



NATIONAL CANCER REGISTRY

Division of the National Health Laboratory Service



health

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CHILDHOOD CANCER REGISTRY 2022-2023 ANNUAL REPORT

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Acronyms and Abbreviations

ASR	: Age-Standardised Incidence Rate
CHOC	: Childhood Cancer Foundation South African
CNS	: Central Nervous System
NDoH	: National Department of Health, South Africa
EPBCR	: Ekurhuleni Population-Based Cancer Registry
GICC	: Global Initiative for Childhood Cancer
GICR	: Global Initiative for Cancer Registry
IACR	: International Association of Cancer Registries
IARC	: International Agency for Research on Cancer
ICCC-3	: International Classification of Childhood Cancer, Third Edition
ICDO-3	: International Classification of Diseases for Oncology, Third Edition
NICD	: National Institute for Communicable Diseases
NCR	: National Cancer Registry, South Africa
PBCR	: Population-Based Cancer Registries
POPI Act	: Protection of Personal Information Act, South Africa
SA	: South Africa
SSA	: sub-Saharan Africa
STATSSA	: Statistics, South Africa
WHO	: World Health Organization
WSP	: World Standard Population

EXECUTIVE SUMMARY

Globally, an estimated 400 000 children develop cancer each year, yet nearly half go undiagnosed – a burden borne disproportionately by low- and middle-income countries, especially in sub-Saharan Africa (SSA). In high-income countries, approximately 80–85% of children with cancer survive; in SSA, fewer than 30% do. In 2025, childhood cancer was formally recognised in the United Nations General Assembly political declaration on non-communicable diseases, reflecting growing global commitment. Progress toward these goals depends critically on accurate, population-level cancer surveillance.

Cancer surveillance in South Africa is the mandate of the National Cancer Registry (NCR) under Regulation 380 of the National Health Act (Act 61 of 2003). This combined 2022–2023 report is the fifth in the NCR's series of standalone annual childhood cancer reports, continuing with the expanded age range including adolescents aged 15–19 years introduced in the 2021 report. Childhood cancers are classified according to the International Classification of Childhood Cancers Third Edition (ICCC-3).

A total of 3 032 cancers were diagnosed in children aged 0–19 years in South Africa over the 2022–2023 period (1 525 in 2022; 1 507 in 2023), equating to an overall age-standardised incidence rate (ASR) of 68.4 cases per million (95% CI: 60.6–77.0). The consistency between years reflects a stable and maturing surveillance system. The ASR continues an upward trend from 57.7 (2019), 62.4 (2020), and 63.5 (2021) per million, driven by improved case ascertainment through expanded multi-source data integration rather than a true rise in incidence.

Leukaemias were the most commonly diagnosed cancer group (18%; ASR 12.5 per million), followed by lymphomas (16%; ASR 10.6 per million) and CNS tumours (13%; ASR 8.8 per million). Approximately 33% of all cases (n=991) were diagnosed in the 0–4 year age group, with the highest age-specific incidence rate at 84.2 per million. Osteosarcoma was the leading cancer in 15–19 year olds (n=108; 15.4%), consistent with global adolescent patterns.

Opportunities for further improvement in surveillance completeness remain, especially identifying further data sources for the age group 15-19 years who are systematically under-captured.

INTRODUCTION

The National Cancer Registry (NCR) is responsible for cancer surveillance in South Africa (SA). This includes the systematic collection, storage, analysis, interpretation and reporting of cancer cases [1]. To enable accurate cancer incidence reporting, the South African Department of Health enacted Regulation No 380 of the National Health Act (Act 61 of 2003) [1]. Under this regulation, cancer is a notifiable condition, placing a legal obligation on all healthcare workers to report confirmed cancer diagnoses to the NCR [2]. The NCR achieves surveillance through its pathology-based cancer registry, its sentinel population-based cancer registries in Gauteng and KwaZulu-Natal provinces, and the dedicated childhood cancer registry.

Globally, childhood cancer remains substantially underdiagnosed. A landmark simulation-based analysis by Ward and colleagues estimated that 43% of all childhood cancer cases worldwide were undiagnosed in 2015 – equating to approximately 172 000 of an estimated 397 000 incident cases [3]. The burden of missed diagnoses falls disproportionately on sub-Saharan Africa (SSA) and south Asia, where over half of all childhood cancers are estimated to go undetected [3]. Africa is projected to account for nearly 50% of the global childhood cancer burden in children under 15 years by 2050 [4]. The consequences of under-diagnosis are severe: annually, nearly 90% of children who develop cancer in SSA die, compared with approximately 85% who survive in high-income countries (HICs) [5]. This survival gap is driven by delayed and missed diagnoses, inadequate diagnostic infrastructure, a shortage of paediatric oncology specialists, and high rates of treatment abandonment and toxicity [3,5].

These disparities prompted the World Health Organization (WHO) to launch the Global Initiative for Childhood Cancer (GICC) in 2018, with an ambitious target of achieving at least 60% survival for children with cancer globally by 2030[4]. In 2025, the GICC target was formally recognised as a public health priority in the political declaration of the United Nations General Assembly high-level meeting on non-communicable diseases, reflecting growing global commitment to closing the survival gap [6].

Despite this, modelling studies suggest that most low-income countries remain far from meeting the 60% survival threshold without substantial investment in health systems strengthening [3].

Within SSA, childhood cancers exhibit distinct epidemiological features compared to HICs. Infection-associated cancers – including Kaposi sarcoma, Burkitt lymphoma, Hodgkin lymphoma, and hepatocellular carcinoma – are relatively more prevalent in African settings, driven by high burdens of HIV, Epstein-Barr virus, and hepatitis B infection [7–9]. The nearly 1.7 million children living with HIV globally, of whom 91% reside in SSA, represent a particularly vulnerable population with elevated cancer risk [9]. At the same time, leukaemias and brain tumours are likely under-represented in registry data due to diagnostic barriers [8].

Childhood cancers have been identified as a national priority in South Africa, where a “Childhood Cancer Strategic Framework” is under development [10]. This combined 2022–2023 report is the fifth standalone report on childhood cancers from the NCR using the International Classification of Childhood Cancers Third Edition (ICCC-3) [11]. The report covers children aged 0–19 years, maintaining the expanded age definition introduced in the 2021 report to align with international standards and to capture the distinct cancer burden in adolescents, making their inclusion in paediatric surveillance frameworks both clinically and epidemiologically appropriate.

This report is intended to guide clinicians and policymakers in improving childhood cancer awareness, early detection, treatment access and outcomes across South Africa.

Background

During the 2022-2023 reporting period, South Africa’s population grew from approximately 62.3 million to 63.2 million, with children aged 0 - 19 years old comprising ≈34,1% of the population [12].

The distribution of males and females aged 0 - 19 years old is comparable (Figure 1).

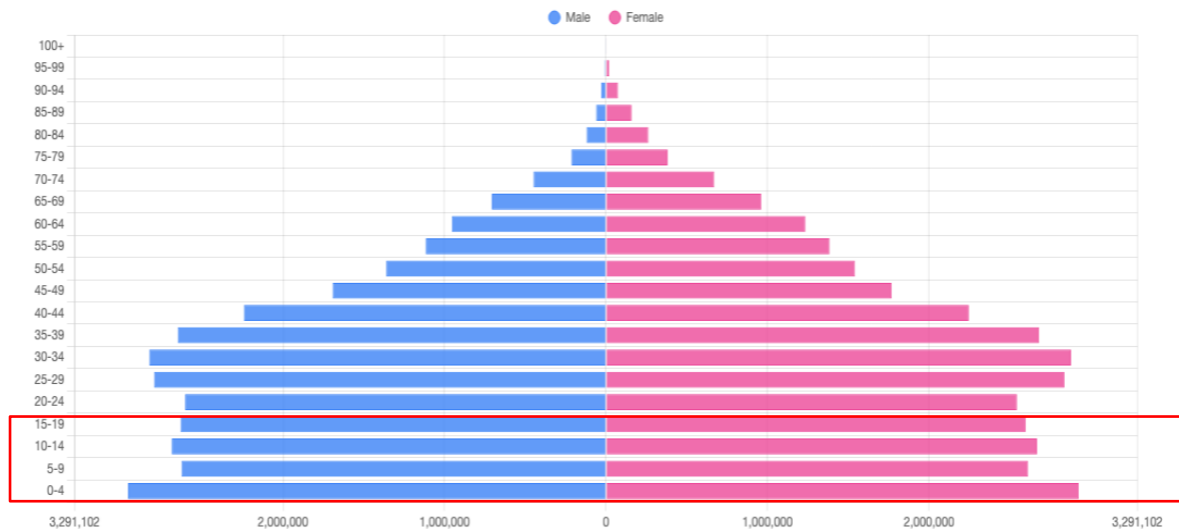


Figure 1: Population pyramid of South Africa, 2023. Age groups 0-19 years highlighted in red.

In South Africa, there are 13 paediatric oncology units housed within the public sector health facilities in the country as of 2023. Figure 2 shows the distribution of paediatric oncology units within the public health sector of South Africa.

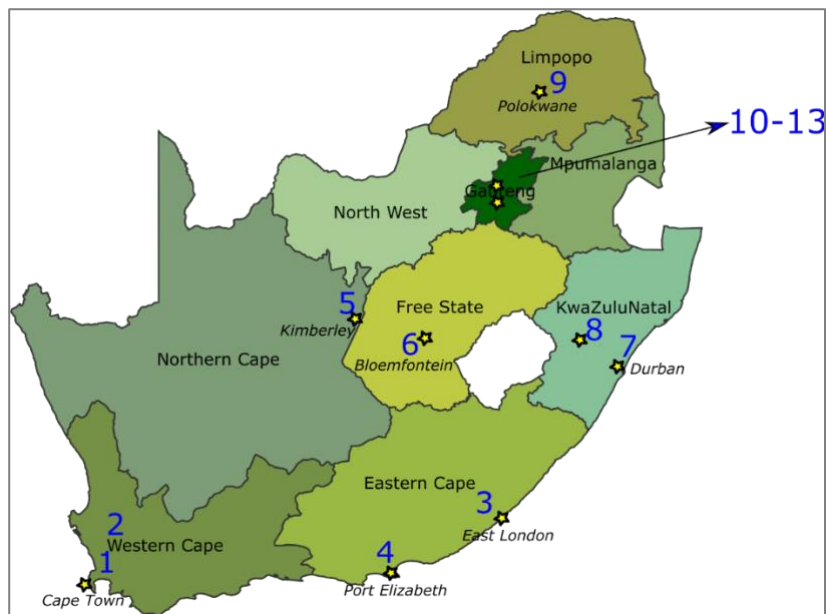


Figure 2: Distribution of major public health facilities with paediatric oncology units in South Africa, 2022-23.

The sites are (1) Red Cross War Memorial Children’s Hospital (2) Tygerberg Hospital (3) Frere Hospital (4) Port Elizabeth Provincial Hospital (5) Robert Mangaliso Sobukwe Hospital (6) Universitas Academic Hospital (7) Inkosi Albert Luthuli Central Hospital (8) Greys Hospital (9) Pietersburg Hospital (10) Charlotte Maxeke Johannesburg Academic Hospital (11) Chris Hani Baragwanath Academic Hospital (12) Steve Biko Academic Hospital (13) Dr George Mukhari Academic Hospital

METHODS

Data sources

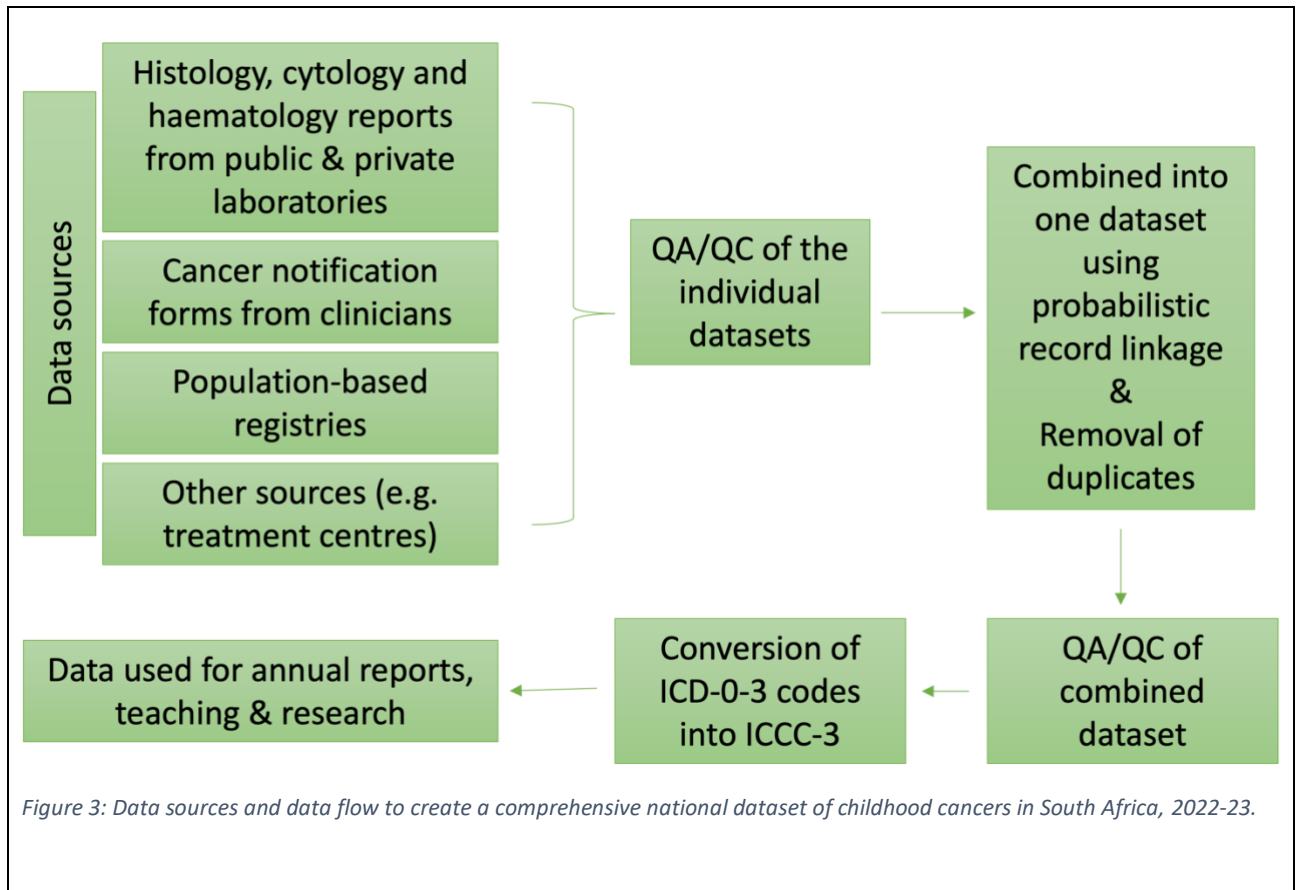
The NCR currently includes all reported pathologically-diagnosed cases of childhood cancers (0 - 19 years) within the annual pathology-based cancer incidence report using the International Classification of Diseases for Oncology Third Edition (ICD-O-3) classification system. The pathology-based cancer registry includes data from both private and public laboratories. However, this is an under-estimation of incidence as it only captures cancers diagnosed pathologically (histology, cytology, bone marrow aspirate or trephine). The population-based cancer registries (PBCRs) also reports on all childhood cancer cases identified through both active and passive case finding as detailed in the PBCR reports [13,14].

The NCR has set up a dedicated email for direct reporting of paediatric cancers from healthcare workers. These cancer notifications sent by paediatric oncologists, from both private and public sector hospitals, are a valuable data source as it allows cases to be identified that may have been diagnosed without a pathology report, or cases diagnosed outside of the population-based registries demarcations. For the 2022–2023 combined report, data integration was further expanded through the inclusion of additional sources – an NGO that specifically provides support to children with cancer nationally, and a treatment centre with branches across the country that predominantly treats patients in private sector.

The data from the these sources were combined to create one comprehensive national dataset (Figure 3) through probabilistic record linkage due to the absence of a unique patient identifier in the South African healthcare system. Duplicate cases were removed. All new cancer cases diagnosed from 01 January 2022 to 31 December 2023 were included. Furthermore, these cases were checked against the previous datasets to ensure reporting of only new cases within the years. Cases that were not

South African residents were excluded i.e. specimens sent to laboratories from other countries or patients with home address based in other countries.

Using the ICD-0-3, the cancers have been classified into 12 main groups and 48 sub-groups according to the third edition of the International Classification of Childhood Cancer (ICCC-3) [11]. The 12 main groups are I. Leukaemias, myeloproliferative diseases, and myelodysplastic diseases (*Leukaemias*) II. Lymphomas and reticuloendothelial neoplasms (*Lymphomas*), III. Central Nervous System (CNS) and miscellaneous intracranial and intraspinal neoplasms (*malignant CNS tumours*), IV. Neuroblastoma and other peripheral nervous cell tumours (*Sympathetic nervous system tumours*), V. Retinoblastomas (*Retinoblastomas*), VI. Renal tumours (*Renal tumours*), VII. Hepatic tumours (*Hepatic tumours*), VIII. Malignant bone tumours (*Malignant bone tumours*), IX. Soft tissue and other extraosseous sarcomas (*Soft tissue sarcomas*), X. Germ cell tumours, trophoblastic tumours, and neoplasms of gonads (*Germ cell tumours*), XI. Other malignant epithelial neoplasms and malignant melanomas (*Malignant epithelial neoplasms*), and XII. Other and unspecified malignant neoplasms (*Other and unspecified malignant tumours*).



Confidentiality

The NCR adheres to the National Health Laboratory Services (NHLS), the International Agency for Research on Cancer/International Association of Cancer Registries (IARC/IACR) guidelines and the Protection of Personal Information Act (POPI Act) to ensure the preservation of confidentiality [15]. Cancer statistics are released in an anonymised and aggregated format in annual reports published on the NCR website.

Statistical Methods

The results are presented as:

- the number of new cancer cases,
- the percentage of all new cancer cases,
- Age-Specific Incidence rates (ASIR) per million

- Age-Standardised Incidence Rate (ASR) per million

The results are further stratified by:

- sex (Male and Female),
- by ICCC-3 groups and sub-groups
- age groups (4-year interval e.g. 0 - 4 years, 5 - 9, 10 – 14, 15 - 19)

For Age standardization, the Segi-World Standard Population (WSP) is used as per international cancer registration norms. STATSSA mid-year population data for South Africa is used as a denominator.

The Calculation methods are as follows:

$$\begin{aligned}
 \text{Crude} &= \frac{\text{Number of new cases}}{\text{Mid-year population}} \times 1,000,000 \\
 \text{WSP weighting} &= \frac{\text{WSP (for each age group)}}{\text{Total WSP for all age groups}} \\
 \text{ASR} &= \text{Crude} \times \text{WSP weighting}
 \end{aligned}$$

RESULTS

A total of 3 032 cancers were diagnosed in children aged 0–19 years old in South Africa over the combined 2022–2023 period, with 1 525 cases in year 2022 and 1 507 cases in 2023 (Table 1). This equated to an overall age-standardised rate of 68.4 cases per million (95% CI: 60.6–77.0) (Table 3). The overall increase of cases from year 2021 was ± 200 cases for both 2022 and 2023. Incidence rates were higher in boys compared to girls, with an overall male-to-female ratio of 1.4:1 (Table 2) . Approximately 33% of the cases (n=991) were diagnosed in children aged 0–4 years old, followed by the 15–19 year age group (n=698; 23%). The 2022–2023 dataset indicates that the NCR pathology registry alone captured 63.6% of all childhood cancers; the remaining 36.4% (n=1 100) were identified

only through additional data sources, highlighting the essential contribution of multi-source data integration to national childhood cancer surveillance.

Table 1: Number and relative frequency of childhood cancer cases by age group and year of diagnosis, South Africa, 2022–2023

	2022 (n)	(%)	2023 (n)	%	Total	%
0 - 4 years	506	(33.2)	485	(32.2)	991	(32.7)
5 - 9 years	335	(22.0)	317	(21.0)	652	(21.5)
10 – 14 years	354	(23.2)	337	(22.4)	691	(22.8)
15 – 19 years	330	(21.6)	368	(24.4)	698	(23.0)
Total	1 525	(100)	1 507	(100)	3 032	(100)

Cancer Incidence by type

The most common cancer diagnosed in children was leukaemia, which accounted for 18% of all cancers diagnosed in children aged 0–19 years, with an ASR of 12.58 per million children (95% CI: 11.55–13.67) (Table 2). Of the leukaemias, lymphoid leukaemias were the most commonly diagnosed (Table 3) with an ASR of 9.6 per million (95% CI: 8.7–10.5), with the highest incidence in the 0–4 years age group (13.1 per million) and the 5–9 years age group (12.2 per million).

Lymphomas were the second most common cancer group diagnosed in children, with the highest number of cases (n=183) occurring in the 15–19 years age group (Table 2). Hodgkin lymphomas and Non-Hodgkin lymphomas (except Burkitt lymphoma) were the most common types of lymphomas diagnosed. CNS tumours were the third most common cancer group (n=390; 13%), consistent with prior years. Other specified malignant neoplasms represented the least commonly diagnosed group in this report period.

Cancer Incidence by sex

Of the 3 032 cancers diagnosed over the combined 2022–2023 period, 58.5% (n=1 780) were diagnosed in boys and 41.2% (n=1 253) were diagnosed in girls. The overall male-to-female ratio was 1.4:1 (Table 2). There were 7 cases (0.23%) with unknown sex.

Lymphoid leukaemias and nephroblastomas were among the top five commonly diagnosed cancers in both boys and girls. Non-Hodgkin lymphomas (except Burkitt lymphoma) and Hodgkin lymphomas featured prominently in boys, while malignant gonadal germ cell tumours were more common in girls, consistent with global trends. Table 1 shows the most commonly diagnosed childhood cancers by sex.

Table 2: Most commonly diagnosed childhood cancers by sex, South Africa, 2022-2023

Boys	n	(%)
(Ia) Lymphoid leukaemias	254	15.2
(IIa) Hodgkin lymphomas	147	8.8
(VIa) Nephroblastoma and other nonepithelial renal tumours	135	8.1
(VIIIa) Osteosarcomas	130	7.8
(IIb) Non-Hodgkin lymphomas (except Burkitt lymphoma)	114	6.8
Girls	n	(%)
(Ia) Lymphoid leukaemias	164	12.2
(VIa) Nephroblastoma and other nonepithelial renal tumours	148	11.0
(VIIIa) Osteosarcomas	97	7.2
(XIf) Other and unspecified carcinomas	75	5.6
(IIb) Non-Hodgkin lymphomas (except Burkitt lymphoma)	73	5.4

Table 3: Cancer Incidence for children 0-19 years old by main cancer groups as defined by the 12 main groups per the ICCC-3, South Africa (2022-2023).

Cancer Group	Number of cases							Rates per Million										
							Median age at diagnosis	Ratio (M/F)	Age-Specific Rates									
	Age 0-4	Age 5-9	Age 10-14	Age 15-19	All ages	All (%)			ASIR 0-4	ASIR 5-9	ASIR 10-14	ASIR 15-19	Crude	ASR	LCL	UCL		
I. Leukaemias, myeloproliferative diseases, and myelodysplastic diseases	192	174	138	48	552	18	6.9	1.5	16.3	15.5	12.0	4.6	12.3	12.5	11.5	13.6		
II. Lymphomas and reticuloendothelial neoplasms	65	108	129	183	485	16	12.8	1.9	5.5	9.6	11.2	17.6	10.8	10.6	9.6	11.5		
III. CNS and miscellaneous intracranial and intraspinal neoplasms	129	108	106	46	389	13	8.2	1.2	11.0	9.6	9.2	4.4	8.7	8.8	7.9	9.7		
IV. Neuroblastoma and other peripheral nervous cell tumours	87	29	10	0	126	4	3.3	1.3	7.4	2.6	0.9	0.0	2.8	3.1	2.5	3.6		
V. Retinoblastoma	140	11	4	0	155	5	2.0	1.2	11.9	1.0	0.3	0.0	3.5	3.9	3.3	4.6		
VI. Renal tumours	199	70	20	13	302	10	3.9	0.9	16.9	6.2	1.7	1.3	6.7	7.3	6.5	8.2		
VII. Hepatic tumours	29	6	5	7	47	2	3.1	0.7	2.5	0.5	0.4	0.7	1.0	1.1	0.8	1.5		
VIII. Malignant bone tumours	16	38	96	120	270	9	14.3	1.4	1.4	3.4	8.4	11.6	6.0	5.7	5.1	6.5		
IX. Soft tissue and other extraosseous sarcomas	70	61	77	87	295	10	11.1	1.2	5.9	5.4	6.7	8.4	6.6	6.5	5.8	7.3		

X. Germ cell tumours, trophoblastic tumours, and neoplasms of gonads	27	16	35	45	123	4	12.2	0.6	2.3	1.4	3.0	4.3	2.7	2.7	2.2	3.2
XI. Other malignant epithelial neoplasms and malignant melanomas	28	24	57	119	228	8	15.1	0.9	2.4	2.1	5.0	11.5	5.1	4.9	4.3	5.6
XII. Other and unspecified malignant neoplasms	9	7	14	30	60	2	14.8	1.5	0.8	0.6	1.2	2.9	1.3	1.3	1.0	1.7
Total	991	652	691	698	3032	100	9.0	1.4:1	84.2	57.9	60.2	67.2	67.6	68.4	60.6	77.0

Ratio (M/F): male-to-female ratio

ASIR: Age-specific incidence rates per million

Crude: crude rates expressed per million aged 0-19 years

ASR: age-standardized incidence rate per million (World Standard population)

LCL: Lower 95% confidence intervals for the ASR

UCL: Upper 95% confidence intervals for the ASR

Table 4: Cancer incidence for children 0 – 19 years old by sub-groups as defined by the ICCC-3, South Africa (2022-2023)

Cancer type	Number of cases							Rates per Million				Crude	ASR	LCL	UCL	
	Age 0-4	Age 5-9	Age 10-14	Age 15 - 19	All ages (n)	All ages (%)	Ratio (M/F)	Age-Specific Rates								
								Age 0-4	Age 5-9	Age 10-14	Age 15-19					
I. Leukaemias, myeloproliferative diseases, and myelodysplastic diseases																
(Ia) Lymphoid leukaemias	154	136	98	32	420	14	1.5	13.1	12.1	8.5	3.1	9.4	9.6	8.7	10.5	
(Ib) Acute myeloid leukaemias	27	19	24	4	74	2	1.4	2.3	1.7	2.1	0.4	1.6	1.7	1.3	2.1	
(Ic) Chronic myeloproliferative diseases	3	9	4	6	22	1	1.0	0.3	0.8	0.3	0.6	0.5	0.5	0.3	0.7	
(Id) Myelodysplastic syndrome and other myeloproliferative diseases	2	1	4	0	7	0	2.5	0.2	0.1	0.3	0.0	0.2	0.2	0.1	0.3	
(Ie) Unspecified and other specified leukaemias	6	9	8	6	29	1	1.1	0.5	0.8	0.7	0.6	0.6	0.6	0.4	0.9	
II. Lymphomas and reticuloendothelial neoplasms																
(IIa) Hodgkin lymphomas	6	46	74	94	220	7	2.0	0.5	4.1	6.4	9.1	4.9	4.7	4.1	5.3	
(IIb) Non-Hodgkin lymphomas (except Burkitt lymphoma)	31	33	44	79	187	6	1.6	2.6	2.9	3.8	7.6	4.2	4.1	3.5	4.7	
(IIc) Burkitt lymphoma	16	21	5	5	47	2	3.6	1.4	1.9	0.4	0.5	1.0	1.1	0.8	1.4	
(IId) Miscellaneous lymphoreticular neoplasms	9	4	3	2	18	1	1.6	0.8	0.4	0.3	0.2	0.4	0.4	0.2	0.7	
(IIe) Unspecified lymphomas	3	4	3	3	13	0	1.6	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.5	
III. CNS and miscellaneous intracranial and intraspinal neoplasms																
(IIIa) Ependymomas and choroid plexus tumour	30	13	14	3	60	2	1.5	2.5	1.2	1.2	0.3	1.3	1.4	1.1	1.8	
(IIIb) Astrocytomas	17	24	28	14	83	3	1.4	1.4	2.1	2.4	1.4	1.8	1.8	1.4	2.3	
(IIIc) Intracranial and intraspinal embryonal tumours	29	25	21	8	83	3	1.5	2.5	2.2	1.8	0.8	1.8	1.9	1.5	2.3	
(IIId) Other gliomas	26	20	16	3	65	2	0.8	2.2	1.8	1.4	0.3	1.4	1.5	1.1	1.9	
(IIIe) Other specified intracranial and intraspinal neoplasms	23	24	23	9	79	3	1.1	2.0	2.1	2.0	0.9	1.8	1.8	1.4	2.2	

(IIIff) Unspecified intracranial and intraspinal neoplasms	4	2	4	9	19	1	0.3	0.3	0.2	0.3	0.9	0.4	0.4	0.3	0.7
IV. Neuroblastoma and other peripheral nervous cell tumours															
(IVa) Neuroblastoma and ganglioneuroblastoma	85	26	7	0	118	4	1.3	7.2	2.3	0.6	0.0	2.6	2.9	2.4	3.5
(IVb) Other peripheral nervous cell tumours	2	3	3	0	8	0	3.0	0.2	0.3	0.3	0.0	0.2	0.2	0.1	0.3
V. Retinoblastoma															
(V) Retinoblastoma	140	11	4	0	155	5	1.2	11.9	1.0	0.3	0.0	3.5	3.9	3.3	4.6
VI. Renal tumours															
(VIa) Nephroblastoma and other nonepithelial renal tumours	197	67	15	5	284	9	0.9	16.7	5.9	1.3	0.5	6.3	6.9	6.1	7.8
(VIb) Renal carcinomas	2	3	5	8	18	1	0.6	0.2	0.3	0.4	0.8	0.4	0.4	0.2	0.6
(VIc) Unspecified malignant renal tumours	0	0	0	0	0	0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
VII. Hepatic tumours															
(VIIa) Hepatoblastoma	28	4	3	1	36	1	0.9	2.4	0.4	0.3	0.1	0.8	0.9	0.6	1.2
(VIIb) Hepatic carcinomas	1	2	1	6	10	0	0.3	0.1	0.2	0.1	0.6	0.2	0.2	0.1	0.4
(VIIc) Unspecified malignant hepatic tumours	0	0	1	0	1	0	-	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
VIII. Malignant bone tumours															
(VIIIa) Osteosarcomas	7	23	89	108	227	7	1.3	0.6	2.0	7.8	10.4	5.1	4.8	4.2	5.4
(VIIIb) Chondrosarcomas	0	3	0	4	7	0	2.5	0.0	0.3	0.0	0.4	0.2	0.2	0.1	0.3
(VIIIc) Ewing tumour and related sarcomas of bone	8	9	7	6	30	1	1.5	0.7	0.8	0.6	0.6	0.7	0.7	0.5	1.0
(VIIId) Other specified malignant bone tumours	1	3	0	1	5	0	1.5	0.1	0.3	0.0	0.1	0.1	0.1	0.0	0.3
(VIIIe) Unspecified malignant bone tumours	0	0	0	1	1	0	-	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
IX. Soft tissue and other extrasosseous sarcomas															
(IXa) Rhabdomyosarcomas	42	36	28	25	131	4	1.2	3.6	3.2	2.4	2.4	2.9	3.0	2.5	3.5
(IXb) Fibrosarcomas, peripheral nerve sheath tumours, and other fibrous neoplasms	4	4	8	4	20	1	0.4	0.3	0.4	0.7	0.4	0.4	0.4	0.3	0.7
(IXc) Kaposi sarcoma	5	8	7	8	28	1	1.0	0.4	0.7	0.6	0.8	0.6	0.6	0.4	0.9
(IXd) Other specified soft tissue sarcomas	14	10	17	34	75	2	1.6	1.2	0.9	1.5	3.3	1.7	1.6	1.3	2.1
(IXe) Unspecified soft tissue sarcomas	5	3	17	16	41	1	1.3	0.4	0.3	1.5	1.5	0.9	0.9	0.6	1.2

X. Germ cell tumours, trophoblastic tumours, and neoplasms of gonads																
(Xa) Intracranial and intraspinal germ cell tumours	2	0	1	3	6	0	5.0	0.2	0.0	0.1	0.3	0.1	0.1	0.0	0.3	
(Xb) Malignant extracranial and extragonadal germ cell tumours	2	0	2	4	8	0	1.7	0.2	0.0	0.2	0.4	0.2	0.2	0.1	0.3	
(Xc) Malignant gonadal germ cell tumours	23	14	28	30	95	3	0.5	2.0	1.2	2.4	2.9	2.1	2.1	1.7	2.6	
(Xd) Gonadal carcinomas	0	0	3	4	7	0	0.8	0.0	0.0	0.3	0.4	0.2	0.1	0.1	0.3	
(Xe) Other and unspecified malignant gonadal tumours	0	2	1	4	7	0	0.2	0.0	0.2	0.1	0.4	0.2	0.2	0.1	0.3	
XI. Other malignant epithelial neoplasms and malignant melanomas																
(XIa) Adrenocortical carcinomas	2	0	1	1	4	0	0.3	0.2	0.0	0.1	0.1	0.1	0.1	0.0	0.2	
(XIb) Thyroid carcinomas	0	2	5	15	22	1	0.5	0.0	0.2	0.4	1.5	0.5	0.5	0.3	0.7	
(XIc) Nasopharyngeal carcinomas	0	0	4	12	16	1	1.7	0.0	0.0	0.3	1.2	0.4	0.3	0.2	0.6	
(XId) Malignant melanomas	3	1	3	12	19	1	0.8	0.3	0.1	0.3	1.2	0.4	0.4	0.3	0.7	
(XIe) Skin carcinomas	1	4	5	16	26	1	1.4	0.1	0.4	0.4	1.5	0.6	0.6	0.4	0.8	
(XIf) Other and unspecified carcinomas	22	17	39	63	141	5	0.9	1.9	1.5	3.4	6.1	3.1	3.1	2.6	3.6	
XII. Other and unspecified malignant neoplasms																
(XIIa) Other specified malignant tumours	2	1	2	1	6	0	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.3	
(XIIb) Other unspecified malignant tumours	7	6	12	29	54	2	1.8	0.6	0.5	1.0	2.8	1.2	1.2	0.9	1.5	
Total	991	652	691	698	3032	100	1.4:1	84.2	57.9	60.2	67.2	67.6	68.4	60.6	77.0	

Ratio (M/F): male-to-female ratio

ASIR: Age-specific incidence rates per million

Crude: crude rates expressed per million aged 0-19 years

ASR: age-standardized incidence rate per million (World Standard population)

LCL: Lower 95% confidence intervals for the ASR

UCL: Upper 95% confidence intervals for the ASR

Cancer Incidence by age-groups

The majority of childhood cancers were diagnosed in children aged 0–4 years (n=991; 32.7%) (Table 2). The age-specific incidence rates were highest in children aged 0–4 years (84.2 per million), consistent with global patterns [14]. The lowest rates were found in the 5–9 years age group (58.3 per million). The annual incidence of the most common cancers by age group is shown in Table 4.

Lymphoid leukaemias were found across all age groups (14.0%–20.8%). Nephroblastoma and retinoblastoma were the leading cancers in the 0–4 year group, while Hodgkin lymphoma, Non-Hodgkin lymphoma, and osteosarcoma were most prominent in the older age groups. Osteosarcoma was the leading cancer in the 15–19 year age group (n=108; 15.3%), consistent with global trends that osteosarcoma peaks in adolescence [15].

Table 5: Most commonly diagnosed childhood cancers by age group, South Africa, 2022-2023.

Cancer Type	No. of cases	(%)
0 - 4 years		
(VIa) Nephroblastoma and other nonepithelial renal tumours	197	19.9
(Ia) Lymphoid leukaemias	154	15.5
(V) Retinoblastoma	140	14.1
(IVa) Neuroblastoma and ganglioneuroblastoma	85	8.5
(IXa) Rhabdomyosarcomas	42	4.2
5 - 9 years		
(Ia) Lymphoid leukaemias	136	20.8
(VIa) Nephroblastoma and other nonepithelial renal tumours	67	10.2
(IIa) Hodgkin lymphomas	46	7.0
(IXa) Rhabdomyosarcomas	36	5.6
(IIb) Non-Hodgkin lymphomas (except Burkitt lymphoma)	33	5.0
10 - 14 years		
(Ia) Lymphoid leukaemias	98	14.2
(VIIIa) Osteosarcomas	89	12.8
(IIa) Hodgkin lymphomas	74	10.6
(IIb) Non-Hodgkin lymphomas (except Burkitt lymphoma)	44	6.3
(XIc) Other and unspecified carcinomas	39	5.6
15-19 years		
(VIIIa) Osteosarcomas	108	15.4
(IIa) Hodgkin lymphomas	94	13.4
(IIb) Non-Hodgkin lymphomas (except Burkitt lymphoma)	79	11.3
(XIc) Other and unspecified carcinomas	63	9.0
(IXd) Other specified soft tissue sarcomas	34	4.9

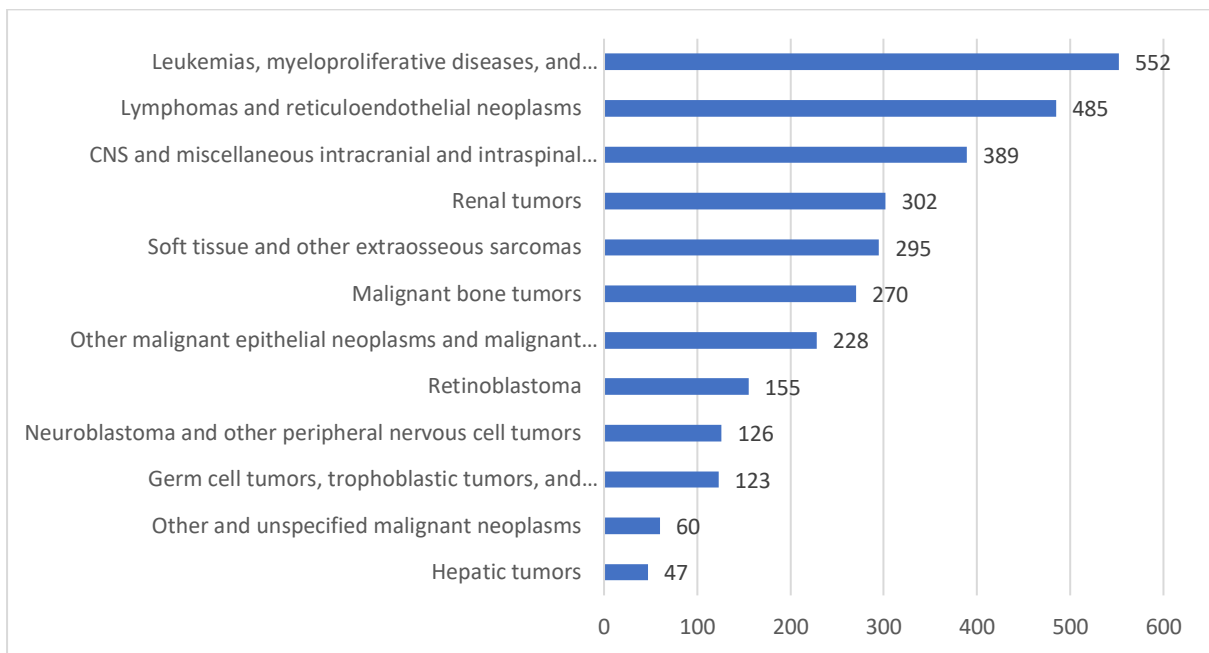


Figure 4: Number of childhood cancer cases per main group as classified by the ICCC-3, South Africa, 2022-2023.

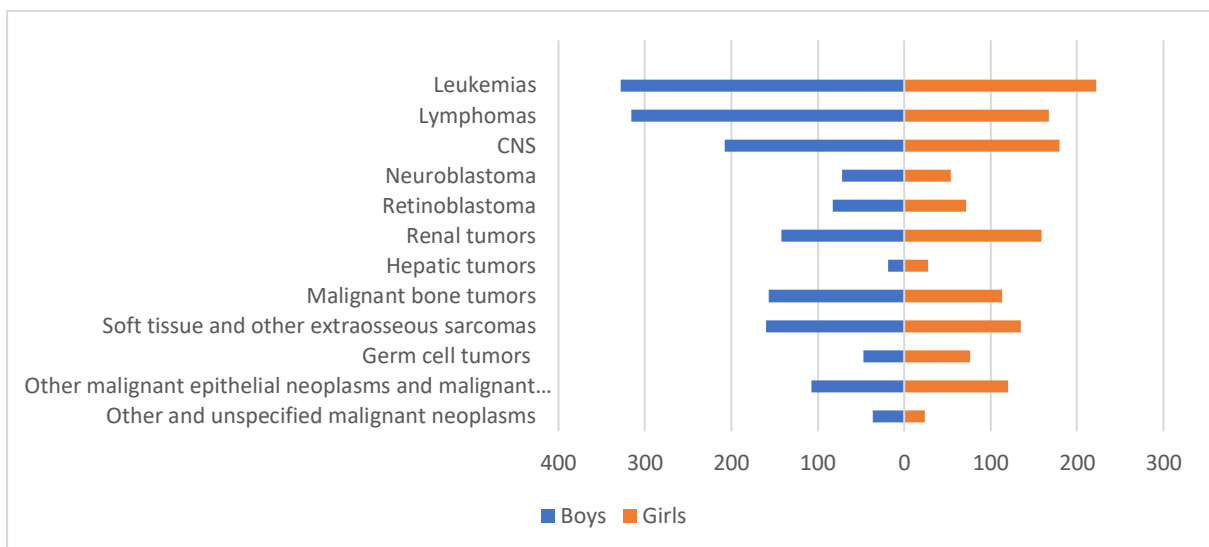


Figure 5: Distribution of childhood cancers by cancer type and sex, South Africa, 2022-2023

Cancer Incidence by population group

This report examines the distribution of cancers across population groups. Lymphoid leukaemias were the most common cancer type across all population groups (Figure 6). There were 72 (2.3%) cases where population group could not be assigned, highlighting the need to improve collection of demographic details from the source for more in-depth analysis.

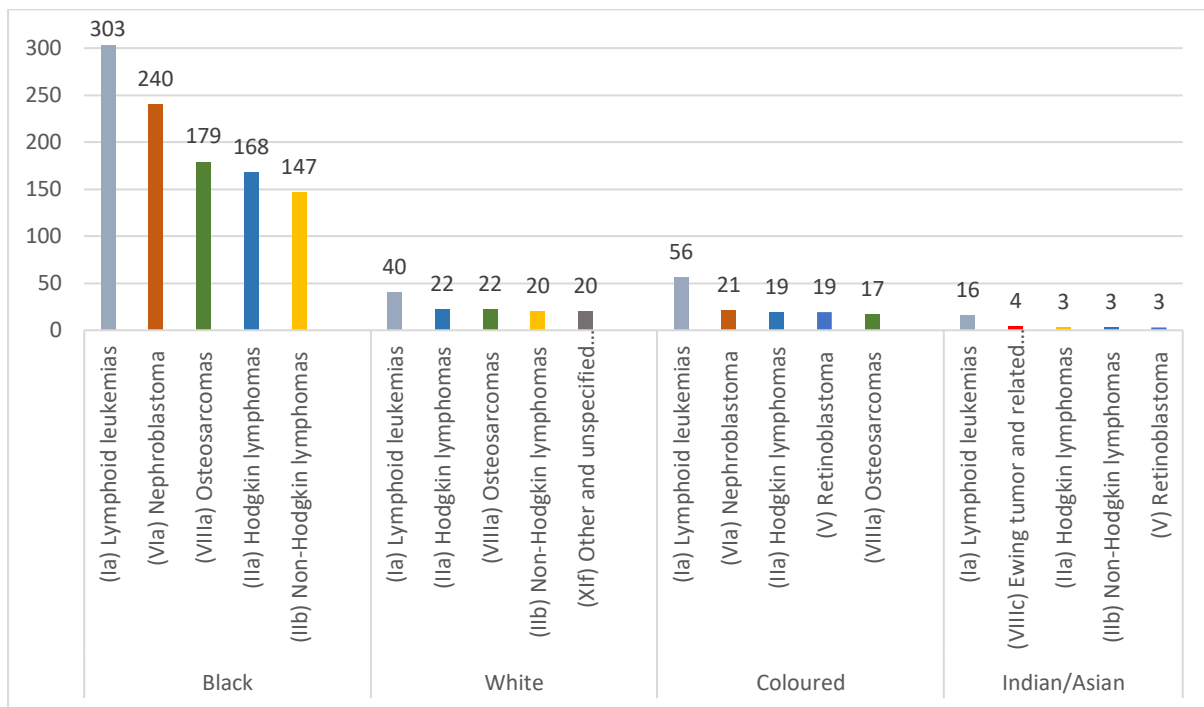


Figure 6: Top five cancers, as per ICCC-3 subgrouping, per population group in children aged 0-19 years in South Africa, 2022-2023

Cancer Cases by Data Source

A key finding of the 2022–2023 dataset is the significant contribution of additional data sources beyond the NCR pathology registry. As shown in the Table 6, the NCR pathology registry alone captured 63.6% of all cases (n=1 932 of 3 032). Of the 1 642 cases identified from only a single source, 56.5% were captured by NCR – meaning 43.5% (n=714) of these single-source cases were identified only through additional data sources and would have been entirely invisible to national cancer surveillance without these additional data streams. Overall, there were 1 100 cases (36.3%) that were not identified within the NCR pathology registry at all and these cases may have been found across one/two or three other data sources. Of the cases 1100 cases missed by the NCR, 50% (n=556) were leukaemias and CNS tumours.

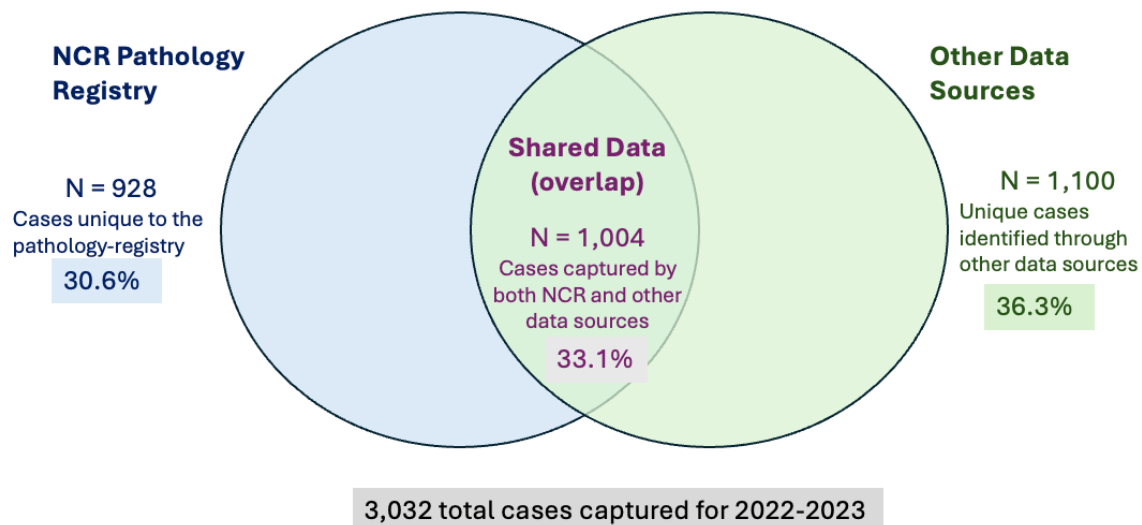


Figure 7: Distribution of childhood cancer cases by reporting source for the years 2022-2023. Of the total of 3032 cases, 36.3% of the cases would have been missed by the NCR pathology registry thus highlighting the importance of multi-source data integration for a comprehensive national surveillance system.

Table 6: Breakdown of childhood cancer cases by reporting source and NCR pathology registry capture rate, South Africa, 2022–2023

Number of sources reporting the case	Cases (N)	% of total	Of these, in NCR pathology registry	NCR pathology capture rate
1 source only	1642	54.0	928	56.5%
2 sources	1298	43.0	914	70.4%
3 sources	91	3.0	89	97.8%
4 sources	1	0.03	1	100.0%
Total	3 032	100%	1 932	63.6%

DISCUSSION

This is the fifth annual report on childhood cancer incidence by the National Cancer Registry of South Africa, presented as a combined 2022–2023 report. A total of 3 032 cancer cases were recorded in children aged 0–19 years old over the two-year period, with an overall ASR of 68.4 per million. This

represents a continued upward trend compared to ASRs of 57.7 per million (2019), 62.4 per million (2020), and 63.5 per million (2021), reflecting improved completeness through the integration of additional data sources rather than a true increase in incidence.

Consistent with all previous NCR childhood cancer reports, leukaemias (18%) remained the most common cancer group diagnosed, followed by lymphomas (16%). This is in line with prior reports on childhood cancers in South Africa [16,17]. The combined number of CNS tumours reported over 2022–2023 (n=390; 13%) continues to lag behind the global trend of CNS tumours being the second most commonly diagnosed childhood cancer [8,17]. This likely reflects ongoing under-reporting in this category, making clinician-submitted notifications particularly critical for completeness in this group. Soft tissue sarcomas (n=295; 10%) and renal tumours (n=302; 10%) were the fourth and fifth most common cancer groups, with rhabdomyosarcomas as the most common soft tissue sarcoma subtype. Renal tumours, predominantly nephroblastoma, were most prevalent in the 0–4 years age group, consistent with global trends [18]. However, the 5–9 age group had 67 cases of nephroblastoma with an ASIR of 5.9 million which is higher than the global ASIR of 4.2 per million for this age group [19]. This aligns with the well-documented pattern of late presentation of nephroblastomas in SSA, where advanced-stage disease at diagnosis is common; and higher count of cases in age group older than 0–4 years is an indicator of delayed diagnosis [19,20]. Malignant bone tumours (n=270; 9%) were notably elevated compared to prior years, driven largely by osteosarcoma, which showed the highest incidence in the 15–19 year age group (n=108), in line with global patterns for peak incidence in adolescence [21]. Kaposi sarcoma, an AIDS-defining cancer, was again most common in the 15–19 year age group, reflecting the continued impact of HIV on cancer patterns in South Africa.

Most childhood cancer cases were diagnosed in children aged 0–4 years old (n=991; 32.7%). The age-specific incidence rates were the highest in children aged 0–4 years (84.2 per million), consistent with global patterns [18]. Globally, the most common cancer in children aged 0–4 years is leukaemia;

however, rates in sub-Saharan Africa (SSA) have consistently been lower than global rates [18]. The trend in South Africa mirrors SSA, where leukaemias were the most frequently diagnosed cancer in the 0–4 years age group but at comparatively lower rates. The overall male-to-female ratio of 1.4:1 in this combined report is somewhat higher than the 1.1:1 ratio reported in prior years. This may partly reflect differences in data completeness across sources and warrants monitoring in future reports. Consistent with global trends, a higher incidence of germ cell and gonadal tumours was observed in girls compared to boys [18].

A critical finding from the 2022–2023 dataset is the demonstrated value of multi-source data integration. The NCR pathology registry alone captured only 63.7% of all childhood cancer cases (n=1 932 of 3 032). The remaining 36.3% (n=1 100) were identified exclusively through supplementary sources. This highlights the irreplaceable role of notifications from the clinicians and reporting compliance from other data sources alongside passive pathology-based surveillance in achieving a complete national estimate. This proportion of missed cases underscores the need to continue strengthening multi-source data linkage and to work towards a more integrated national health information system. Although the number of contributing data sources has grown considerably over successive reporting periods, there remains room for further improvement in case ascertainment through the identification and onboarding of additional sources. A notable gap in the current dataset is the absence of data from the South African Children's Tumour Registry (SACTR), which has historically been an important source of childhood cancer data in South Africa.

Despite the inclusion of the 15–19 year age group since the 2021 report, the total number of cases has not increased as substantially as might be expected. The number of children in 10-14 years (n=691) and 15-19 years (n=698) are almost identical, which indicates that the 15-19 year old is being under-reported as typically there should be a spike in cancer cases in this age-group based on international trends [22] . In the South African context, this is likely attributable to the inconsistent definition of

'paediatric' across the health facilities. In many centres, adolescents aged 15 years and older may not be managed in paediatric oncology units and therefore falls out of the notification pathways that currently feed into the NCR childhood cancer registry. This highlights the need to extend partnerships to include other sources that treat adolescents aged 15–19, to achieve a more complete picture of cancer burden in this age group. Nonetheless, the continued inclusion of 15–19 year adolescents provides valuable information regarding cancer incidence in this age group as paediatric oncologists have identified the need for targeted interventions for adolescents to receive appropriate referral, treatment and follow-up within the South African healthcare setting.


Annual reports of childhood cancers by the NCR are a key step towards improving surveillance of childhood cancers and raising awareness of their incidence in South Africa. Efforts are ongoing to improve reporting by including information on staging and survival. These are currently limited by poor access to clinical information for staging and inconsistent reporting of vital status. The NCR continues to pursue additional partnerships to expand childhood cancer surveillance capacity across South Africa and the broader sub-Saharan African region.

REFERENCES

1. National Department of Health (South Africa). Regulations relating to cancer registration. National Health Act, 2003. 34248 South Africa: Government Gazette; 2011 p. 7.
2. Singh E, Ruff P, Babb C, Sengayi M, Beery M, Khoali L, et al. Establishment of a cancer surveillance programme: The South African experience. *Lancet Oncol.* 2015;16: e414–e421. doi:10.1016/S1470-2045(15)00162-X
3. Ward ZJ, Yeh JM, Bhakta N, Frazier AL, Atun R. Estimating the total incidence of global childhood cancer: a simulation-based analysis. *Lancet Oncol.* 2019;20: 483–493. doi:10.1016/S1470-2045(18)30909-4
4. World Health Organization (WHO). WHO GLOBAL INITIATIVE FOR CHILDHOOD CANCER. Geneva; 2018.
5. Lubega J, Chirande L, Atwine B, Davidson A, Kashaigili HJ, Kanyamuhunga A, et al. Addressing the childhood cancer crisis in sub-Saharan Africa. *Lancet Oncol.* 2023;24: 729–732. doi:10.1016/S1470-2045(23)00173-0
6. United Nations General Assembly. Political Declaration of the Fourth High-level Meeting on the Prevention and Control of Non-communicable Diseases and Mental Health. 2025.
7. Stefan DC. A better future for children with cancer in Africa: A dream transforming into reality Dr. D Cristina Stefan-AORTIC president. *Infectious Agents and Cancer.* BioMed Central Ltd.; 2019. doi:10.1186/s13027-019-0252-7
8. Parkin DM, Stefan C. Editorial: Childhood Cancer in sub-Saharan Africa. *Ecancermedicalscience.* 2017;11. doi:10.3332/ecancer.2017.ed69
9. Ngwa W, Addai BW, Adewole I, Ainsworth V, Alaro J, Alatise OI, et al. Cancer in sub-Saharan Africa: a Lancet Oncology Commission. *Lancet Oncol.* 2022;23: e251–e312. doi:10.1016/S1470-2045(21)00720-8
10. National Department of Health (South Africa). National Cancer Strategic Framework for South Africa 2017 - 2022. 2017.
11. Steliarova-foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer , Third Edition. American Cancer Society. 2005;103: 1457–1467. doi:10.1002/cncr.20910
12. Statistics South Africa. Stats in Brief, 2023. 2023. Available: www.statssa.gov.za
13. National Cancer Registry SA. Ekurhuleni population-based cancer registry 2023 Report. 2025. Available: www.ncr.ac.za.
14. Cancer and Infectious Disease Research Unit U of K-N. KwaZulu-Natal Population-Based Cancer Registry 2023 Report. 2025. Available: www.cideru.ukzn.ac.za
15. Parliament of the Republic of South Africa. Protection of Personal Information Act, 2013 Ensuring protection of your personal information and effective access to information.
16. Kruger M, Hendricks M, Davidson A, Stefan CD, Eyssen AL Van, Uys R, et al. Childhood Cancer in Africa. *Pediatric Blood Cancer.* 2014;61: 587–592. doi:DOI10.1002/pbc.24845
17. Stefan DC. Epidemiology of Childhood Cancer and the SACCSG Tumour Registry. *Cme.* 2010;28: 317–319.
18. Steliarova-Foucher E, Colombet M, Ries LAG, Moreno F, Dolya A, Bray F, et al. International incidence of childhood cancer, 2001–10: a population-based registry study. *Lancet Oncol.* 2017;18: 719–731. doi:10.1016/S1470-2045(17)30186-9
19. Cunningham ME, Klug TD, Nuchtern JG, Chintagumpala MM, Venkatramani R, Lubega J, et al. Global Disparities in Wilms Tumor. *Journal of Surgical Research.* 2020;247: 34–51. doi:10.1016/j.jss.2019.10.044
20. Stones DK, Hadley GP, Wainwright RD, Stefan DC. The Impact of Ethnicity on Wilms Tumor: Characteristics and Outcome of a South African Cohort. *Int J Pediatr.* 2015;2015: 1–5. doi:10.1155/2015/706058

21. Mirabello L, Troisi RJ, Savage SA. International osteosarcoma incidence patterns in children and adolescents, middle ages and elderly persons. *Int J Cancer*. 2009;125: 229–234. doi:10.1002/ijc.24320
22. Tang XW, Jiang J, Huang S, Shi XM, Xu H, Xu J, et al. Long-term trends in cancer incidence and mortality among U.S. children and adolescents: a SEER database analysis from 1975 to 2018. *Front Pediatr*. 2024;12. doi:10.3389/fped.2024.1357093

Appendix 1: Cancer Notification Form

	<p>health Department: Health REPUBLIC OF SOUTH AFRICA</p> <p>National Health Act, 2003 (Act No. 61 of 2003) Regulation Number 380</p>	<p>Republic of South Africa Department of Health</p> <p>CANCER REGISTRATION FORM</p>	<p>To be completed in duplicate in BLOCK LETTERS. Please mark with <input type="checkbox"/> the CORRECT box, where required. Original to be submitted to the National Cancer Register and copy to be retained. To be submitted to the National Cancer Register via: e-mail: cancer.registry@nhls.ac.za fax: 011 489 9132 / 011 489 9152 Post: P.O. Box 1038, Johannesburg, 2000.</p>
A. PARTICULARS OF INDIVIDUAL			
1. Name of facility <input style="width: 100%;" type="text"/>			
USE PATIENT STICKER if available			
2. Surname <input style="width: 100%;" type="text"/>			
3. Full names <input style="width: 100%;" type="text"/>			
4. Date of birth <input style="width: 20%;" type="text"/>			
5. Folder number <input style="width: 20%;" type="text"/>			
6. Sex <input type="checkbox"/> Male <input type="checkbox"/> Female			
7. ID number/Passport number <input style="width: 20%;" type="text"/>			
8. Race group <input type="checkbox"/> African <input type="checkbox"/> Coloured <input type="checkbox"/> White <input type="checkbox"/> Indian <input type="checkbox"/> Other _____			
9. Area of residence			
9.1 City/town/village <input style="width: 100%;" type="text"/>			
9.2 Postal code <input style="width: 10%;" type="text"/> 9.3 How long at this address? <input style="width: 5%;" type="text"/> years			
Please record place of birth if not the same as current address			
9.4 City/town/village <input style="width: 100%;" type="text"/>			
9.5 Postal code <input style="width: 10%;" type="text"/>			
B. RISK FACTOR PROFILE			
10. Usual occupation of patient <input style="width: 100%;" type="text"/> (If retired, give type of work done for most of working life)			
11. Type of industry/business <input style="width: 100%;" type="text"/> (eg Mining, farming etc)			
12. Did the patient ever smoke tobacco? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
13. Did the patient ever consume alcohol regularly? (that is, more than once a week) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
14. HIV status <input type="checkbox"/> Negative <input type="checkbox"/> Positive <input type="checkbox"/> Unknown			
C. CLINICAL AND LABORATORY DETAILS			
15. Date of diagnosis <input style="width: 20%;" type="text"/>			
16. Cancer diagnosis and Histology <input style="width: 80%;" type="text"/> <i>Please give all information available on the site, laterality, histology and behaviour of the tumour</i>			
17. ICD-10 <input style="width: 10%;" type="text"/> • <input style="width: 5%;" type="text"/>			
18. Grade <input type="checkbox"/> Well differentiated <input type="checkbox"/> Moderately differentiated <input type="checkbox"/> Poorly differentiated <input type="checkbox"/> Unknown/Not applicable			
19. Stage <input type="checkbox"/> Primary/localised <input type="checkbox"/> Metastatic <input type="checkbox"/> Unknown/Not applicable			
20. Invasiveness <input type="checkbox"/> In-situ <input type="checkbox"/> Invasive			
21. Basis of diagnosis <input type="checkbox"/> Clinical <input type="checkbox"/> Clinical with investigation <input type="checkbox"/> Cytology/histopathology <input type="checkbox"/> Molecular <input type="checkbox"/> Death Certificate			
22. Prescribed treatment <input type="checkbox"/> Surgery <input type="checkbox"/> Radiation <input type="checkbox"/> Chemotherapy <input type="checkbox"/> Other <input type="checkbox"/> Palliation <input type="checkbox"/> Alternative <input type="checkbox"/> None			
INFORMANT PARTICULARS		OFFICE CODING	
Name (Print) _____		<input style="width: 10%;" type="text"/> • <input style="width: 5%;" type="text"/>	
MP/NC Number <input style="width: 20%;" type="text"/>		M - <input style="width: 10%;" type="text"/> / <input style="width: 5%;" type="text"/> / <input style="width: 5%;" type="text"/>	
Signature _____		Date _____	

Appendix 2: Sites cancer notification forms received from (paediatric cases), 2022-2023

- Chris Hani Baragwanath Academic Hospital
- Charlotte Maxeke Johannesburg Academic Hospital
- Ethekewini Hospital and Heart Complex
- Frere Hospital
- Greys Hospital
- Inkosi Albert Luthuli Central Hospital
- Netcare Clinton Hospital
- P.E. Provincial Hospital (Paediatric Oncology)
- Robert Mangaliso Sobukwe Hospital
- Steve Biko Academic Hospital
- Tygerberg Hospital
- Universitas Hospital
- Wits Donald Gordan Medical Centre
- Red Cross War Memorial Children's Hospital
- Stanger Hospital
- Polokwane Hospital
- South African Oncology Consortium
- ICON Oncology
- Childhood Cancer Foundation South African