COUNTRY NAME

Cancer Country Profile 2020

BURDEN OF CANCER

Total population (2019)

XXX,XXX,XXX

Total # cancer cases (2018)	Total # cancer deaths (2018)
XXX,XXX	XXX,XXX

Source: Total population data is collected from WHO Global Health Observatory (GHO) database.
Cancer incidence and mortality data are retrieved from Global Cancer Observatory, International Agency for Research on Cancer (IARC); 2019.

All website links can be found at the end.

Premature deaths from NCDs (2016)

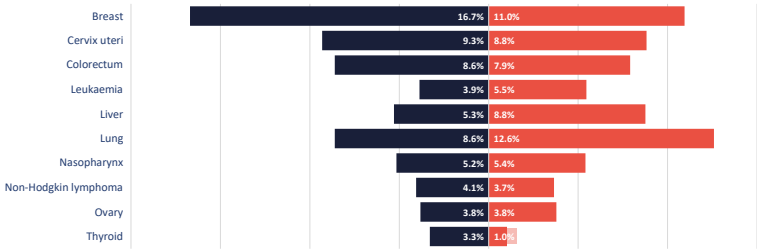
XXX,XXX

Cancer as % of NCD premature deaths (2016)

xx%

Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016. WHO 2018.

Most common cancer cases (2018)



Note: Top 10 cancer incidence cases are calculated in percentage out of all cancer cases (listed on the left side) for each country, by alphabetical order. Each of these cancer cases' respective mortality percentages are listed as well.

PAFs (population attributable fractions)

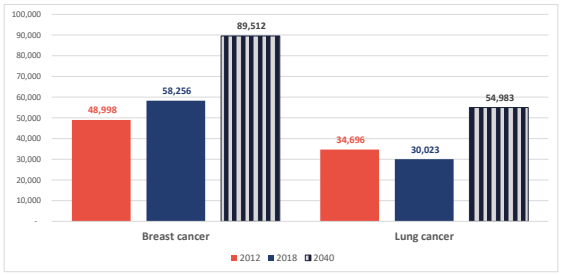
Tobacco (2017)[a]	Alcohol (2016)[a]	Infections (2012)[b]	Obesity (2012)[b]	UV (2012)[c]	Occupational risk (2017)[a]
5.1%	2.6%	24.1%	0.3%	18.7%	0.9%

[a] *PAF, cancer deaths* [b] *PAF, cancer cases* [c] *PAF, melanoma cases*

Source: The contribution of a risk factor to a disease or a death is quantified using the PAFs.
Tobacco and occupational risk data are collected from Global Health Data Exchange, Institute for Health Metrics and Evaluation (IHME); 2020.
Alcohol data is retreived Global Status Report on Alcohol and Health, WHO 2018.
Infections, obesity and UV data are retrieved from Global Health Observatory, IARC, 2018.

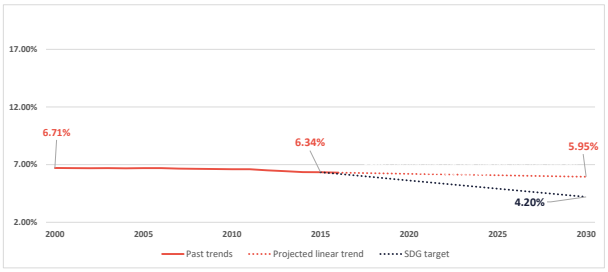
TRENDS

Estimated past and future trends in total cases per year (breast and lung)



Source: Data are retrieved from Global Cancer Observatory, IARC, 2018.

Probability of premature death from cancer per year



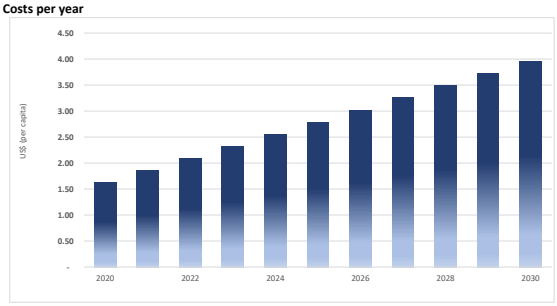
Note: Probability of premature mortality is the probability of dying between ages 30 and 69 years from cancer and was estimated from 2010 to 2016 using age-specific death rates (in 5-year age groups, for those between 30 and 69). Further information on the calculation of the probability of premature mortality can be found Noncommunicable Diseases Progress Monitor, WHO 2015. (page 11-12)
SDG target is calculated as one third of the 2015 rate, aligning with the SDG 3.4 target to reduce premature mortality by one third from NCDs, including cancer by 2030.

INVESTMENT CASE (2019)

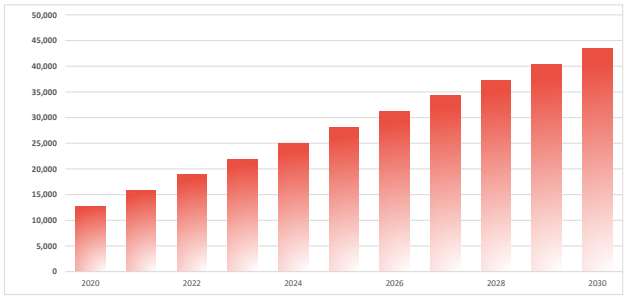
Specific income level of the country

At this income level, investing in a package of essential services and scaling-up coverage will:

Costs per year



Projected lives saved per year



Note: WHO has drawn up an investment case for NCD prevention and control, which shows that for every US$1 invested in scaling up interventions to address NCDs in LMIC, there will be a return to society of at least US$7 in increased employment, productivity and longer life. The interventions are now known as "best buys" and endorsed by Member States. Further information on the methodology of the investment case can be found in the WHO Report on Cancer 2020.

** The per capita investment required varies by country, partly because of the expensive package modelled for MIC and partly because of the higher costs of non-traded goods in those countries. Thus, this profile is showing "cost per year" by each country's respective World Bank Income level, 2019. HICs are not included in the model. All financial costs associated with delivering care are included, regardless of who at present pays for cancer services. Costs are calculated using a bottom up costing approach, where all the ingredients required to deliver an intervention are identified, the quantity of each is estimated and the price of each ingredient sought from global databases. For human resource and facility costs, WHO CHOICE global databases are used, inflated to 2020. Medicine prices are taken from the Drug Price Indicator Guide and again inflated to 2020 prices.*

**For each life saved, the person is able to be an active member of the workforce and contribute to GDP at the average wage rate of the population. Secondly, for each life saved there are broader societal benefits beyond direct workforce participation. These are captured using a value of statistical life calculation, assuming a ratio of 22 x GDP per capita per life saved.*

COUNTRY NAME

Cancer Country Profile 2020

HEALTH SYSTEM CAPACITY

Availability of population-based cancer registry (PBCR)**	2019	PBCR
Quality of mortality registration***	2007-2016	No coverage

Source: The Global Initiative for Cancer Registry Development, IARC 2019

Source: World Health Statistics 2018: Monitoring Health for the SDGs, WHO 2018

***If response is not PBCR, footnote appears "The incidence estimates for this country have a high degree of uncertainty because they are not based on PBCR"*

**** If response is neither 'High' nor 'Medium', footnote appear "The mortality estimates for this country have a high degree of uncertainty because they are not based on any national NCD mortality data"*

** per 10,000 cancer patients*

# of external beam radiotherapy (photon,electron)*	2019	0.1
# of mammographs*	2020	n/a
# of CT scanners*	2020	5.0
# of MRI scanners*	2020	1.0
# of PET or PET/CT scanners*	2020	0.0

Source: Data on the equipment is from IMAGINE - IAEA Medical imAGIng and Nuclear mEdicine global resources database. They are calculated per 10,000 cancer patients based on the cancer incidence data from 2018.

WORKFORCE

** per 10,000 cancer patients*

Available staff in Ministry of Health who dedicates significant proportion of their time to cancer	2019	yes

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO 2019

# of radiation oncologist*	2019	n/a
# of medical physicist*	2019	0.6
# of surgeons*	2014	51.6
# of radiologist*	2019	23.7
# of nuclear medicine physician*	2019	0.1
# of medical & pathology lab scientists*	2009	n/a

Source: Workforce data (except surgeons and medical/ pathology lab scientists data) are retreived from IMAGINE - IAEA Medical imAGIng and Nuclear mEdicine global resources database.
Surgeons and medical/pathology lab scientists data are from Global Health Workforce Statistics, WHO 2018. Workforce data is calculated per 10,000 cancer patients based on the cancer incidence data from 2018.

FORMULATING RESPONSE

Integrated NCD plan	2019	operational
NCCP (including cancer types)	2019	operational
MPOWER measures fully implemented and achieved	2018	0
Cancer management guidelines	2019	yes
Palliative care included in their operational, integrated NCD plan	2019	yes
# of treatment services (surgery, radiotherapy, chemotherapy)	2019	0
Breast cancer screening program	2019	yes
Breast cancer screening program: Starting age, target population	2019	40

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO, 2019
MPOWER scores are retrieved from The WHO Framework Convention on Tobacco Control, WHO 2018. If score is 5, country gets green color, if 0, it is red, and all others are in orange color.

FORMULATING RESPONSE

# Public cancer centres per 10,000 cancer patients	2019	0.1
Early detection programme/ guidelines for 4 cancers (breast, cervix, colon, childhood)	2019	3 cancer(s)
Pathology services	2019	generally not available
Bone marrow transplantation capacity	2019	generally not available
Palliative care availability: community/home-based care	2019	generally not available

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO 2019

Availability of opioids* for pain management	2015-2017	25

**Defined daily doses for statistical purposes (S-DDD) per million inhabitants per day*

Source: International Narcotic Control Board Secretariat (INCB), United Nations Office on Drugs and Crime (UNODC)

GLOBAL INITIATIVES

Elimination of Cervical Cancer

HPV vaccination programme coverage	2018	0

Source: Annual reports on Immunization performance from the Ministry of Health to WHO/UNICEF (WHO/UNICEF Joint Reporting Form) 2018

Cervical cancer screening	2019	yes
Screening programme type	2019	opportunistic
Screening programme method	2019	visual inspection
Screening participation rates	2019	<10%
Early detection programme/guidelines	2019	yes
Defined referral system	2019	yes

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO, 2019

Global Initiative for Childhood Cancer

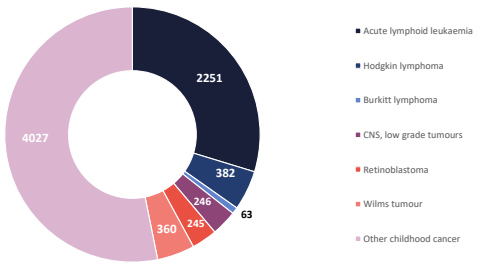
Annual cancer cases (0-14 years old)	2020	6175

Source: Data are retrieved from Global Cancer Observatory, IARC, 2018.

Early detection programme/guidelines	2019	yes
Defined referral system	2019	yes

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO, 2019

Annual cancer cases (0-14 years old)



List of websites:

Global Health Observatory. Geneva: World Health Organization; 2016 http://www.who.int/gho/database/en/
Global Cancer Observatory: cancer today, Lyon: International Agency for Research on Cancer; 2019. (https://gco.iarc.fr/)
Global Health Estimates 2016, WHO: https://www.who.int/healthinfo/global_burden_disease/estimates/en/index1.html
Global Health Data Exchange, Institute for Health Metrics and Evaluation (IHME); 2020. Seattle (WA) (http://ghdx.healthdata.org/ihme_data, accessed January 2020).
Global status report on alcohol and health 2018. Geneva: World Health Organization; 2018 (https://www.who.int/substance_abuse/publications/global_alcohol_report/en/, accessed January 2020).
Noncommunicable Diseases Progress Monitor, WHO 2015. https://www.who.int/nmh/publications/ncd-progress-monitor-2015/en/
WHO Global Report on Cancer 2020 https://www.who.int/publications-detail/who-report-on-cancer-setting-priorities-investing-wisely-and-providing-care-for-all
The Global Initiative for Cancer Registry Development, IARC https://gicr.iarc.fr/
Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO, 2019 https://www.who.int/ncds/surveillance/ncd-capacity/en/
Annual reports on Immunization performance from the Ministry of Health to WHO/UNICEF 2018 https://www.who.int/immunization/monitoring_surveillance/data/en/
IMAGINE - IAEA Medical imAGIng and Nuclear mEdicine Global Resources Database https://humanhealth.iaea.org/HHW/DBStatistics/IMAGINEMaps.html
International Narcotic Control Board Secretariat (INCB), United Nations Office on Drugs and Crime (UNODC) https://www.unodc.org/lpo-brazil/en/drogas/jife.html

COUNTRY NAME

Cancer Country Profile 2020

BURDEN OF CANCER

Total population (2019)

XXX,XXX,XXX

Total # cancer cases (2018)	Total # cancer deaths (2018)
XXX,XXX	XXX,XXX

Source: Total population data is collected from WHO Global Health Observatory (GHO) database.
Cancer incidence and mortality data are retrieved from Global Cancer Observatory, International Agency for Research on Cancer (IARC); 2019.

All website links can be found at the end.

Premature deaths from NCDs (2016)

XXX,XXX

Cancer as % of NCD premature deaths (2016)

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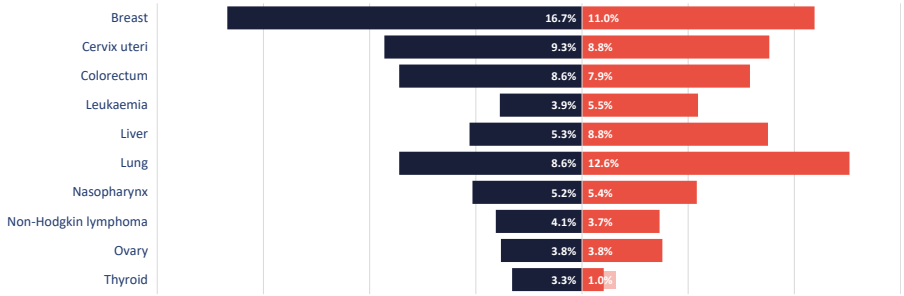
Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016. WHO 2018.

Most common cancer cases (2018)



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PAFs
(population attributable fractions)

Tobacco (2017)[a]	Alcohol (2016)[a]	Infections (2012)[b]	Obesity (2012)[b]	UV (2012)[c]	Occupational risk (2017)[a]
5.1%	2.6%	24.1%	0.3%	18.7%	0.9%

[a] *PAF, cancer deaths* [b] *PAF, cancer cases* [c] *PAF, melanoma cases*

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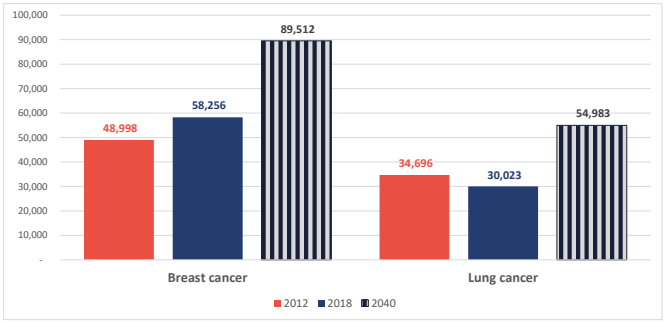
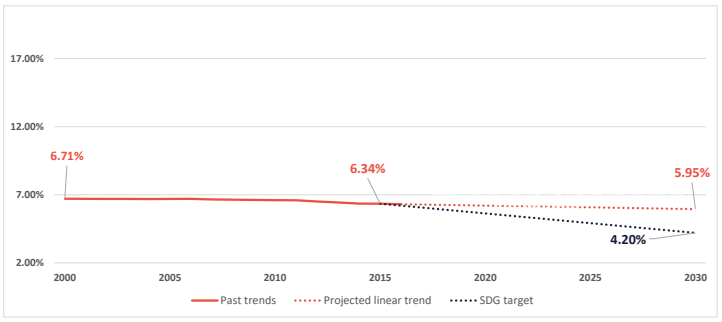
TRENDS

Estimated past and future trends in total cases per year (breast and lung)



Source: Data are retrieved from Global Cancer Observatory, IARC, 2018.

Probability of premature death from cancer per year



Note: Probability of premature mortality is the probability of dying between ages 30 and 69 years from cancer and was estimated from 2010 to 2016 using age-specific death rates (in 5-year age groups, for those between 30 and 69). Further information on the calculation of the probability of premature mortality can be found Noncommunicable Diseases Progress Monitor, WHO 2015. (page 11-12)

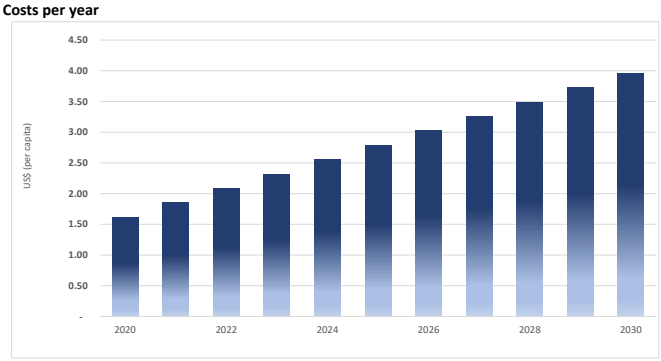
SDG target is calculated as one third of the 2015 rate, aligning with the SDG 3.4 target to reduce premature mortality by one third from NCDs, including cancer by 2030.

INVESTMENT CASE (2019)

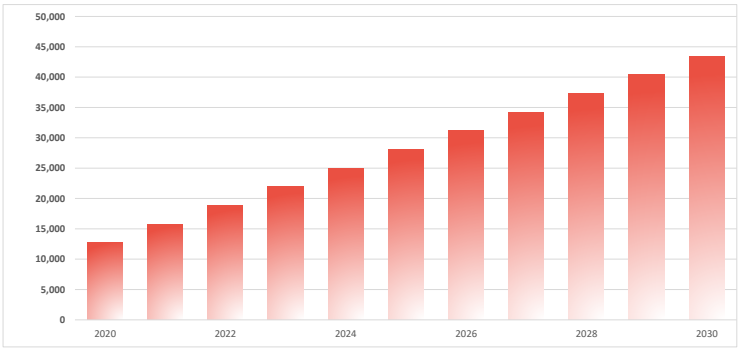
Specific income level of the country

At this income level, investing in a package of essential services and scaling-up coverage will:

Costs per year



Projected lives saved per year



Note: WHO has drawn up an investment case for NCD prevention and control, which shows that for every US$1 invested in scaling up interventions to address NCDs in LMIC, there will be a return to society of at least US$7 in increased employment, productivity and longer life. The interventions are now known as "best buys" and endorsed by Member States. Further information on the methodology of the investment case can be found in the WHO Report on Cancer 2020.

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**For each life saved, the person is able to be an active member of the workforce and contribute to GDP at the average wage rate of the population. Secondly, for each life saved there are broader societal benefits beyond direct workforce participation. These are captured using a value of statistical life calculation, assuming a ratio of 22 x GDP per capita per life saved.*

HEALTH SYSTEM CAPACITY

[a] *per 10,000 cancer patients*

Availability of population-based cancer registry (PBCR)**	2019	**PBCR**

Source: The Global Initiative for Cancer Registry Development, IARC 2019

***If response is not PBCR, footnote appears "The incidence estimates for this country have a high degree of uncertainty because they are not based on PBCR"*

Quality of mortality registration***	2007-2016	**No coverage**

Source: World Health Statistics 2018: Monitoring Health for the SDGs, WHO 2018

**** If response is neither 'High' nor 'Medium', footnote appear "The mortality estimates for this country have a high degree of uncertainty because they are not based on any national NCD mortality data"*

# of external beam radiotherapy (photon,electron)[a]	2019	**0.1**
# of mammographs[a]	2020	**n/a**
# of CT scanners[a]	2020	**5.0**
# of MRI scanners[a]	2020	**1.0**
# of PET or PET/CT scanners[a]	2020	**0.0**

Source: Data on the equipment is from IMAGINE - IAEA Medical imAGIng and Nuclear mEdicine global resources database. They are calculated per 10,000 cancer patients based on the cancer incidence data from 2018.

WORKFORCE

[a] *per 10,000 cancer patients*

Available staff in Ministry of Health who dedicates significant proportion of their time to cancer	2019	**yes**

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO 2019

# of radiation oncologist[a]	2019	**n/a**
# of medical physicist[a]	2019	**0.6**
# of surgeons[a]	2014	**51.6**
# of radiologist[a]	2019	**23.7**
# of nuclear medicine physician[a]	2019	**0.1**
# of medical & pathology lab scientists[a]	2009	**n/a**

Source: Workforce data (except surgeons and medical/ pathology lab scientists data) are retreived from IMAGINE - IAEA Medical imAGIng and Nuclear mEdicine global resources database.
Surgeons and medical/pathology lab scientists data are from Global Health Workforce Statistics, WHO 2018. Workforce data is calculated per 10,000 cancer patients based on the cancer incidence data from 2018.

FORMULATING RESPONSE

Integrated NCD plan	2019	**operational**
NCCP (including cancer types)	2019	**operational**
MPOWER measures fully implemented and achieved	2018	**0**
Cancer management guidelines	2019	**yes**
Palliative care included in their operational, integrated NCD plan	2019	**yes**
# of treatment services (surgery, radiotherapy, chemotherapy)	2019	**0**
Breast cancer screening program	2019	**yes**
Breast cancer screening program: Starting age, target population	2019	**40**

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO, 2019
MPOWER scores are retrieved from The WHO Framework Convention on Tobacco Control, WHO 2018. If score is 5, country gets green color, if 0, it is red, and all others are in orange color.

FORMULATING RESPONSE

# Public cancer centres per 10,000 cancer patients	2019	**0.1**
Early detection programme/ guidelines for 4 cancers (breast, cervix, colon, childhood)	2019	**3 cancer(s)**
Pathology services	2019	**generally not available**
Bone marrow transplantation capacity	2019	**generally not available**
Palliative care availability: community/home-based care	2019	**generally not available**

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO 2019

Availability of opioids* for pain management	2015-2017	**25**

**Defined daily doses for statistical purposes (S-DDD) per miliion inhabitants per day*

Source: International Narcotic Control Board Secretariat (INCB), United Nations Office on Drugs and Crime (UNODC)

GLOBAL INITIATIVES

Elimination of Cervical Cancer

HPV vaccination programme coverage	2018	**0**

Source: World Health Organization, Department of Immunization, Vaccines and Biologicals. Annual reports on Immunization performance from the Ministry of Health to WHO/UNICEF (WHO/UNICEF Joint Reporting Form, 2018

Cervical cancer screening	2019	**yes**
Screening programme type	2019	**opportunistic**
Screening programme method	2019	**visual inspection**
Screening participation rates	2019	**<10%**
Early detection programme/guidelines	2019	**yes**
Defined referral system	2019	**yes**

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO, 2019

Global Initiative for Childhood Cancer

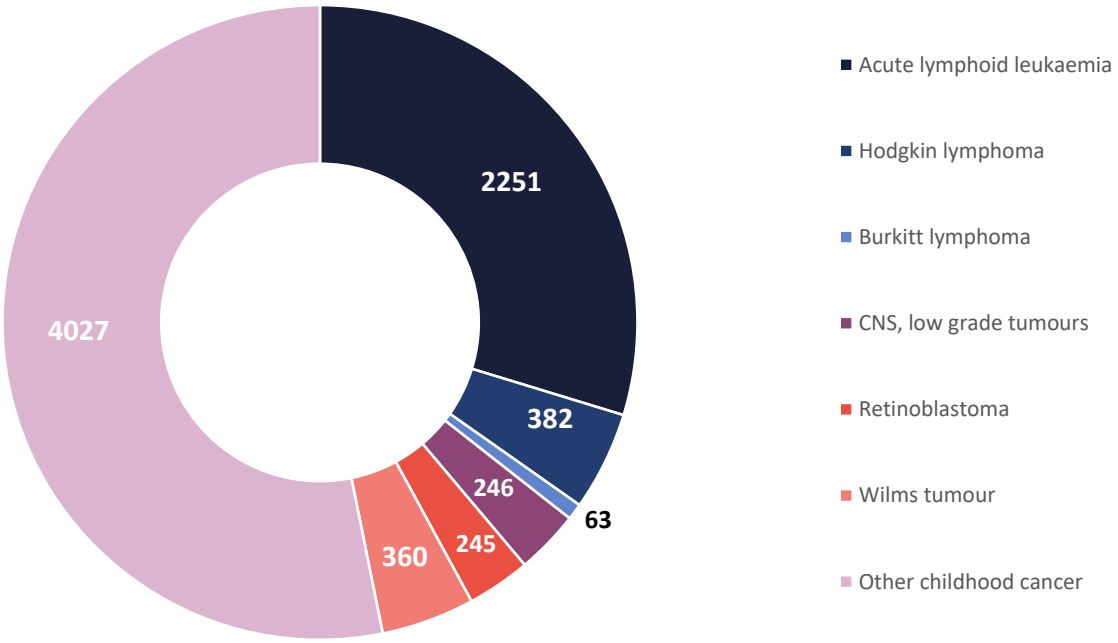
Annual cancer cases (0-14 years old)	2020	**6175**

Source: Data are retrieved from Global Cancer Observatory, IARC, 2018.

Early detection programme/guidelines	2019	**yes**
Defined referral system	2019	**yes**

Source: Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO, 2019

Annual cancer cases (0-14 years old)



List of websites:

Global Health Observatory. Geneva: World Health Organization; 2016 http://www.who.int/gho/database/en/

Global Cancer Observatory: cancer today, Lyon: International Agency for Research on Cancer; 2019. (https://gco.iarc.fr/)

Global Health Estimates 2016, WHO: https://www.who.int/healthinfo/global_burden_disease/estimates/en/index1.html

Global Health Data Exchange, Institute for Health Metrics and Evaluation (IHME); 2020. Seattle (WA) (http://ghdx.healthdata.org/ihme_data, accessed January 2020).

Global status report on alcohol and health 2018. Geneva: World Health Organization; 2018 (https://www.who.int/substance_abuse/publications/global_alcohol_report/en/, accessed January 2020).

Noncommunicable Diseases Progress Monitor, WHO 2015. https://www.who.int/nmh/publications/ncd-progress-monitor-2015/en/

WHO Global Report on Cancer 2020 https://www.who.int/publications-detail/who-report-on-cancer-setting-priorities-investing-wisely-and-providing-care-for-all

The Global Initiative for Cancer Registry Development, IARC https://gicr.iarc.fr/

Country Profile of Capacity and Response to Noncommunicable Diseases (NCDs) survey, WHO, 2019 https://www.who.int/ncds/surveillance/ncd-capacity/en/

Annual reports on Immunization performance from the Ministry of Health to WHO/UNICEF 2018 https://www.who.int/immunization/monitoring_surveillance/data/en/

IMAGINE - IAEA Medical imAGIng and Nuclear mEdicine Global Resources Database https://humanhealth.iaea.org/HHW/DBStatistics/IMAGINEMaps.html

International Narcotic Control Board Secretariat (INCB), United Nations Office on Drugs and Crime (UNODC) https://www.unodc.org/lpo-brazil/en/drogas/jife.html