



HEALTH SYSTEM CAPACITY FOR NONCOMMUNICABLE DISEASE MANAGEMENT

Introduction

Noncommunicable diseases (NCDs) – cardiovascular diseases (CVDs), diabetes, cancer and chronic respiratory diseases (CRDs) – are currently responsible for over 70% of global deaths. This burden is one of the major public health challenges facing all countries, regardless of their economic status. People with, or at risk of developing, NCDs require long-term care that is proactive, patient-centered, community-based and sustainable. Such care can be delivered equitably only through robust health systems founded on strong primary health care towards the attainment of universal health coverage (UHC).^{1,2}

WHO is monitoring country progress on strengthening national capacity to prevent and manage NCDs through the WHO NCD Country Capacity Survey (CCS). Information on national policies, resources and services related to NCD management was collected from all 194 WHO Member States as part of this survey.³ NCD CCS collected substantial data on health systems capacity and this snapshot will present the findings by World Bank income groups.⁴

¹ Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings. Geneva: World Health Organization; 2010.

² Global action plan for the prevention and control of noncommunicable diseases 2013-2020. Geneva: World Health Organization; 2013.

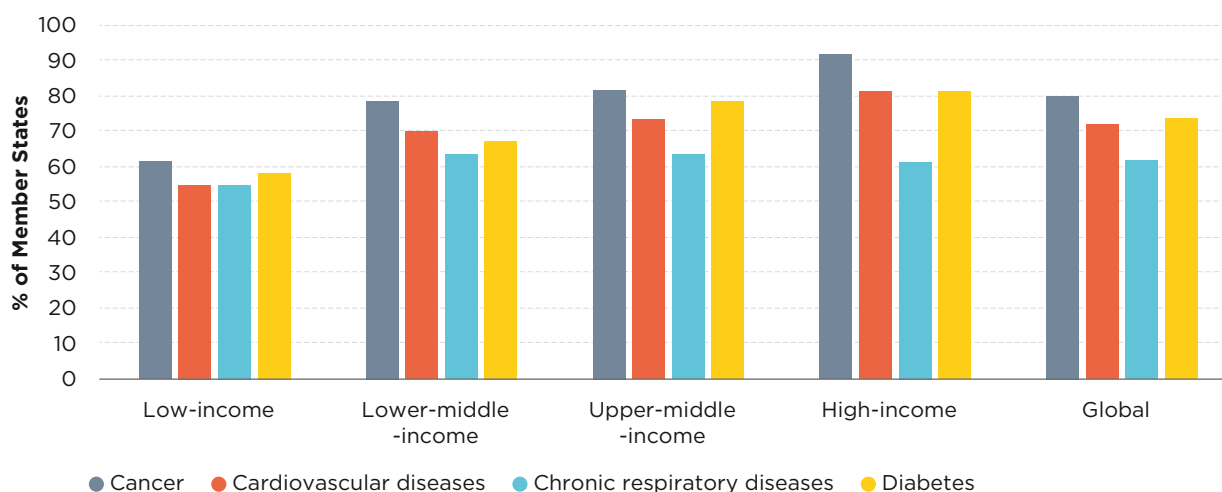
³ Assessing national capacity for the prevention and control of noncommunicable diseases: report of the 2019 global survey. Geneva: World Health Organization; 2020.

⁴ Full list of countries by World Bank income group is provided in Annex 2 of the NCD CCS 2019 report.

1. National policies, plans and resources for addressing major NCDs

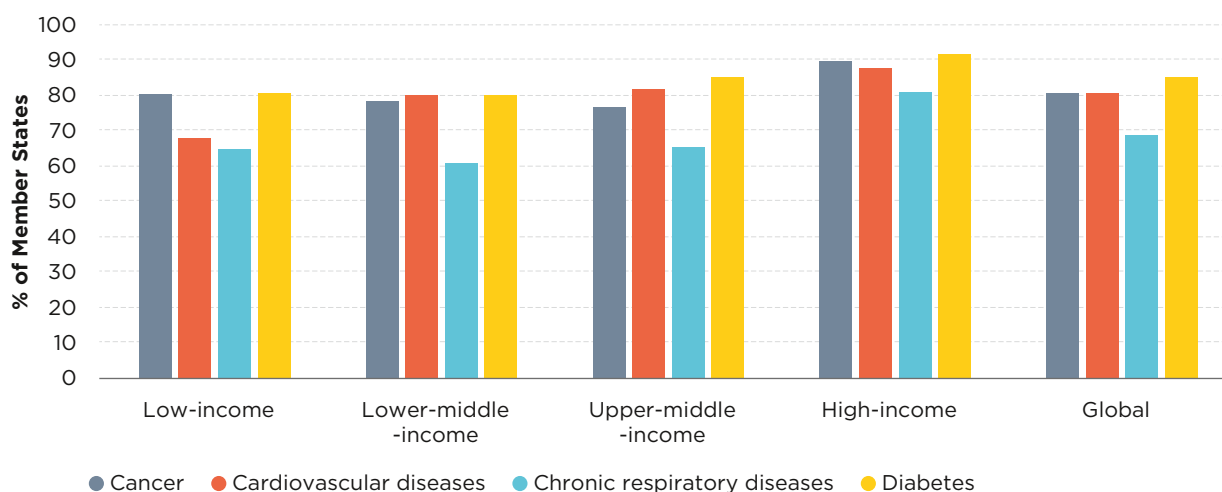
Most of premature mortality from NCDs are avoidable by enabling health systems to respond effectively and equitably to the health care needs of people with NCDs and establishing and strengthening multisectoral national policies and plans for the prevention and control of NCDs. Among the 4 main NCDs, national policies and plans for cancer, diabetes and CVDs were more broadly available and operational than CRDs in high- and middle-income countries. In low-income countries, policies for cancer were more widely available as compared to other NCDs (Figure 1).

Figure 1. Percentage of Member States with operational national NCD policies, strategies or action plans covering major NCDs and its operational status, by income group, 2019



Countries also reported having staff dedicated to three of the main NCDs: cancer, CVDs and diabetes. CRDs were least staffed across income groups, with 61% of lower-middle-income countries reported having dedicated staff (Figure 2).

Figure 2. Percentage of Member States with staff in the NCD unit, branch or department dedicating a significant proportion of their time to major NCDs, by income group, 2019

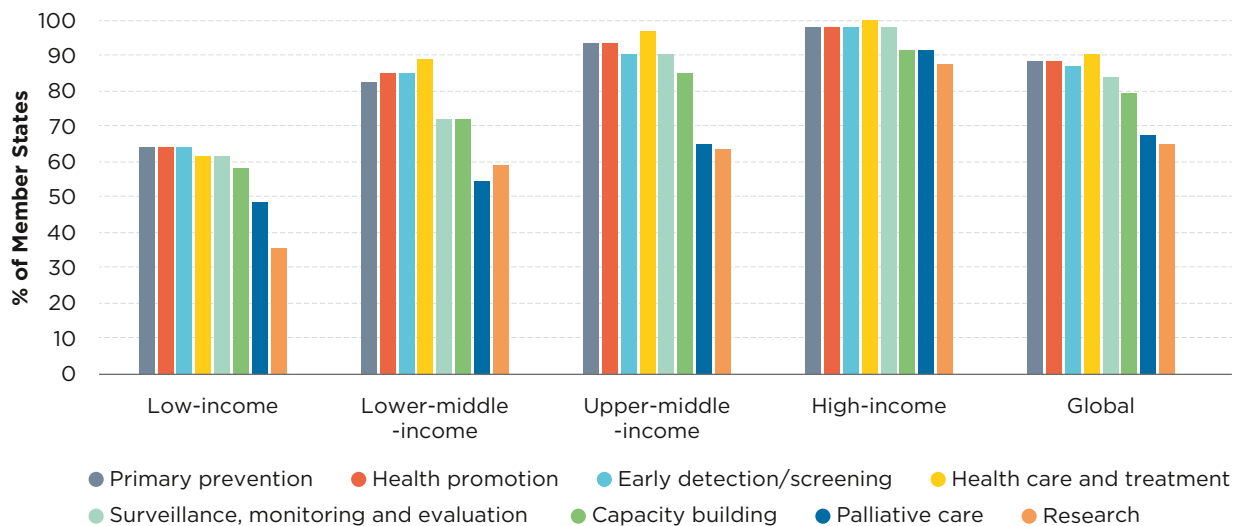


There is a wide gap in government funding allocation for NCD activities. Eight key NCD-related activities were considered for NCD prevention and management: primary prevention, health promotion, early detection/screening, health care and treatment, surveillance, capacity building, palliative care and research. Within the selected NCD activities, 90% of countries globally allocated funding for health care and treatment, followed by health promotion (88%), primary prevention (88%) and early detection/screening (87%). On the other hand, palliative care and research received least



assigned funds, from 68% and 65% of countries, respectively. Proportion of countries allocating funding for each NCD activity increased as income group goes up, with 100% of high-income countries reported having dedicated funding for health care and treatment as opposed to 61% in low-income countries (Figure 3).

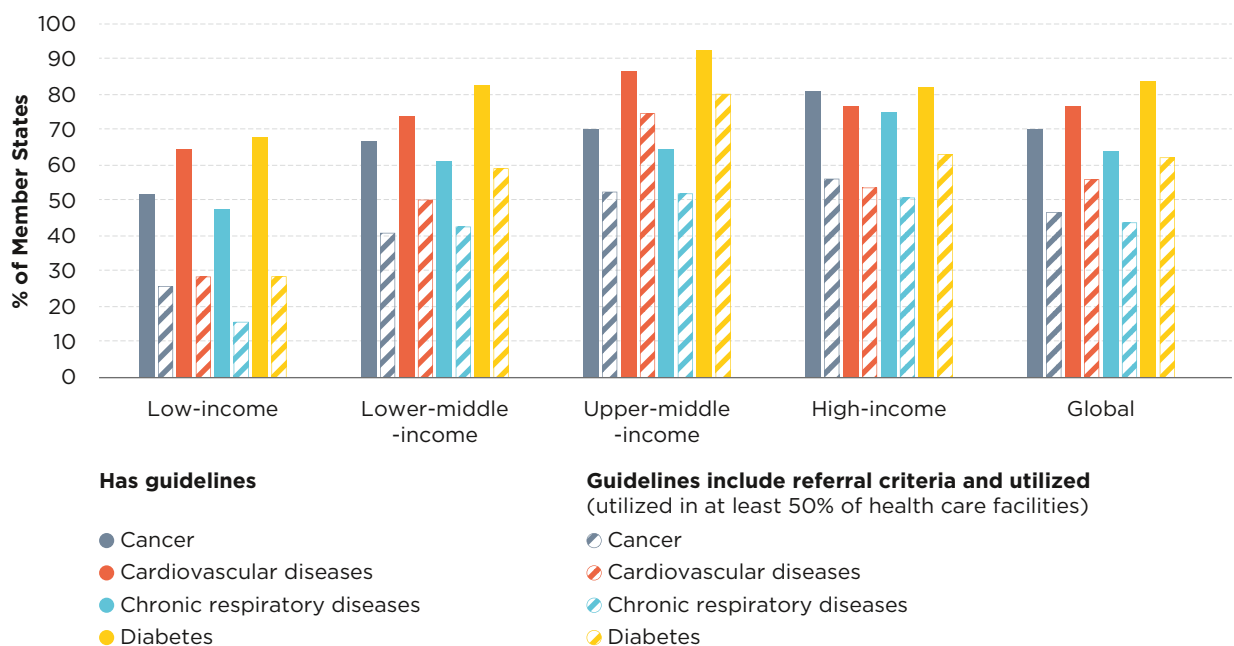
Figure 3. Percentage of Member States with funding for NCD activities by function, by income group, 2019

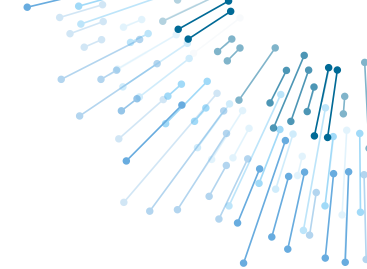


2. Evidence-based guidelines for NCD management

Evidence-based guidelines for the management of NCDs need to be developed and broadly implemented to ensure appropriate diagnosis, referral and treatment. Globally, only 48% of countries reported having evidence-based guidelines, protocols or standards for the management of all four NCDs through a primary care approach. Guidelines for diabetes were most widely available (84%), followed by CVDs (77%), cancer (70%) and CRDs (64%). Correspondingly, countries were most likely to have guidelines for diabetes that included referral criteria and were utilized in at least 50% of health care facilities, with 80% of countries in upper-middle-income countries reporting having such guidelines (Figure 4).

Figure 4. Percentage of Member States with guidelines, protocols or standards for major NCDs, by income group, 2019





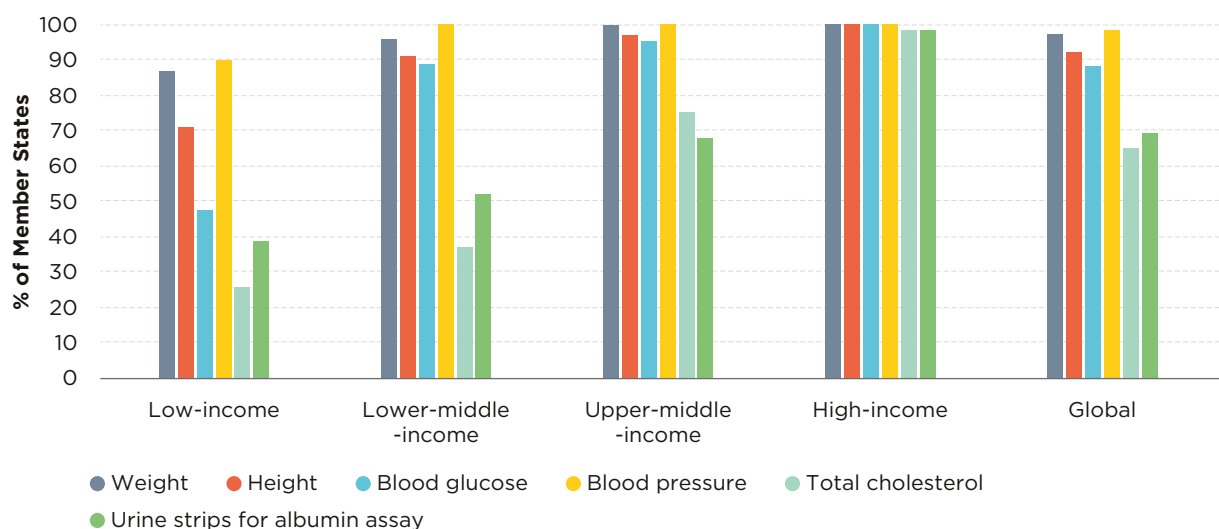
3. Availability of essential NCD technologies and medicines in primary health care

a. Essential technologies for NCDs

Managing NCDs requires a wide array of medical technologies. In low-resource settings where investment in health is small and inadequate, choosing an appropriate mix of the most cost-effective technological applications is challenging. A prioritized set of technologies has to be made available in primary care based on population needs in the interest of equity. The basic technologies, when combined with trained personnel and referral systems, will enable most patients with major NCDs to be treated close to their homes and will help to enhance utilization of primary care services.

Almost all high-income countries (96%) reported having all six essential technologies for early detection, diagnosis and monitoring of NCDs (weight, height, blood glucose, blood pressure, total cholesterol, urine strips for albumin assay) being generally available in more than 50% of primary care facilities in 2019, although the availability fell to only 16% in low-income countries. Total cholesterol measurement and urine strips for albumin assay were reported as the least available essential technologies in low- and middle-income countries while blood pressure measurement and weight measurement were widely available (Figure 5).

Figure 5. Percentage of Member States with availability of essential technologies for early detection, diagnosis and monitoring of NCDs in primary care facilities of the public health sector by technologies, by income group, 2019



b. Essential medicines for NCD management

All 11 essential surveyed medicines (insulin, aspirin, metformin, thiazide diuretics, ACE inhibitors, angiotensin II receptor blockers, calcium channel blockers, beta blockers, statins, steroid inhaler, bronchodilator) were generally available in more than 50% of primary care facilities or pharmacies in the public health sector in 93% of high-income countries as compared to 10% of low-income, 20% of lower-middle-income and 57% of upper-middle-income countries (Figure 6). Aspirin, metformin and thiazide diuretics were the most widely available essential medicines in 90%, 87% and 87% of countries, respectively. Steroid inhaler was the least generally available in less than two-thirds of countries globally (63%), with only 19% of low-income and 33% of lower-middle-income countries reported the general availability (Table 1).

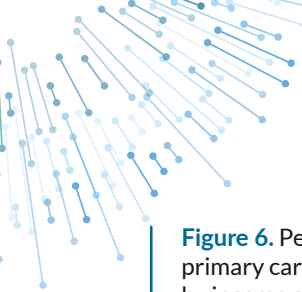


Figure 6. Percentage of Member States with general availability of essential medicines in primary care facilities of the public health sector by the number of available medicines, by income group, 2019

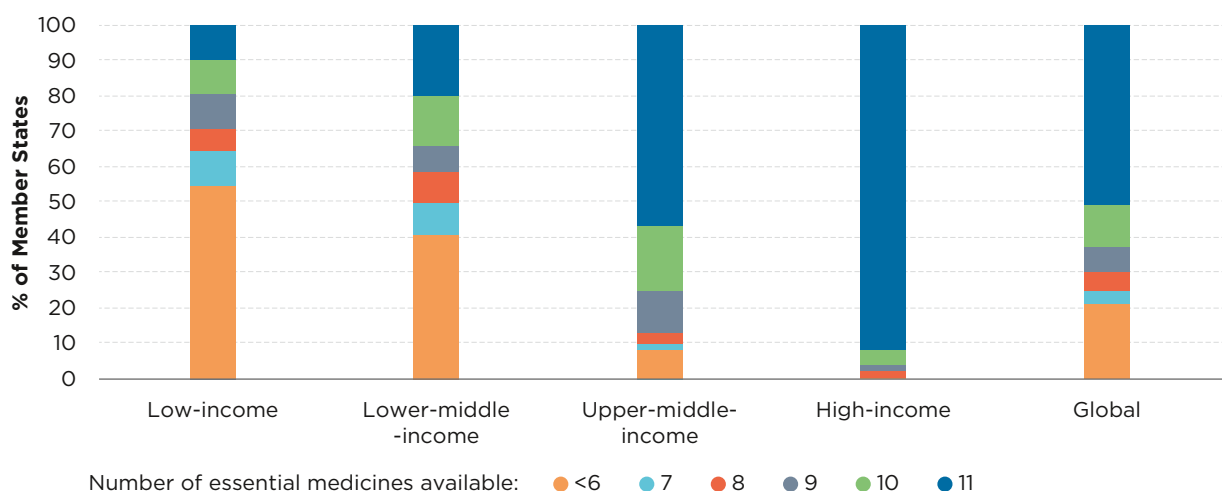


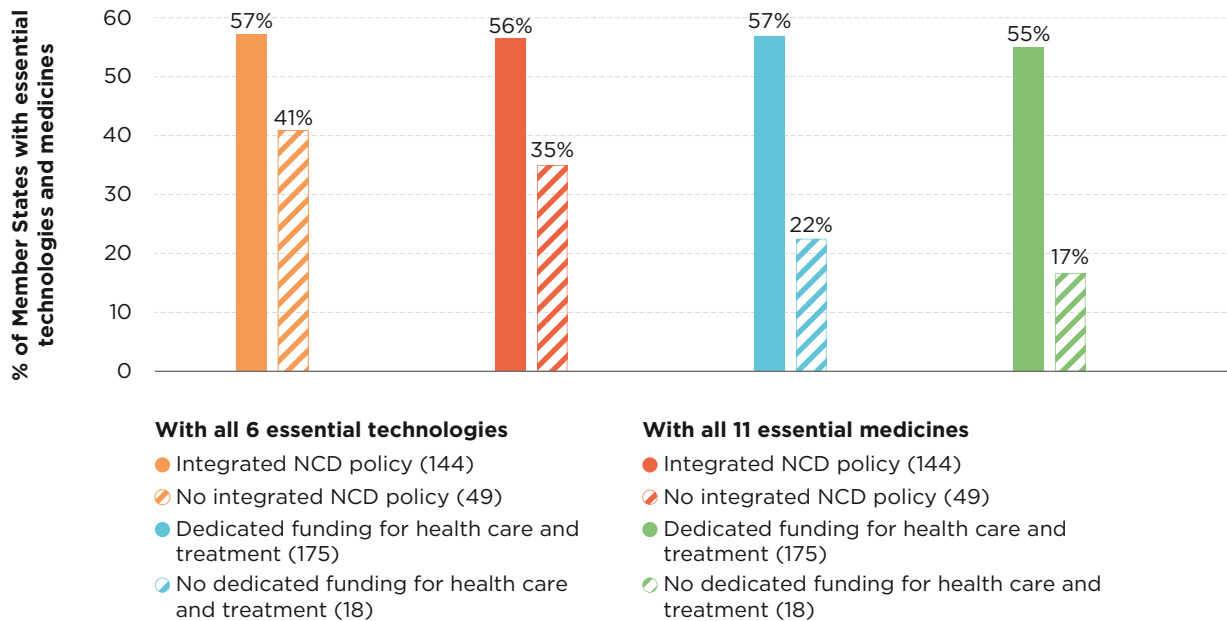
Table 1. Percentage of Member States with general availability of essential medicines in primary care facilities of the public health sector, by income group, 2019

Medicines	Low-income (%)	Lower-middle-income (%)	Upper-middle-income (%)	High-income (%)	Global (%)
Insulin	45	63	90	96	78
Aspirin (100 mg)	71	87	93	100	90
Metformin	61	78	95	100	87
Thiazide diuretics	68	76	92	100	87
ACE inhibitors	58	63	92	100	82
Angiotensin II receptor blockers	29	50	78	96	69
Calcium channel blockers	45	63	92	100	80
Beta blockers	55	61	92	100	81
Statins	29	48	83	98	71
Oral morphine	13	17	40	86	44
Steroid inhaler	19	33	77	96	63
Bronchodilator	55	70	92	100	83
Sulphonylurea(s)	35	57	90	98	76
Benzathine penicillin injection	68	76	85	96	84

c. Impact of NCD policies and funding on availability of technologies and medicines

Essential technologies were more likely to be available in countries that have operational integrated NCD policy (57%) than in those without operational integrated NCD policy (41%) (Figure 7). Correspondingly, countries with operational integrated NCD policy were more likely to have all 11 essential medicines available in public primary care facilities (56%) than those without such policy (35%). Countries with dedicated funding for health care and treatment were also more likely to have all essential technologies and medicines available than those without such funding.

Figure 7. Percentage of Member States reporting general availability of essential technologies (in more than 50% of health care facilities) and medicines (in more than 50% of pharmacies), by integrated NCD policy and funding availability, 2019



**Numbers in brackets indicate denominators for each group, excluding countries with unknown status of funding or where existence of integrated NCD policy was unknown.*

4. NCD services in primary care

a. Cardiovascular risk assessment

The cardiovascular risk prediction charts enable a total risk stratification approach to the prevention and management of CVDs in primary care through integrated risk assessment and management. CVD risk assessment enables the use of resources to be directed to populations at highest risk of developing vascular events such as heart attacks, stroke and diabetes complications. In 2019, 38% of countries globally offered CVD risk stratification in more than 50% of primary health care facilities. About 40% of health facilities in low-income countries did not offer CVD risk stratification (Figure 8).

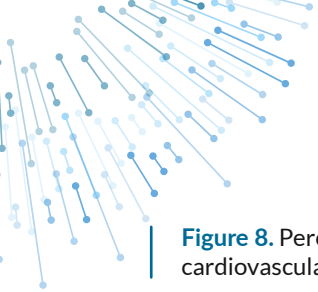
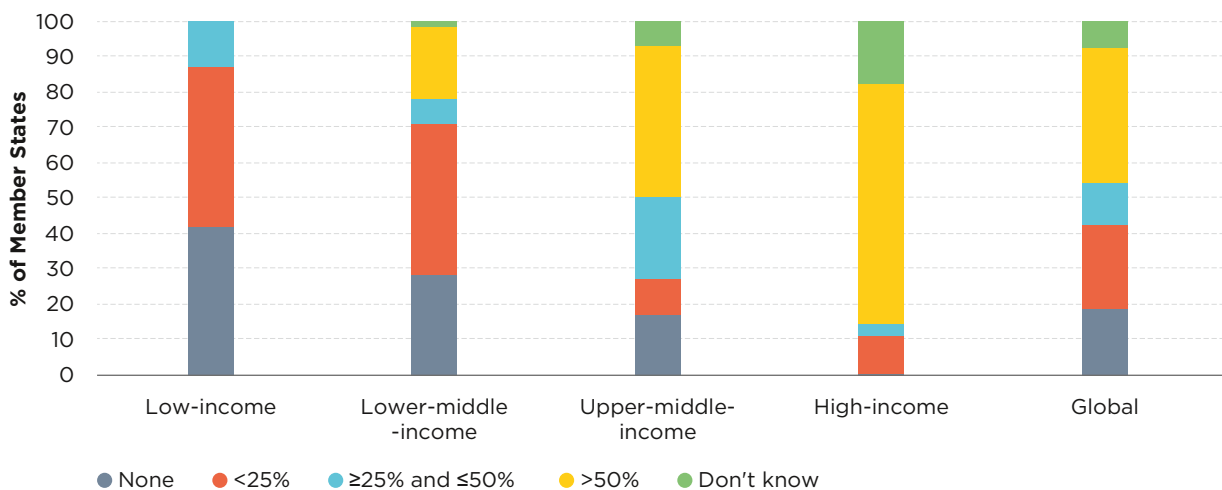


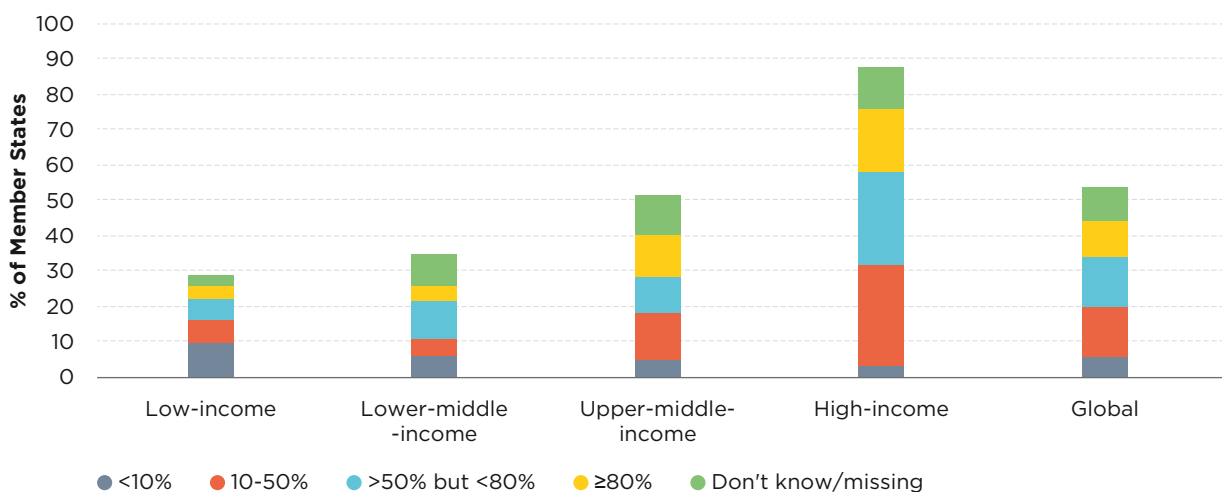
Figure 8. Percentage of Member States with primary health care facilities offering cardiovascular risk stratification, by income group, 2019



b. Prevention and early detection of cancer

There are two cancers for which risks can be reduced by widely available vaccines: liver and cervical cancers. Ninety percent of cervical cancer deaths occur in low- and lower-middle-income countries where universal access to health services is challenged. Vaccination against the most common cancer-causing types of human papillomavirus (HPV) is one of the three key pillars – together with screening and management of invasive cervical cancer (diagnosis, treatment and palliative care) – that contribute towards the elimination of cervical cancer.⁵ The draft strategy targets a global coverage of 90% vaccination by 2030. Not only the availability of nationwide HPV vaccination programme varied significantly, there was a large gap in its reported coverage across income groups (Figure 9).

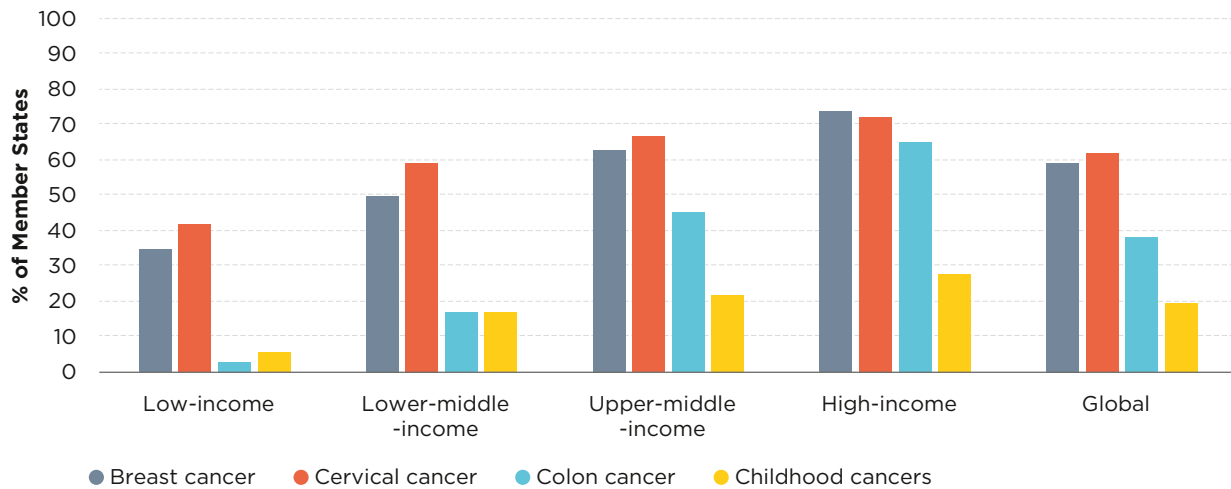
Figure 9. Percentage of Member States with a national HPV vaccination programme by coverage, by income group, 2019



Programme or guidelines to strengthen early detection of cancers at primary health care level were more available for breast and cervical cancers than colon and childhood cancers across income groups (Figure 10).

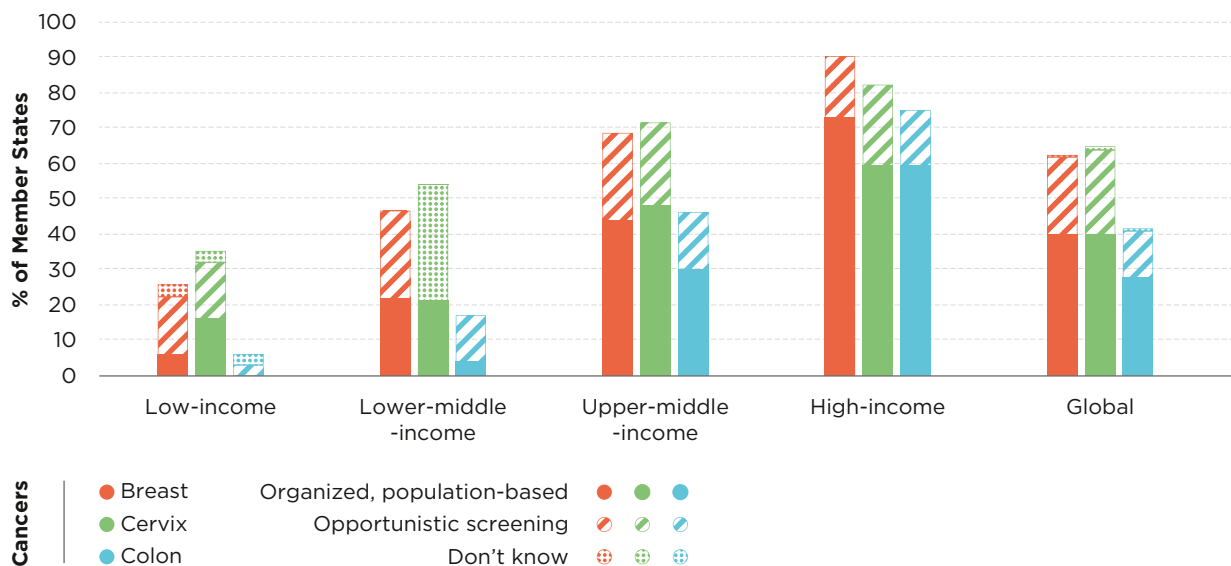
⁵ <https://www.who.int/activities/a-global-strategy-for-elimination-of-cervical-cancer>

Figure 10. Percentage of Member States with programme/guidelines to strengthen early detection of cancers at primary health care, by income group, 2019



Early detection of cancer through education to promote early diagnosis and organized population-based screening programmes in appropriate settings, substantially increases the chances for successful treatment and survival. Screening programmes were widely available for breast, cervical and colon cancers in high-income countries although screening for colon cancer remained available in less than 50% of low- and middle-income countries. In low- and lower-middle-income countries, organized cervical cancer screening programmes were low and majority were offering opportunistic screening (Figure 11).

Figure 11. Percentage of Member States with cancer screening programmes by types of screening, by income group, 2019

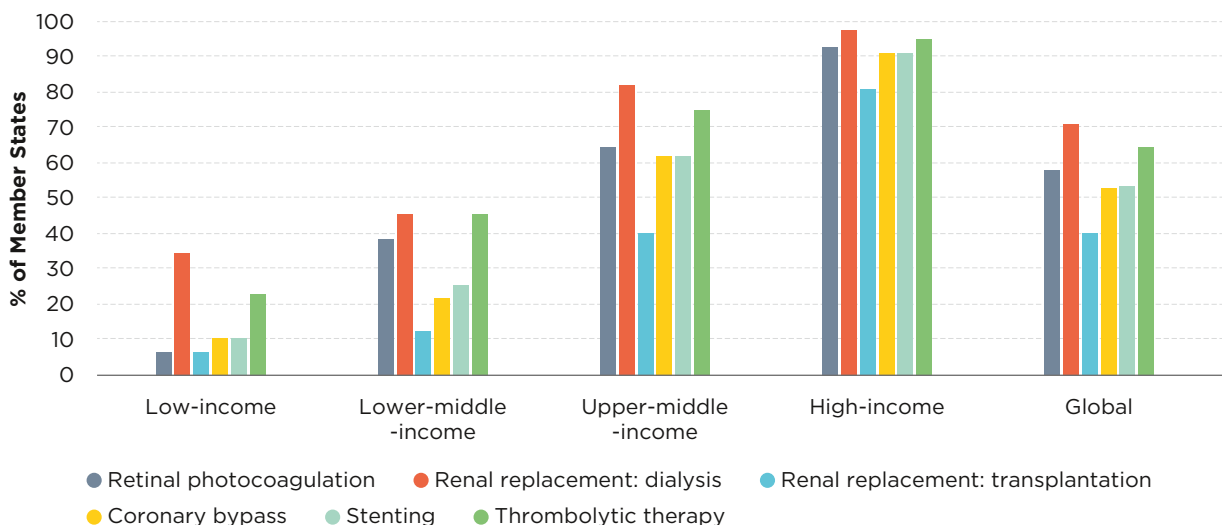


5. Availability of specialized procedures and services

a. Procedures for treatment of NCDs

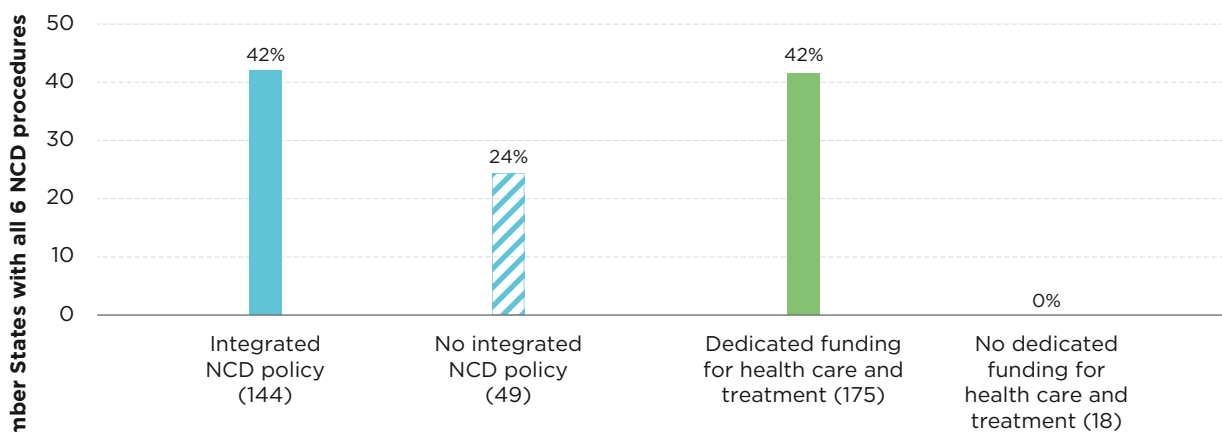
It is ideal that services for treating NCDs are accessible and provided in publicly funded health system in a timely manner to improve outcomes and to reduce mortality. Key procedures surveyed for treatment of NCDs included: retinal photocoagulation, renal replacement by dialysis, renal replacement by transplantation, coronary bypass, stenting, and thrombolytic therapy. These were widely available in more than 50% of high-income countries while it remained scarcely available in low- and lower-middle-income countries (Figure 12).

Figure 12. Percentage of Member States with general availability of procedures for treating NCDs in publicly funded health system, by income group, 2019



It was also noted that while these six procedures were available in 42% of countries with operational integrated NCD policy, the availability nearly halved in countries without integrated NCD policy (Figure 13). Allocation of funding for health care and treatment also appeared to make a difference in the service availability; 42% of countries with such funding reported having all six procedures available, while none of the countries without the dedicated funding had all six procedures. Amongst the selected procedures, renal dialysis was the most available and renal transplantation the least available procedures in all income groups.

Figure 13. Percentage of Member States reporting general availability of all 6 NCD procedures (reaching more than 50% of patients in need), by integrated NCD policy and funding availability, 2019

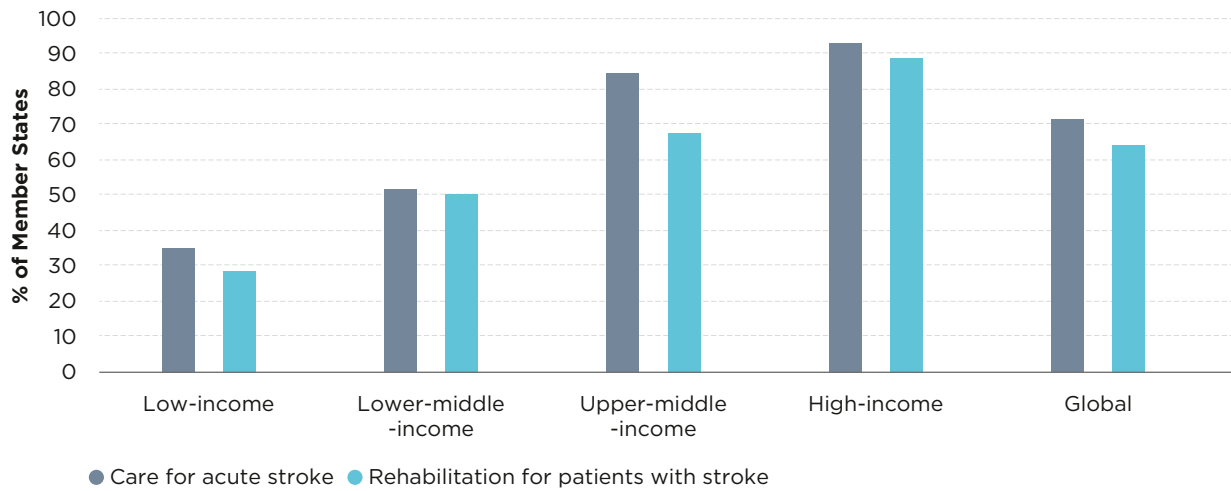


*Numbers in brackets indicate denominators for each group, excluding countries with unknown status of funding or where existence of integrated NCD policy was unknown.

b. Care of acute stroke

There was also a notable disparity in service availability for acute stroke. Care for acute stroke was available to more than 50% of patients in need in approximately a third of low-income countries, half of lower-middle-income countries, and more than 80% of high- and upper-middle-income countries. Availability of rehabilitation for patients with stroke was lower than acute stroke care in all income groups (Figure 14).

Figure 14. Percentage of Member States with general availability of services for stroke in public health system, by income group, 2019

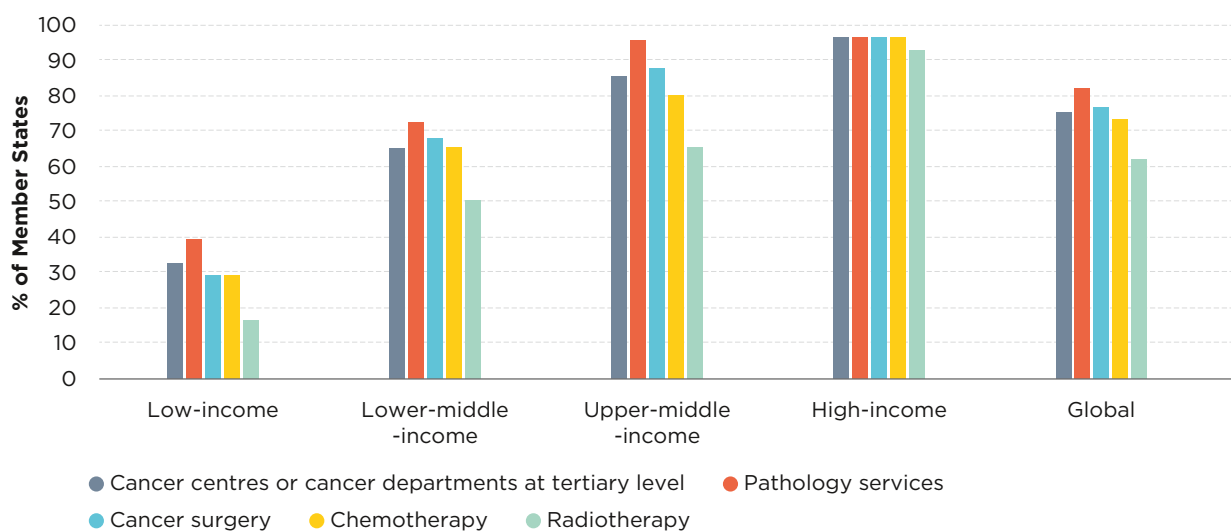


c. Cancer services

Ensuring accessibility to cancer care is essential, particularly in resource-limited settings and vulnerable populations, in detecting symptomatic patients at the earliest possible stage and improving cancer outcomes. While over 80% of middle- and high-income countries had cancer centres or cancer departments at tertiary level that are available to at least 50% of patients in need, only a third of low-income countries, where a significant cancer burden lies, had the specialized facility in the public sector.

Pathology is especially important in cancer diagnosis to provide pathologic confirmation of cancer, which leads to initiation of cancer treatment. Thirty-nine percent of low-income countries reported pathology services being generally available, as compared to 72%, 95% and 96% of lower-middle, upper-middle and high-income countries, respectively. Among cancer treatment services, cancer surgery and chemotherapy were found to be more available than radiotherapy in all income groups (Figure 15).

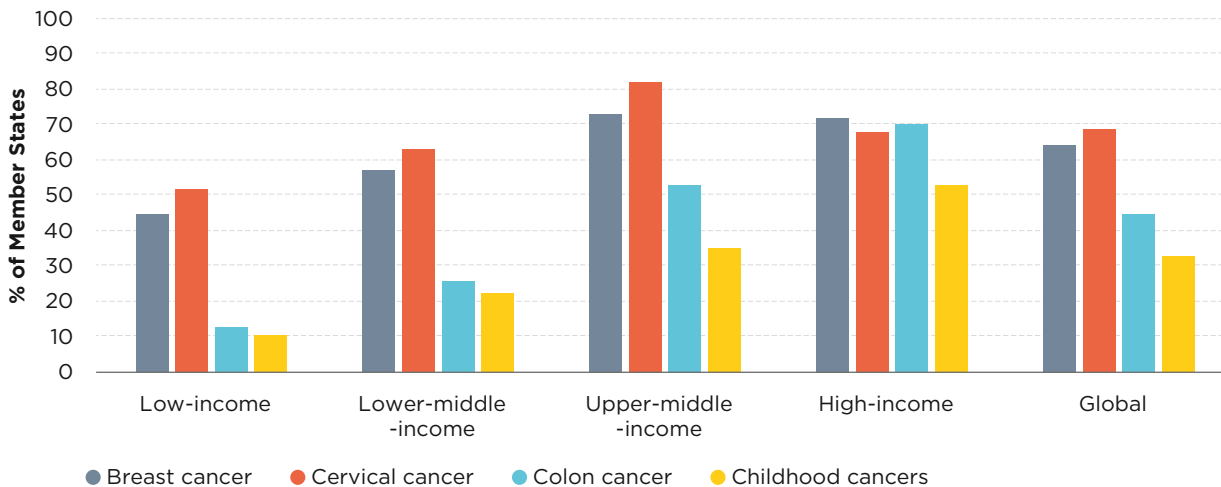
Figure 15. Percentage of Member States with general availability of cancer diagnosis and treatment services in the public sector, by income group, 2019



The availability of referral systems from primary to secondary and tertiary care for suspected cancer cases varied by cancer and income group (Figure 16). While referral systems for breast and cervical cancers were more likely to be in place in low- and middle-income countries than the other two cancers, early detection and referral system for colon cancer were also widely available in high-income countries.



Figure 16. Percentage of Member States with a clearly defined referral system from primary care to secondary and tertiary care for suspected cancer cases, by income group, 2019

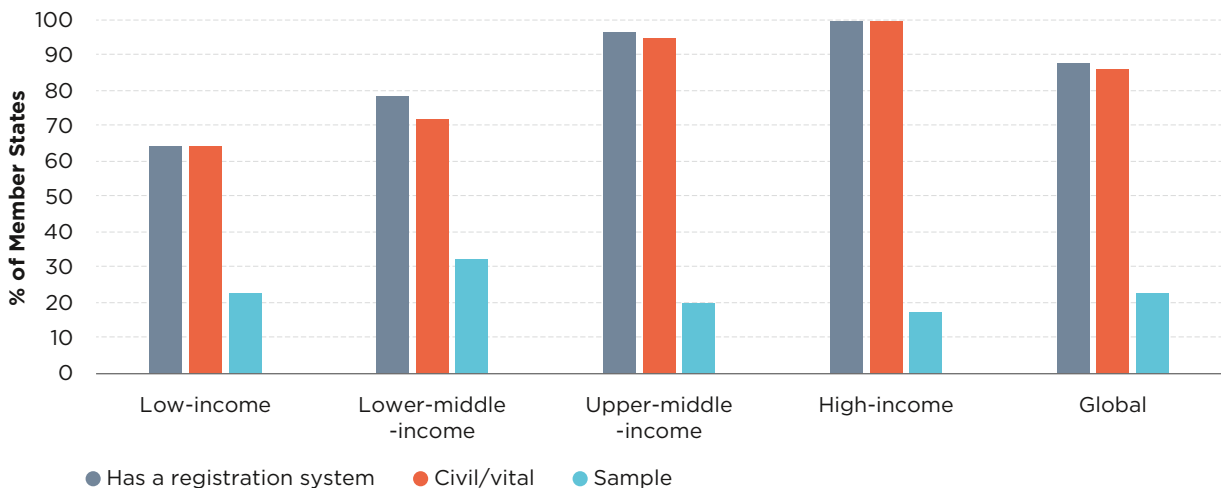


6. Health information systems for NCDs

a. Mortality data

Functional and reliable civil registration and vital statistics systems – including cause of death information – are essential in monitoring and evaluating the progress of strategies and plans to reduce the burden of NCDs. Globally, 88% of countries reported having a system for regularly collecting mortality data by cause of death; 86% of them had a civil or vital registration system and 23% a sample registration system (Figure 17). Availability of the registration systems varied across income groups, with 65% in low-income and 78% in lower-middle-income countries. Nearly all high-income (100%) and upper-middle-income countries (97%) had systems in place to collect mortality data.

Figure 17. Percentage of Member States with a system for collecting mortality data by cause of death and the type of registration system, by income group, 2019



b. Disease registries

Cancer and diabetes registries are important in collecting disease-specific data, and in planning and monitoring initiatives to improve the prevention and management of these diseases. Population-based registries provide an unbiased description of the disease patterns and trends and play a vital role in national strategy and programme. Cancer registries were widely available in majority of the countries (87%), although population-based registries were in place in two-thirds of these countries (64%). Across income groups, availability of population-based cancer registries ranged from 88% in high-income countries to 45% of low-income countries (Figure 18).

Diabetes registries, on the other hand, were available in just 50% of countries globally, with upper-middle-income countries reporting the highest availability (63%) across income groups. Hospital-based diabetes registries were more prevalent than population-based registries in all income groups (Figure 19).

Figure 18. Percentage of Member States with cancer registries by type of registry, by income group, 2019

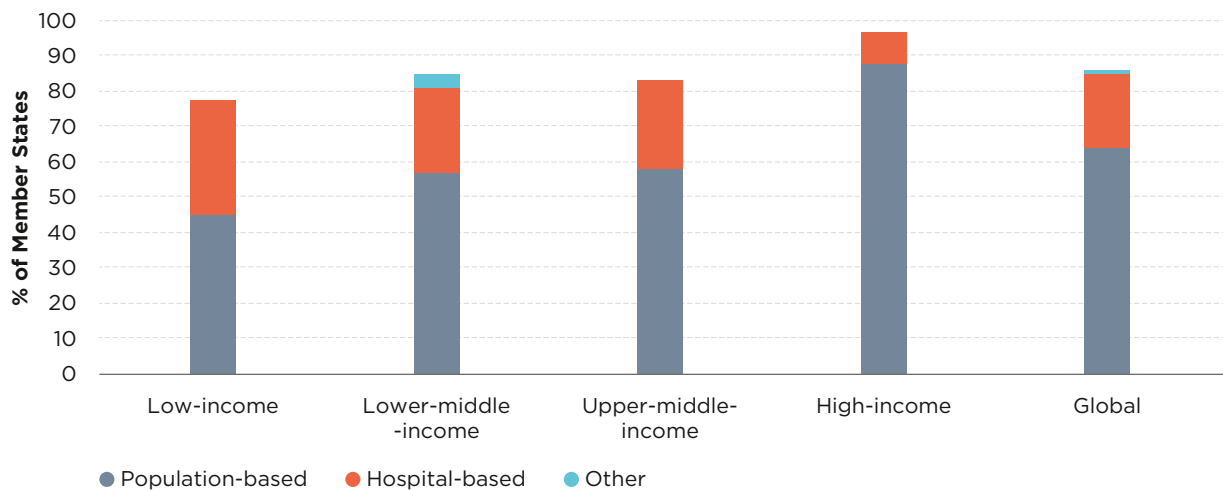
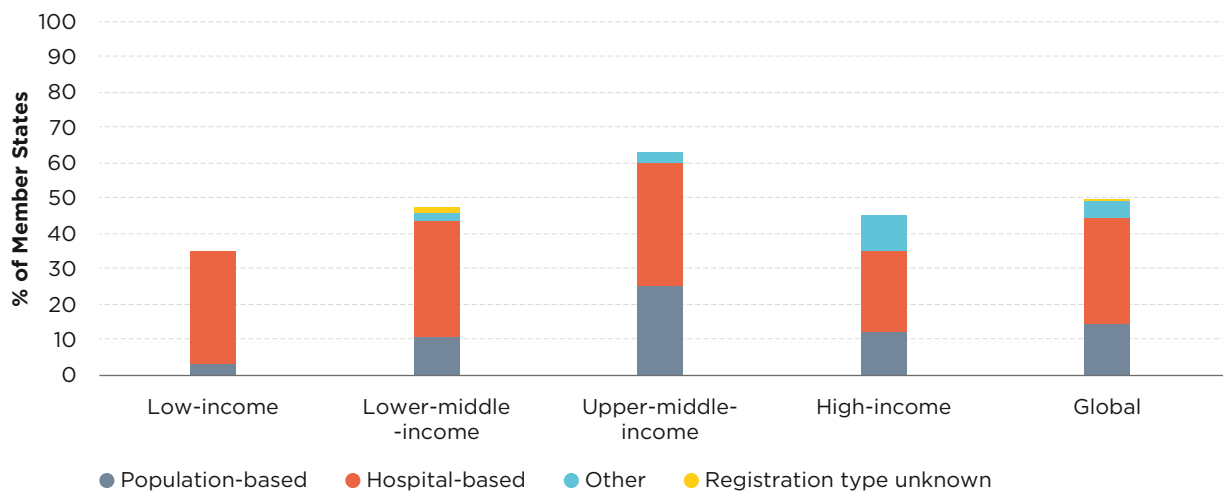


Figure 19. Percentage of Member States with diabetes registries by type of registry, by income group, 2019



Summary

The global NCD snapshot revealed substantial differences among Member States (grouped by World Bank income levels) in the availability of NCD management across various domains. Though national NCD policies for cancer, diabetes and CVDs were available and operational, funding for NCD activities was inadequate in low-income countries. Essential medicines and technologies, guidelines and protocols were less available in low-income and lower-middle-income countries. This survey calls for improvement in capacity, medicines, equipment, workforce and resources for NCD management in primary health care and referral services. This snapshot will also serve as an advocacy tool towards global and national action to achieve SDG 3.4 on NCDs and UHC.