-wide architecture for oncology education and CPD by creating harmonised, adaptable core curricula and an accredited, digitally enabled platform for all health professionals involved in cancer control, with protected time and incentives to ensure uptake in LMICS; and, finally, support research to understand which interventions work, where they work, and how, to inform the development of context-sensitive interventions.

Section 13: Robust data systems and comprehensive national cancer control plans

Timely, quality, and representative cancer data are important for health agenda setting, policy development, creation of NCCPs, appropriate service delivery, and cancer research. Disaggregation of key cancer measures (eg, incidence, mortality, and survival) by disease site and by sociodemographic variables yields important information about cancer needs among specific population groups. Data disaggregation is also crucial for understanding cancer inequities, developing targeted

policy responses, monitoring progress, and holding decision makers accountable.

These data should be used to inform the development of national cancer control plans in Commonwealth countries. These plans should include routine, standardised collection and public reporting of disaggregated cancer data (at minimum by ethnicity, indigeneity, geography, migration status, and socioeconomic position), governed by Indigenous data-sovereignty and community-ownership principles; and explicit anti-racism and inclusion targets in medical education, and oncology workforce recruitment and leadership, with accountability mechanisms and earmarked funding.

India's NCG is a good example of how new data have been collected at scale and used to inform policy and practice where a shared electronic health record and virtual tumour board platform has extended standardised, multidisciplinary decision making to patients treated at resource-limited member hospitals, and data used to crate pooled procurement to achieve better prices for cancer medicines.[138]

Data from population-based cancer registries have been used to estimate 5-year net survival in Commonwealth countries and to show wide variation.[29] Similarly, national health accounts have been used in this Commission to estimate health expenditures for cancer in the Commonwealth for the first time, whereas national accounts have been used to estimate the broader economic contribution of investing in cancer through the health economy.

There is, hence, an imperative for high quality and comprehensive data for cancer in the Commonwealth countries. The establishment of a mechanism for high quality and comprehensive data for cancer in the Commonwealth should start by defining a core harmonised data set that is aligned with internationally adopted indicators. The core data set should be accompanied by a Commonwealth-wide mechanism for regular collection and analysis of these data.

The core data set should include regular epidemiological indicators (eg, incidence, stage of presentation, survival, and mortality) derived directly from population-based cancer registry data, where available. The core dataset should also include regular data on financing and non-financial resources for cancer control (eg, human resources and infrastructure—particularly on laboratory services, imaging diagnostics, surgery, radiotherapy, nuclear medicine, chemotherapy, and health-care networks), screening coverage, health service usage, quality of services, and, among others, costs and outcomes of interventions.

In addition to population-based cancer registries, the Commonwealth should develop annual health expenditure and investment surveys, underpinned by national health accounts approach to ensure consistency of data. These surveys will help ascertain levels of financing for cancer control from domestic public, private, and not-for-profit entities, as well as international sources (for example, Official Development Assistance). These surveys will help reveal how the finances are allocated, inform the assessment of adequacy, equity, and allocative efficiency of funding, and guide future investment decisions. The comprehensive data set should incorporate data for Indigenous populations while upholding their data sovereignty (appendix p 81).

As part of this Commission, the Health Systems Innovation Lab at Harvard University has built a Commonwealth Observatory for Health Systems and Cancer Control. The Observatory brings together data on around 1000 variables related to health systems and cancer control in the Commonwealth, including essential contextual data on countries (demographic, epidemiological, and economic), analysis of NCCPs and information on analytic outputs generated by the Commission. The variables include, among others, modelled incidence data, modelled survival data, health expenditures for cancer, fiscal space for cancer, data on infrastructure (diagnostic imaging [CT and mammography], treatment [radiation oncology and surgery], and provider facilities [hospitals]), cancer-related research funding, research outputs, research networks, cost of scale up of cancer control, health and economic benefits and return on investment with scale-up, and broader economic benefits of investment in cancer. The Observatory will also include observed incidence and

For more on the **Harvard University Health Systems Innovation Lab** see https://hsph.harvard.edu/research/health-systems-innovation-lab/

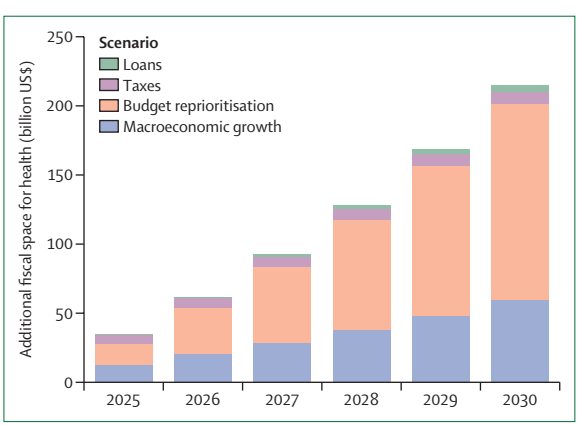


Figure 11: **Additional fiscal space for health from 2025–30**

	2025	2026	2027	2028	2029	2030
Macroeconomic growth	12·7	20·5	28·9	38·2	48·4	59·7
Budget reprioritisation	15·4	33·5	54·6	79·2	108·0	141·7
Loans	0·6	1·2	2·0	2·8	3·8	5·0
Taxes	6·2	6·7	7·2	7·8	8·4	8·6

Estimates are derived from deterministic scenario projections and therefore do not have associated uncertainty intervals.

Table 7: **Total additional fiscal space for health, by scenario and year (US$ billions) in 38 Commonwealth low-income and middle-income countries**

survival indicators from population-based cancer registries where available.

The Commonwealth Observatory for Health Systems and Cancer Control has an easily navigable user interface, and the data indicators can be used interactively to benchmark and compare countries for the variables presented. The Observatory also includes an interactive policy module where it is possible to analyse in detail comprehensiveness of NCCPs for countries where they are available to identify gaps to inform new iterations. Future development of the Observatory will incorporate AI-enabled tools that will enable rapid development of country-specific plans that consider contextual factors, cancer epidemiology, and health-system characteristics for each country. The Commonwealth can use these tools and resources to inform data-driven cancer control.

Section 14: Expanding fiscal space to invest in cancer control

New funds will be needed to invest in the priority areas identified by this Commission Uncertain geopolitical environment, declining Official Development Assistance, slow economic growth, and high levels of sovereign debt create an imperative for Commonwealth countries to identify new sources of sustainable domestic financing to create fiscal space for investments in health and cancer control. However, many potential sources of funding exist, including novel innovative financing approaches using diaspora remittances

To identify new sources of financing we conducted a scenario-based modelling analysis for 38 LMICs in the Commonwealth to estimate additional domestic fiscal space for health from 2025 to 2030 that could be mobilised through concerted policy action. Detailed methods are presented in the appendix (pp 82–84), with an elaboration on their limitations.

Using country-level data from internationally comparable datasets, we projected government health spending under four counterfactual policy scenarios: (1) macroeconomic growth maintaining current health-spending shares of GDP; (2) increased prioritisation of health within government budgets (which would be challenging in practice as it would require reallocation from other sectors and politically difficult); (3) higher excise taxes on tobacco, alcohol, and sugar-sweetened beverages; and (4) expanded borrowing based on countries' income and credit-rating profiles. For each scenario, we applied quantitative targets grounded in empirical benchmarks and constrained annual changes for plausibility. Outputs include total, per-capita, and relative increases compared with 2022 health spending levels.

Across the 38 Commonwealth LMICs included in the analysis, the total additional fiscal space for new investments in cancer control across all scenarios rose from US$38·6 billion in 2025 to $224·5 billion in 2030 (figure 11).

Cumulatively, Commonwealth LMICs could mobilise $701·1 billion in additional domestic resources for health between 2025 and 2030 (table 7). Budget reprioritisation generated the largest cumulative gains ($432·2 billion; 61·6% of the total), followed by macroeconomic growth ($208·5 billion [29·7%]). In contrast, increases from taxes ($45·0 billion; 6·4%) and loans ($15·4 billion; 2·2%) were comparatively modest (table 7).

Potentially available per-capita additional fiscal space increased over time across all World Bank country income groups (figure 12) Under macroeconomic growth, median per-capita gains rose steadily between 2025 and 2030, ranging from US$7·0 (interquartile range [IQR] 6·4–10·8) in LICs to $117·5 (96·0–193·6) in UMICs by 2030 (appendix p 85). Budget reprioritisation generated comparable or larger gains, particularly in middle-income countries (MICs), reaching a median of $41·1 (34·3–56·5) in LMICs and $121·1 (99·9–195·1) in UMICs by 2030 (appendix p 85).

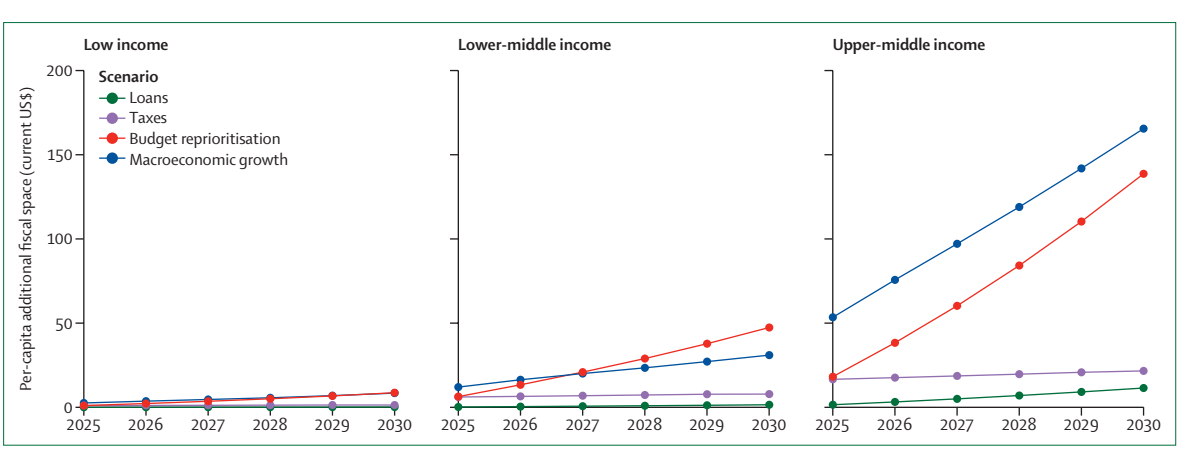


Figure 12: **Mean per capita additional fiscal space for health, 2025–30, by scenario (macroeconomic growth, budget reprioritisation, taxes, and loans) and country income group**

Panel: Proposed actions for transforming cancer control in the Commonwealth

Action 1: By 2028 establish Commonwealth Data Observatory for Health Systems and Cancer Control to inform data-driven policy and practice:

1 Create a responsible office, programme or organisation for cancer control in each country
2 Develop Commonwealth-wide data systems for cancer control, with mechanisms and harmonised tools for regular collection and analysis of data for an agreed set of core indicators
3 Establish Commonwealth-wide support to each country to develop or join a population-based cancer registry
4 Develop comprehensive and data driven NCCPs for each Commonwealth country using Commonwealth Data Observatory and AI tools developed by the Commission
5 Create Commonwealth support networks and enabling tools for the development of comprehensive, data-driven national cancer control plans with regular monitoring and evaluation of results

Action 2: By 2030, develop and implement targeted policies for improved access to affordable, high-quality cancer technologies by:

1 Establishing a Commonwealth-wide and country, as per table 8, pooled procurement mechanism to negotiate better pricing for cancer medicines, vaccines, diagnostics and health technologies to help improve accessibility and affordability
2 Creating a streamlined, Commonwealth-adapted HTA platform for cancer technologies, with the establishment of a shared HTA tool and technical support hub that integrates regulatory approval, rapid economic and ethical appraisal, and real-world outcome monitoring for drugs, devices, diagnostics, and AI, and link HTA decisions to transparent pricing, procurement, and long-term budgeting
3 Developing a price transparency platform, supported by the Commonwealth Secretariat and WHO, that integrates available pricing data to achieve greater value for medicines, devices, diagnostics and health technologies, and increase efficiency in the health systems
4 Launching an interactive fiscal sustainability tool that enables countries to analyse options for creating fiscal space with pros and cons, technical feasibility and political acceptability
5 Centring equity as a guiding principle—particularly for Indigenous peoples and underserved groups—in policy design, financing, service delivery, and research governance

Action 3: By 2028, establish a Commonwealth-wide taskforce to develop shared frameworks and procedures to transform care delivery for cancer to:

1 Improve quality of care by establishing a Commonwealth-aligned accreditation and training standards for the oncology workforce—mandating national regulatory bodies to adopt regionally harmonised accreditation, revalidation, and continuous professional development standards for oncology professionals, supported by shared training hubs and incentives to retain staff in LMICs and underserved areas
2 Strengthen cancer quality governance by establishing core set of quality indicators and routine clinical audit, by requiring every Commonwealth country to implement a core set of cancer quality indicators with regular, risk-adjusted clinical audits that inform public reporting, guideline adaptation, and targeted quality-improvement programmes
3 Ensure equitable access to care by embedding equity, indigenous data sovereignty, and anti-racism into cancer governance and evidence systems, and by funding community-led, culturally safe models of cancer care and financial protection for underserved populations
4 Optimise delivery of cancer services by designing national cancer networks using tiered hub-and-spoke models designed using formal data-driven tools and incorporate cancer service configuration into NCCPs
5 Create regional Commonwealth Cancer Service Compacts that designate cross-border hubs for high-cost, low-volume services and enable regulated public–private purchasing through standardised service-level agreements specifying tariffs, quality indicators, workforce-training and technology-transfer obligation
6 Foster public–private collaboration for investing and operating high-cost oncology infrastructure and services

Action 4: By 2028 create a Commonwealth Office of Responsible Innovation to:

1 Foster the development of an ecosystem for innovation in cancer control by creating a favourable environment for knowledge generation, research and development, investment, adoption and growth of innovation
2 Build and foster Commonwealth Cancer Control Innovation Network (C3IN) by bringing together existing actors, activities, and artifacts from within countries, across industries, and among Commonwealth member states
3 Integrate and support research and development and innovation capacity within cancer control programmes

Action 5: By 2028, institutionalise patient and public engagement in cancer control

1 Develop Commonwealth-wide principles and frameworks to institutionalise patient and civil society representation in cancer policymaking at national and sub-national levels mandated through NCCP governance arrangements
2 Embed shared decision making as a standard of care in oncology by incorporating in culturally adapted national clinical guidelines and in training for health professionals involved in cancer control

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3 Establish cancer patient navigation and peer support as essential elements of cancer services across the care continuum

Action 6: By 2030, establish Commonwealth-wide principles and resources for shared education and professional development

1 Embed cancer health literacy across the life course and health system by mandating inclusion in education and training curricula

2 Establish Commonwealth-wide digitally enabled platform for oncology education and continuing professional development with accredited, stakeholder-informed, and adaptable core curricula

In contrast, taxes and loans contributed substantially smaller per-capita increases across all income groups. Median per-capita gains from taxes remained below US$2 in LICs and below $6 in LMICs by 2030, whereas loans produced negligible increases in LICs and modest gains elsewhere (appendix pp 85–91). Country-specific values by scenario and year for overall amounts and per capita amounts can be found in the appendix (pp 86–91, 92–97).

The analysis indicates the availability of substantial amounts of new sources of domestic financing that could be mobilised under the scenarios examined. The total additional fiscal space of US$701·1 billion that could be mobilised in 2025–30 compares favourably with the incremental cost of comprehensive scale up across the Commonwealth over the 10-year period, which amounts to $36·73 billion (IQR 25·46–48·65) and can be comfortably covered in full with the additional fiscal space created.

The analysis findings should be used by Commonwealth countries to develop realistic budgets for NCCPs and consider funding allocations to each of the priority areas identified in Sections 8–12. The new funds available could also be used to establish a Commonwealth-wide financing facility for cancer to finance the Commonwealth Secretariat actions to coordinate priority investments in cancer control.

Section 15: Actions for transforming cancer control in the Commonwealth

The rising burden of cancer and its suboptimal management presents a major challenge for Commonwealth countries. Between 2025 and 2030, there will be 16·3 million predicted deaths from cancer. By contrast, with comprehensive scale-up of treatment, imaging diagnostics and quality care 5·8 million cancer deaths would be averted, the number of deaths would decline to 10·5 million, and the number of life-years would increase by 113 million from a baseline of 151·2 million to 264·2 million.

The incremental cost of comprehensive scale-up between 2025–35 across the Commonwealth would amount to US$36·73 billion, which could be met by $701·1 billion in additional fiscal space that could be mobilised in 2025–30. Incremental benefits of $139·62 billion—using human capital approach—and $793·13 billion—using a full-income approach. In addition, the GVA of health expenditures for cancer control amounted to $82·9 billion in 2022 alone.

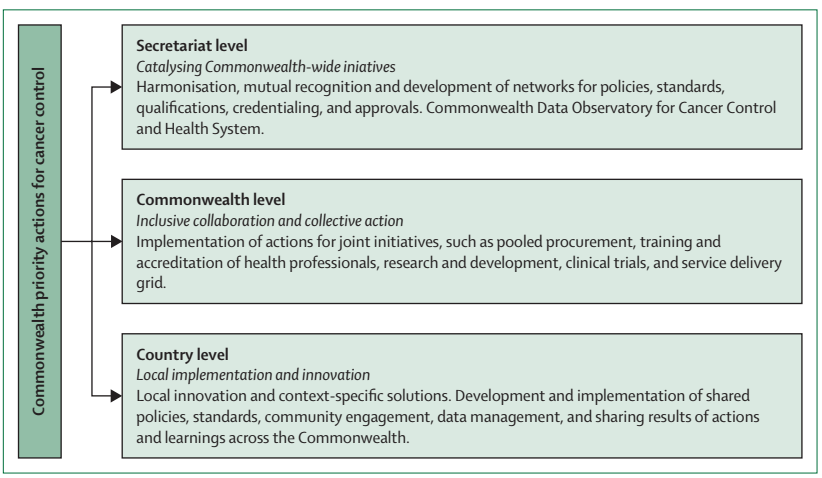


Figure 13: **Three-level action model in Commonwealth for integrated approach to cancer control**

There is a moral, population health, and economic imperative for urgent action. Investment in cancer control will contribute to economic resilience of the Commonwealth. However, harnessing these benefits will depend on concerted cross-cutting government action throughout the Commonwealth to address determinants of health and the six priority areas, namely: (1) targeted policies for improved access to affordable, high-quality cancer technologies; (2) transforming care delivery; (3) innovation; (4) patient engagement; (5) education and professional development; and (6) robust data systems and comprehensive NCCPs.

We propose a set of six actions in relation to each priority area with targets, starting with the cross-cutting issue of availability of timely and reliable data that are crucial for informing the development of NCCPs, policies and practice (panel). These actions are being advanced through a cancer lens, but will help strengthen the broader health system.

In its action points, the Commission recommends the creation of 10 new tools and entities that would require

collective funding: a Commonwealth Data Observatory for Health Systems and Cancer Control to inform data-driven policy and practice (Action 1); Commonwealth support networks and enabling tools for the development of population based registries (Action 1.2) and comprehensive, data-drive national cancer control plans (Action 1.3); a shared HTA tool and technical support hub that provides a streamlined, Commonwealth-adapted HTA platform for cancer technologies (Action 2.2); an interactive fiscal sustainability tool that enables countries to analyse options for creating fiscal space (Action 2.4); a Commonwealth-aligned accreditation and training standards for the oncology workforce to improve quality of care (Action 3.1); regional Commonwealth Cancer Service Compacts (Action 3.5); a C3IN (Action 4.2); Commonwealth-wide principles and frameworks to institutionalise patient and civil society representation (Action 5.1); and Commonwealth-wide digitally enabled platforms and accredited adaptable core curricula for oncology education and continuing professional development (Action 6.2).

Implementation of these actions will follow different pathways but typically consist of a demonstration phase of 1–2 years in the near-term in two to three selected countries for lesson learning, identification of capabilities needed and establishment of implementation playbooks, followed by expansion in the medium-term (over a period of 3–6 years) to a larger number of countries with appropriate resourcing and development of necessary capabilities, and finally full scale-up in the longer-term (7–10 years). These actions will benefit from and build on existing mechanisms and initiatives. For example, pooled procurement (Section 8) building outward from the existing Caribbean and Organisation of Eastern Caribbean States and PAHO strategic fund models and the Voluntary Information and Price Sharing Database toward a Commonwealth-wide mechanism, phased by a small group of volunteer countries before wider expansion; shared data platforms (Section 13) building on the Commonwealth Observatory for Health Systems and Cancer Control developed for the Commission as a near-term foundation, with population-based registry expansion as a medium-term goal; workforce development networks (Sections 9 and 12) building on existing regional training hubs (eg, the Pacific Islands surgical training partnership and the NCG) as near-term models for scaling; and HTA collaboration (Section 8) beginning with a shared technical resource and adaptive-HTA hub for countries lacking capacity before progressing toward a fuller shared appraisal mechanism.

To implement the priority actions identified we propose a three-level action model—Secretariat, Commonwealth bodies, and member countries—to develop an integrated approach and implement the proposed actions identified

	Expected outcome	Lead implementation actor(s)	Timeline
Action 1: establish Commonwealth Data Observatory for Health Systems and Cancer Control	Comprehensive, comparable, real-time cancer control data available across the Commonwealth, driving evidence-based NCCPs and monitoring	Country: national cancer office, population-based registries, and data-driven NCCPs; Commonwealth: harmonised data systems, core indicators, and support networks; Secretariat: hosts data observatory and AI tools	By 2028
Action 2: improve access to affordable, high-quality cancer technologies	Improved and equitable access to affordable cancer medicines, vaccines, diagnostics, and technologies, underpinned by transparent pricing, HTA-informed decisions, and sustainable financing	Country: adopts pooled procurement and HTA outputs, and embeds equity in financing, delivery, and research policy; Commonwealth: shared HTA tool and fiscal-space analysis tool; Secretariat and WHO: pooled procurement mechanism, HTA hub, and price transparency platform for medicines, diagnostics, and devices	By 2030
Action 3: transform cancer care delivery through shared frameworks and procedures	Standardised, quality-assured, and equitably distributed cancer care delivery across Commonwealth health systems, with optimised service configuration	Country: national regulatory bodies implement accreditation and CPD standards, quality audit, and hub-and-spoke networks; Commonwealth: taskforce, shared frameworks, quality indicators, and cancer service compacts; Public–private partners: high-cost infrastructure investment and operation	By 2028
Action 4: create a Commonwealth Office of Responsible Innovation	A functioning, self-sustaining Commonwealth cancer innovation ecosystem that accelerates development and adoption of context-appropriate solutions	Country: builds national research and development and innovation capacity within cancer control programmes; Commonwealth: Cancer Control Innovation Network (C3IN) linking countries, industry, and academia; Secretariat: hosts Office of Responsible Innovation	By 2028
Action 5: institutionalise patient and public engagement in cancer control	Patients and civil society formally embedded as partners in cancer policy making, with shared decision making and navigation and peer support standard across the care continuum	Country: NCCP governance mandates patient and civil-society representation, and embeds shared decision making in guidelines and training; Commonwealth: shared principles and frameworks for patient engagement	By 2028
Action 6: establish shared education and professional development	A skilled, competent oncology workforce and a health-literate population, sustained through shared Commonwealth education and training infrastructure	Country: embeds cancer health literacy across education and training curricula; Commonwealth Secretariat: digitally enabled, accredited platform for oncology education and continuing professional education and development.	By 2030

AI=artificial intelligence. HTA=health-technology assessment. NCCP=national cancer control plan.

Table 8: **Priority actions, expected outcomes, lead implementation actors (individual member countries, Commonwealth-wide bodies, Commonwealth Secretariat, and WHO), and indicative timelines for implementing these actions**

in the priorities (figure 13). The model identifies clear, interlinked, and complementary roles—for the Commonwealth Secretariat to play a catalytic role to foster Commonwealth-wide initiatives for improved cancer control, for the Commonwealth collectively to ensure inclusive collaboration and collective action, and for individual countries to ensure development and implementation of local policies and innovation.

Proposed actions, expected outcomes, implementation actors, and indicative timelines are summarised in table 8.

Successful implementation of the proposed actions will result from effective political leadership at Secretariat, Commonwealth, and country levels. This implementation must be coupled with inclusive coalitions that will ensure active participation from all major stakeholders, including patients, civil society, health professionals, professional associations, researchers, funders, the private sector, and innovators. Commonwealth-wide tools and platforms will help create synergies among countries to expand equitable access to effective cancer control to harness major health and economic benefits across the Commonwealth.

The Commonwealth is uniquely positioned in the complex and turbulent geopolitical context to play a leadership role in addressing cancer in member states. By embracing a developmental lens, the Commonwealth can help reframe cancer not only as a health issue but also as a core development challenge that intersects with economic productivity, youth and gender equity, and fiscal sustainability, while providing opportunity to drive economic growth and resilience.

Failing to act would be not just a missed opportunity, but an abrogation of responsibility, leading to profound human and financial costs that are avoidable. Cancer control is not just a moral imperative but a strategic necessity and a critical ingredient for achieving a more democratic, equitable, and economically resilient common future for the Commonwealth.

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Contributors
The idea for the Commission was conceived by RA, DC (London, UK), ML, and Baroness Scotland. The Commission was chaired by RA, with MG and BS serving as co-Chairs. The Chair and co-Chairs provided overall strategic leadership, defined the scope and objectives of the Commission, oversaw methodological development, coordinated the working groups, and contributed substantively to drafting and revising the manuscript. RA wrote the first draft of the report, using input from working groups and research undertaken for the Commission, and modified the final version following comments from Commissioners and working groups. Commissioners provided intellectual leadership across thematic areas, participated in regular Commission meetings, contributed to conceptualisation and methodological refinement, guided interpretation of the evidence, proposed recommendations, and critically revised draft sections of the manuscript. The Commission established thematic working groups to conduct detailed analyses and develop evidence-informed recommendations. The Policy Working Group was led by RA and included Aminu Alem, CA, GB, Anna Folz, JG, AI, JI, SJ, Zain Memon, Mariam Mostafa, and Edward Thomas. The Care Delivery Working Group was led by BS and co-led by AAg, and included RB, Vikneswary Batumalai, CJ, KJ, MMu, Jonathan Noël, LR, Ramakrishnan Seshadri, SSu, and MYL. The Research, Development and Innovation Working Group was co-chaired by DJ and MGo, and included KC, CSP, MAC, LBD, AD, BME, and DR. The Education Working Group was co-chaired by MGo and IS, and included MGi, MYL, DS, YW, Hannah Simmonds, LW, Moses Alikali, and Olabiyi Olaniran. The Patient Engagement Working Group was led by BS and co-led by LW, and included ZB, LBD, AG, FK, CN, SSt, and ZT. RA, CR, Caleb Kumar, and Aminu Alem contributed to the development of the Commonwealth Data Observatory and Health Systems Visualizer. Working group leads coordinated evidence synthesis, supervised data collection and formal analyses, drafted core sections of the report, and integrated cross-cutting recommendations. Working group members contributed to literature review, data curation, formal analysis, interpretation of findings, preparation of tables and figures, and drafting of relevant sections. Collaborators included core research team, research collaborators, and research interns who contributed to specific analyses, provision and validation of datasets, and participated in Commission meetings. All authors contributed to writing and interpretation of the findings, critically revised the manuscript for important intellectual content, approved the final version for submission, and agree to be accountable for all aspects of the work.

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