National Strategic Plan on Prevention and Control of Cancer in Sri Lanka (2020-2024)

National Cancer Control Programme
Ministry of Health, Sri Lanka

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Message from the Deputy Director General – Non Communicable Diseases

National response for cancer prevention and control of Sri Lanka needs to accelerate the process to achieve the sustainable goals and national targets. The Goal of the national cancer control strategy is to reduce the incidence of preventable cancers, detect early detectable cancers and provide continuum of care to all cancer patients in an equitable manner. It is in line with prevention and control of cancers and Universal Access to services. Continuing this progress, the Ministry of Health Sri Lanka, lead the process of developing this National Strategic Plan with broader stakeholder consultation. The National Strategic Plan 2020-2024 (NSP) consists of strategies, details of activities and results frame work, which sets out the overarching goals for the response to cancer prevention and control, as well as reaffirming Sri Lanka's commitment to a multi-sector response. The NSP will serve as guiding document for Sri Lanka to achieve Universal Health Coverage by 2030 which is embedded in the Sustainable Development Goals (SDG). This ensures that all individuals and communities receive cancer care they need without suffering financial hardships, with coverage of full spectrum of essential quality health services, from health promotion, prevention, treatment, rehabilitation and palliative care.

We must all review our working methods with the aim of becoming more effective and more coherent in our common efforts. This document provides a strong orientation and is now our responsibility to rise to the challenge and combine the necessary individual and collective resources in our drive towards achieving targets of prevention and control of cancer.

I acknowledge the National Cancer Control Programme and contributions of all stakeholders and the World Health Organization for their technical partnership. We look forward to work with other ministries, development partners, private sector and other stakeholders of the civil society to support the implementation of this National Strategy that focuses on the areas of greatest need that provides a clear direction for moving forward together.

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Forward

According to GLOBOCAN estimates (2018), each year 23,530 new cancer cases and 14,013 cancer related deaths are recorded in Sri Lanka. New cancer patient registration at the 24 Government Cancer Treatment Centers from year 2008 to year 2019 has been doubled from 19,309 to 35,107. Accelerating the activities to improve and strengthen the prevention, screening, early diagnosis, treatment and palliative care have been identified as a key strategy to improve cancer care in Sri Lanka. This has been recommended by the Cancer Control Capacity and Needs Assessment (imPACT Review) conducted by the International Atomic Energy Agency and the World Health Organization in 2019. This has been further identified by the comprehensive situational assessments of all cancer care hospitals conducted in 2020 by the National Cancer Control Programme.

I am pleased to present the National Strategic Plan and detailed activity plan with the results framework on cancer control and prevention in Sri Lanka 2020-2024 This will be the guiding document for Sri Lanka's response to cancer control and prevention in the next five years with concrete targets to reduce the number of new cancer cases, improve the survival and the quality of life of cancer patients and their families.

This plan takes into consideration the goal of impact indicators relevant to cancer control and prevention and prioritized activities to expand, intensify and diversify the response to be undertaken by both government, nongovernment sectors and people living with cancer and their families and caregivers with a coordinated and unified approach. A list of priority activities to be conducted over the next five years and a framework of indicators to guide and monitor the response is provided in this plan. Several cross cutting principles have been outlined for the strategy that underlines the programme coverage. It is expected from all relevant stakeholders to utilize this document to ensure optimum service provision for cancer prevention and control including palliative care. The National Cancer Control Programme look forward to work with all stakeholders including patient group networks.

The National Cancer Control Programme sincerely appreciates the commitment of those who contributed to complete this task. The technical partnership from the World Health Organization and Dr Sujatha Samarakoon, Public Health Specialist to the National Cancer Control Programme for this endeavour is gratefully acknowledged.

Dr. Janaki Vidanapathirana
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Abbreviations

AHB	Annual Health Bulletin
AQI	Air Quality Index
BRCA-1	Breast cancer genes –type 1
CEDC	Cancer Early Detection Center
CBE	Clinical Breast Examination
CBO	Community Based Organizations
CEA	Central Environment Authority
CMC	Colombo Municipal Council
CoE	Center of Excellence
CSO	Civil Society Organizations
CT	Computed Tomography
DDG-NCD	Deputy Director General Non Communicable Diseases
DDG-PHS	Deputy Director General Public Health Services
DDG-LS	Deputy Director General Laboratory Services
DDG-DS	Deputy Director General Dental Services
DDG-E&OH	Deputy Director General Environment & Occupational Health
DDG-MS	Deputy Director General Medical Services
DGHS	Director General Health Services
DU&E	Director Urban & Estate Health
E-MIS	Electronic Management Information System
FCTC	Framework Convention on Tobacco Control
FHW	Family Health Workers
FHB	Family Health Bureau
F-O-P -	Front of Pack Labeling
GOSL	Government of Sri Lanka
HBCR	Hospital Based Cancer Registry
HBV	Hepatitis B Virus
HiAP	Health in All Policies
HPV	Human Papilloma Virus
HPB	Health Promotion Bureau
HSEP	Health Sector Enhancing Project
ICD	International Classification of Diseases
IMMR	Indoor Morbidity and Mortality Register
imPACT	integrated mission of Programs of Action for Cancer Therapy
IARC / IACR	International Agency for Research on Cancer
LINAC	Linear Accelerators
LMIC	Low and Middle Income Countries
OMF	Oral and Maxillofacial
OPMD	Oral Potentially Malignant Disorders
OSMF	Oral Sub-Mucosal Fibrosis
M&E	Monitoring & Evaluation
M&M	Mortality and Morbidity
MRD	Minimal Residual Disease
MRI	Magnetic Resonance Imaging
MSD	Medical Supplies Division
NAC	National Advisory Committee
NATA	National Authority on Tobacco & Alcohol
NCDs	Non-Communicable Diseases
NCCP	National Cancer Control Program
NGO	Nongovernmental Organizations
NHSL	National Hospital of Sri Lanka
NMRA	National Medicines Regulatory Authority
PBCR	Population Based Cancer Registry
PET	Positron Emission Tomography
PDHS	Provincial Director of Health Services
PGIM	PostGraduate Institute of Medicine
PMCI	Primary Medical Care Institutions
PHNO	Public Health Nursing Officers
QA	Quality Assurance
RDHS	Regional Director Health Services
RMSD	Regional Medical Supply Division
RSO	Radiation Safety Officer
SBCC	Social Behavioral Change Communication Strategy
SDGs	Sustainable Development Goals
SLAEB	Sri Lanka Atomic Energy Bureau
SLCR	Sri Lanka Cancer Registry
SLMA	Sri Lanka Medical Association
SOP	Standard Operation Procedures
SPECT	Single Photon Emission Computed Tomography
SUP	Scale Up Plans
TAC	Technical Advisory Committee
UHC	Universal Health Coverage
VTC	Vocational Training Center
WHO – FCTC	World Health Organization - Framework Convention on Tobacco Control
WHO	World Health Organization
WWC	Well Women Clinics

Executive Summary

It is estimated that around 23,000 new cancer cases are diagnosed and about 14,000 cancer related deaths are recorded annually in Sri Lanka. Cancers of breast, cervix uteri, thyroid and ovary are the commonest among females while in men the commonest are oral, lung, oesophagus and colo-rectal cancers. The first National Policy and Strategic framework on Prevention and Control of Cancer in Sri Lanka was developed in 2015. The main aim of the policy was to reduce the occurrence of new cancers, reduce the mortality rate and improve survival and quality of life of people living with cancer. The national strategy was implemented by the National Cancer Control Program (NCCP) with several stakeholders including the provincial health services, community based organizations, private health sector and people living with cancer and their families and care givers. An evaluation of the plan was done in 2019 which identified several strengths and weaknesses and made recommendations to be included in the present National Strategic Plan (2020-2024). A multi-sectoral expert group developed a present national strategic plan (NSP) taking into consideration the recommendations of the review panel, country situation regarding prevalence of risk factors, access to services, availability of infrastructure, workforce and cost effective evidence based interventions. The areas to be covered by the cancer control strategy encompass all aspects of cancer: prevention, early detection, diagnostics, comprehensive treatment, survivorship rehabilitation, palliative care, strategic information and management, research, leadership and good governance.

The present NSP is based on a set of guiding principles. The vision, mission, goal remained the same and strategic objectives and strategic directions were identified. The Goal of the national cancer control strategy is to reduce the incidence of preventable cancers, detect early detectable cancers and provide continuum of care to all cancer patients in an equitable manner.

The present NSP derives its mandate from the overarching National Health Policy, National Health Strategic Master Plan, Suwa Divimaga Program under the “Saubhagya Dakma” and harmonizes with several health and non-health related policies as several interventions are implemented through integration into existing programs in order to increase the coverage and quality of activities and to be cost effective. The NCCP will spearhead the national response with multiple stakeholders. The NCCP at the central level will be strengthened by a consultant taking charge of each program unit and ensuring coordination with all implementing partners including provincial health authorities, clinicians and other stakeholders. Political leadership will be provided as the Government of Sri Lanka has endorsed the agenda for achievement of Sustainable Development Goals (SDG) and will be displayed by overseeing the progress of the current NSP, allocating funds and taking up chronic NCDs and cancer as an agenda item at high level meetings.

The present NSP gives priority to prevention and calls for strengthening of the ongoing primordial and primary prevention interventions and initiating a social behavioral change communication strategy (SBCC) to improve health literacy of people, behavior change of population and individuals to reduce cancer related risk factors by adopting healthy life styles to reduce the occurrence of cancer. Providing knowledge on availability of services, accessing services and legal milieu in the country which protects people from being exposed to cancer related risk factors is also addressed in the SBCC strategy. The present NSP has included several other strategies to promote early detection through creating awareness on common signs and symptoms to identify cancers early, timely access to services by increasing screening opportunities for common cancers such as breast, cervix and oral cancers by strengthening primary, secondary and tertiary level diagnostic facilities. Cancer early detection clinics will be established to increase population coverage for screening and counseling. In the true spirit of public health principles screening is linked to provision of treatment and care. Further, opportunities are provided for a large segment of the society to reduce cancer related risk factors through health promoting settings in schools, workplaces, hospitals, universities, vocational training centers and villages.

Every diagnosed adult and paediatric patient with cancer should have access to treatment. Therefore, in keeping with policies of the government, each province will have a center of excellence for cancer diagnosis, treatment and care and it will network with treatment centers in secondary and other tertiary levels. Clinical and management guidelines for each level which covers medical, radiological, surgical and gynecological oncology will be prepared by specialists to improve quality of care. Diagnostics and treatment facilities, human resources will be identified for each health service level after a needs assessment and Master Plans for infrastructure and human resources will be prepared. Survivorship, rehabilitation and palliative care will be included in the continuum of care for which healthcare workers, community organizations, families and caregivers will be trained. A strategic information and management unit will be established in the national program to strengthen collection of timely and accurate information from cancer registries and research in areas of epidemiology, laboratory, treatment and care is encouraged to provide evidence for policy formulation and program management. Establishing an electronic management information system will not only enhance data management but will also help develop linkages with procurement supply management chains to ensure a continuous supply of pharmaceuticals and non-pharmaceuticals. A monitoring and evaluation plan with a performance framework will be used to monitor and evaluate program performance.

The present NSP which was developed by the NCCP with local and international expertise will be used as an overarching framework to guide and coordinate activities in a systematic manner to provide comprehensive cancer prevention and control services for the people of Sri Lanka. The NSP will serve as an anchor for Sri Lanka to achieve Universal Health Coverage by 2030 which is embedded in the Sustainable Development Goals (SDG) ensuring all individuals and communities receive cancer care they need without suffering financial hardship, with coverage of full spectrum of essential quality health services, from health promotion to prevention, treatment, rehabilitation and palliative care.

National Strategic Plan for Prevention & Control of Cancer in Sri Lanka (2020-2024)

Introduction

Cancer is a large group of diseases that can start in almost any organ or tissue of the body. One defining feature of cancer is the rapid creation of abnormal cells which generally arise because of alterations in the DNA of cells. The cell changes are multifactorial in origin. These cells grow uncontrollably and go beyond their usual boundaries to invade adjoining parts of the body and/or spread to other organs. The latter process is called metastasizing and is a major cause of death from cancer. Other terms used for cancer are neoplasms and malignant tumours[1,2].

The risk factors for cancer can be broadly categorized into four types namely 1) behavioural risk factors that include tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity; 2) biological risk factors: overweight, obesity, age, sex of the individual; 3) environmental risk factors: exposure to environmental carcinogens such as chemicals agents and certain viruses, bacteria and parasites; and 4) genetic risk factors[2]. Prevention and control of risk factors, strengthening health systems, empowering and engaging communities and multiple stakeholders are the foundations of reducing the incidence of cancer and improving survival and quality of life of people living with cancer[2]. The risk factors are interconnected at the individual and contextual levels thus estimating the specific contribution of each of these risk factors is difficult and may underestimate the cumulative potential risk [2].

Global Situation

Globally, 5-10% of all cancers are attributed to genetic defects and 90-95% to environmental and behavioral lifestyle factors such as tobacco (25%), alcohol (4-5%), nutrition and physical inactivity (3-4%) and infections (13%)[2]. Tobacco use is the most important risk factor for cancer and is responsible for approximately 22% of cancer deaths[2].

In 2018, nearly 18.1 million were diagnosed with cancer around the world and it became the second leading cause of death globally. In the same year, cancer accounted for an estimated 9.6 million deaths, or one in six deaths. The International Classification of Diseases (revision 11) lists more than 600 types of cancers. Globally, the most frequently diagnosed cancer is lung cancer (11.6% of all cases), followed by female breast (11.6%) and colorectal cancers (10.2%)[2].

The world will see a 60% increase in cancer over the next two decades and by 2040 about 29-37 million new cancer cases will be detected[2]. The greatest increase (an estimated 81%) in new cases will occur in low and middle income countries (LMIC) due to demographic changes, such as ageing of the population, and increasing exposure to behavioral, infectious, environmental and occupational risk factors. It is estimated that one in 5 men and one in 6 women worldwide develop cancer during their lifetime[2].

The global death toll for cancer in 2018, translated to one in 8 men and one in 11 women dying from cancer. Cancer is the cause of about 30% of all premature deaths from chronic Non-Communicable Diseases (NCDs) among adults aged 30-69[2]. Survival in some countries

is currently low as health systems are not well prepared or equipped to manage this growing burden, and current budgetary allocation and global resource mobilization are markedly insufficient [2].

The urgency of the chronic NCD problem led to adoption of the Sustainable Development Goals (SDGs) and their target 3.4: "By 2030, reduce by one third premature mortality from NCD through prevention and treatment and promote mental health and well-being" [2].

In this background governments are committed to accelerate the national response to prevent and control cancer by developing policies and a set of prioritized strategies and interventions which are evidence based, cost-effective, accessible and available to all citizens in keeping with the country situations and observing global best practices.

Sri Lankan Situation

Sri Lanka has an outstanding track record of achieving remarkable public health goals where successive governments have invested in a non-fee levying public education and a strong performing health system which implements evidence based low cost interventions island-wide through a network of public health and curative services which enabled to deliver excellent health outcomes especially in maternal and child health and in controlling communicable diseases. Today, there is growing awareness and concern about the challenged posed by the large and escalating burden of NCDs which accounts for almost 83% of total deaths in the country and the proportional mortality due to cancer is estimated to be 14%[3].

In many countries, the rapidly expanding global cancer epidemic is a result of demographic changes leading to increasing elderly populations and socioeconomic changes which have led to adoption of life-styles such as use of tobacco and alcohol, consuming high-calorie, high fat unhealthy diets, physical inactivity and exposure to chemicals and toxins as a part of on-going globalization and industrialization. Sri Lanka is no exception to these changes and is currently experiencing demographic, epidemiological and socio-economic transitions which have fueled the above risk factors.

The country is in an advanced stage of demographic transition with the adult life expectancy reaching 75.3 years[4]. Urbanization, industrialization, ease of internal and external migration, access to a variety of channels of communication, liberalization of trade and marketing policies with the adoption of open economy policies during the last few decades have resulted in lifestyle transformations and related factors which have affected the health status of the population causing an upsurge in chronic NCDs such as cardiovascular diseases, diabetes, cancers and chronic respiratory diseases[4,5,6,7,8,9].

It is estimated that nearly 23.4% of premature deaths in the country were due to cancer[10]. Projected statistics of Globocan 2018, observes that the annual number of cancer incidence is 23,530 and 14,013 deaths[11]. In this gross analysis viz all ages and both sexes, it is estimated that the incidence of breast cancer to be the highest (13.1%), followed by lip and oral cavity (9.1%) and lung (6.1%). The Globocan estimate for annual female incidence cancer cases of all

ages is 12,885 with breast cancer accounting for 24% (n=3051), cervical cancer 8.8% (n=1136), thyroid 8.1% (n=1143), ovary 6.6% (n=856), colorectal 5.5% (n=707)[11]. The number of projected new cases among males is 10,645, lip and oral cavity cancers accounting for 14.8% (n=1576), lung 10% (n=1065), oesophagus 10.2% (n=771), colo-rectum 6.9% (n=734), stomach 5.5% (n=589)[11]. As per the 2018, estimated number of prevalent cases (5 years) is 56,054[11]. As per these estimates the risk of developing a cancer before the age of 75 years for all sexes is 9.1%[11].

Around 30% of global cancer deaths are due to tobacco use. In Sri Lanka, tobacco kills around 12, 351 people each year and is the cause of 10% of all deaths in the country[4]. In 2016, cardiovascular diseases reported the highest mortality (31 per 100,000 population) and cancers (23 per 100,000 population) were the 3rd highest cause of mortality contributing 11.5% of hospital deaths[4]. It should be noted that only 30-40% of deaths take place in government hospitals[4]. According to the Annual Health Bulletin (AHB) in 2016 a total of 29,457 cancer patients were registered in all cancer treatment centers in the country[4] (There may be duplication of cases and are not strictly incidence cases, further there will be underreporting as well). Accurate figures cannot be obtained until a fully operational quality assured national cancer registry is available in the country. It is estimated that the risk of dying from cancer before the age of 75 years is 6.2 for males and 4.9 for females and 5.5 for both[11].

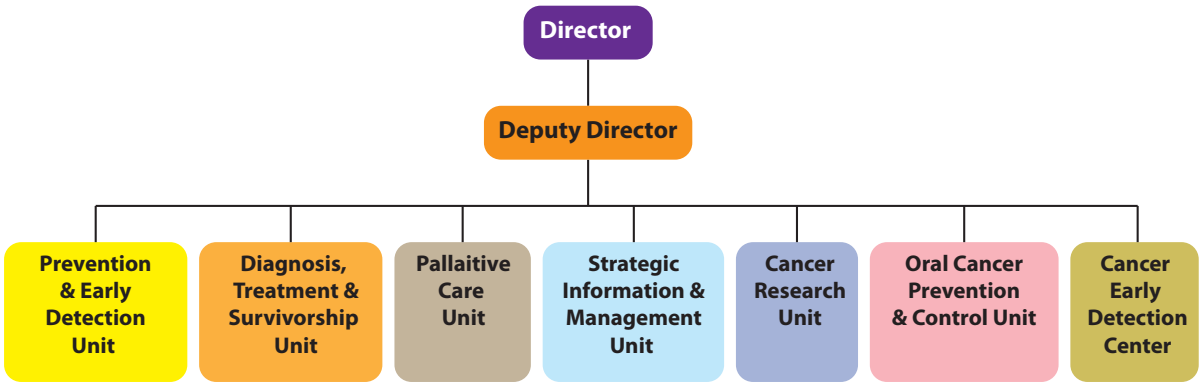
Breast cancer is reported to be the commonest cancer among women in Sri Lanka[12]. In 2014, 3065 new cases of breast cancer were detected. The crude rate per 100,000 Population is 28.8. The age standardized incidence rate for females is 24.3 per 100,000 Population[12]. The breast cancer incidence appears to be rising rapidly particularly among postmenopausal women in Sri Lanka. This increase in breast cancer among postmenopausal women is a significant feature which needs urgent attention particularly since Sri Lanka has a rapidly ageing population. Screening for cancer cervix was initiated in 1996 and in 2014, 1049 cases of cervical cancer were identified. The Crude rate per 100,000 Population is 9.8 and the Age Standardized Rate is 8.2 per 100,000 Population[12].

National Cancer Control Programme

The National Cancer Control Programme (NCCP) of the Ministry of Health is the main government organization which coordinates the national response to prevention and control of cancer activities in Sri Lanka. It is under the Non Communicable Disease Bureau of the Ministry of Health which is headed by the Deputy Director General of Non Communicable Diseases of the Ministry of Health, Sri Lanka. Director/NCCP, Deputy Director/NCCP and a senior management team provides leadership and coordinates preventive and cancer control activities in partnership with several stakeholders. National Cancer Control Programme administratively comes under the line Ministry of Health while cancer care hospitals are under either the line ministry or the administration of provincial health authorities.

Sri Lanka has a National Cancer Control Policy approved by the Parliament in 2015. The National Advisory committee (NAC) is the statutory body for prevention and control of cancer in Sri Lanka. The NAC meetings are chaired by the Secretary of Health and are held every quarter of the year.

NATIONAL CANCER CONTROL PROGRAMME OF SRI LANKA
ORGANOGRAM



The aim of The National Cancer Control Programme (NCCP) is to provide a comprehensive programme of prevention and control of cancer in Sri Lanka, by integrating evidence-based strategies and improving health systems. It focuses on primary prevention, early detection, diagnosis and treatment, rehabilitation, survivorship, palliative care, research, surveillance and strategic information and management. The NCCP activities include provision of comprehensive and equity of preventive and curative services across all levels of health services, workforce development, research, data collection and analysis for action and monitoring and evaluation of services with partnership of stakeholders.

The Provincial Directors of Health Services (PDHS) and Regional Directors of Health Services (RDHS) are the focal points at provincial and district levels respectively for prevention and control of cancer activities. They coordinate activities through establishment of provincial/ district cancer control committees headed by the Regional Director of Health Services and with the participation of MO/NCD, MO/MCH, RE, RDS, MOOH, consultants in curative & preventive sector etc.

While 90% of inpatient health care is delivered within the public sector, outpatient care in Sri Lanka is delivered more equally between the public and private systems. Although cancer-specific data is not available, it assumed that a similar distribution exists in cancer care too. In the public sector, patients have access to free medical, surgical and radiation oncology services. These include expensive novel systemic therapies, which are provided after case by case assessment and approval by Ministry of Health (MoH).

Sri Lanka's curative healthcare system consists of three tiers. Primary level includes Primary Medical Care Units (PMU) and Divisional Hospitals (DH, n=480). These are called Primary Medical Care Institutions (PMCI) and there are 996 of them throughout the country. They are non-specialist institutions and most are under the Provincial administration. The secondary level includes district general hospitals (DGH, n=19) and base hospitals (BH, n=74), which provide specialized care. A total of 98 such institutions exist across the country, 18 of which are under the central ministry. Specialized care is also provided by tertiary-level institutions (national hospital, teaching hospitals (TH, n=16) and provincial general hospitals n=23)[4,9]. Cancer services are delivered at the National Cancer Institute Sri Lanka, as well as 7 teaching and 11 general hospitals[4,9]. In the private sector, although outpatient cancer care is found in

many parts of the country, inpatient care is limited to few of the major cities. In Colombo, there is a single dedicated private cancer hospital[9].

A formalized National Policy and Strategic Framework for Prevention and Control of cancer together with the National Policy was prepared in 2015 to respond to the increasing numbers of people were developing and dying from cancer[5]. National cancer control activities are carried out as per this policy and strategic plan. The Technical Advisory Committee (TAC) which consists of specialists in related cancer control activities provide technical inputs related to the respective specialized areas. Five committees with TOR were appointed in 2020, by the Secretary of Health on the recommendations of the integrated mission of Programs of Action for Cancer Therapy (imPACT) review held in Oct 2019. They are: Preventive & Early Detection TAC, Diagnostic & Treatment TAC, Oral Health TAC, Cancer Registry & Information TAC and Palliative Care TAC. The National Advisory Committee (NAC) shall oversee the progress of activities of the NSP as given in the National Monitoring & Evaluation Plan.

In 2019, an expert review by the integrated mission of Programmes of Action for Cancer Therapy (imPACT) took place to evaluate the NSP[9]. The expert committee identified best practices which have to be sustained and certain gaps and made recommendations to be included in the next revised strategy to alleviate the challenges.

Challenges to prevention and control of cancer in Sri Lanka

The above report and other expert reviews highlights the high prevalence rates of cancer causing risk factors among adults and school children which were reported in surveys[,8,9,13] (Annex -1) and the inadequate coverage of risk reduction programmes and screening programmes despite implementing evidence based interventions including WHO recommended "Best Buys"[14] using the life-cycle approach. Limited workforce capacity at the central level hinders coordination, accountability, technical support, monitoring and evaluation of the implementation process and limited infrastructure and workforce capacity at provincial level delays program implementation. The resource capacity of the Headquarters of NCCP has to be strengthened with technical experts appointed as leaders of each service unit. The composition of the National Advisory Committees and Technical Advisory Committees has to be revised with terms of reference (TOR).

Since the NCCP gives high priority to prevention, it is necessary to strengthen the integration with other health and non-health platforms to reach a wider population including high risk groups practicing unhealthy life styles to reduce risk factors for cancer. Although steps have been taken to promote a supportive legal milieu it is vital to monitor the implementation of laws as some regulations such as the ban imposed on locally produced betel quid is frequently defied. It is timely to introduce policies, new laws and regulations related to healthy diets, import of areca-nut, indoor and outdoor air pollution, radiation and cytotoxic wastes in hospitals and industries and delivery of palliative care .

All cancer treatment modalities are available in the country. The estimates for resources should be planned taking into consideration that 37% of patients are treated with surgery, 44% with

radiotherapy and 51% with chemotherapy[9]. Limited and unequal distribution of infrastructure facilities for diagnostics and treatment and care and workforce capacity especially medical and paramedical personnel with specialist training across the country has been a major hindrance for cancer treatment and care activities. It has resulted in long waiting times at clinics to seek care, long waiting times to receive cancer confirmation reports, diagnostics and treatment. It was observed that a large majority of patients present to health services in advanced cancer stages. Thus there is a need to scale up community awareness, community empowerment activities and strengthening screening at primary healthcare institutions, increasing the numbers of CEDC to at least one per province and reorienting health services to increase coverage and quality of prevention, early detection and treatment and care. A proper referral system linking screening programs to treatment is lacking. Referrals are done in an ad-hoc manner.

Standard Operation Procedures (SOPs), guidelines and protocols stratified as per the health service level for diagnostics and treatment and care are not available which compromise quality of care. A workforce with adequate mixture of skills to deliver comprehensive continuum of care is necessary to meet the demand of the increasing number of new diagnoses. None of the public sector laboratories are accredited by the Sri Lanka Accreditation Board.

Regulations on safety and security of radioactive material during manufacture, use and storage developed by Sri Lanka Atomic Energy Regulatory Council have to be finalized and distributed to all stakeholders. A monitoring and evaluation mechanism is still not in place although category-1 radioactive sources are available in Sri Lanka and upgraded security.

Many tertiary care hospitals have initiated palliative care but very little progress at secondary and primary healthcare levels although the national policy is to integrate into the mainstream healthcare system. Cancer registries are not maximally operated. Moving from a paper based data collection to an electronic management information system is slow. Cancer is still not a notifiable disease. Hence data from other sources such as private sector, insurance agencies, Register Generals office may not be complete. Data on referrals and cancer detection rates is not available due to a lack of a referral and back referral system from screening facilities to treatment centers. All these factors impedes accurate data collection from a variety of valuable sources to improve program management and revise policies.

National Strategic Plan

The National Strategic Plan was present, by a multi-sectoral expert group, taking note of the recommendations given by the imPACT review panel, cancer burden and incidence trends, demographic, epidemiological and socio-economic transitions the country is facing, local research and survey findings, new technological developments, patient's expectations, human resource and infrastructure capacity especially for diagnostics and treatment and care, equity of services, access and availability of services for universal coverage, gaps in health promotion and prevention, finances and primary healthcare systems strengthening that is taking place in the country and international recommendations.

According to Global experts, around 30% of cancers are preventable, for another third effective treatment is possible depending on early detection and for the remaining third with advanced disease their quality of life can be improved if pain relief and palliation can be provided[2]. In this background, the present NSP is structured to encompass core components which are considered as the foundation of a National cancer prevention & control program[2]: leadership and governance, prevention of risk factors, early detection, diagnostics and treatment, survivorship, rehabilitation and palliative care, strategic information & management and research. The overall purpose of this NSP is linking public health policies to clinical outcomes to reduce the incidence and impact of the increasing trend of cancers and to provide continuum of care with equitable access for people living with cancers to increase survival and improve quality of life in partnership with multi-sectoral stakeholders.

The present strategy derives its mandate from the overarching National Health Policy and is aligned to the National Health Strategic Master Plan 2016-2025, Global Action Plan for Prevention and Control of NCDs and National Multisectoral Action Plan for the Prevention and Control of Non Communicable Diseases in Sri Lanka (2016-2020), National Strategic Plan for Well Woman Clinics, and "Suwa Divimaga" the visionary program of His Excellency the President Gotabaya Rajapaksa. It also harmonize with other relevant health policies such as the National Policy and Strategic Framework for Prevention and Control of Chronic NCDs, National Nutrition Policy, National Maternal and Child Health Policy, National Health Promotion Policy, School Health Policy, National Policy on Healthcare Quality & Safety, The National Oral Health Policy, The National Policy on Alcohol Control, The National Palliative Policy and Strategic Plan, National Agriculture Policy, National Environment Policy and treaties such as World Health Organization Framework Convention on Tobacco Control (WHO FCTC) and other supportive policies.

The present NSP is guided by a set of public health principles, a vision and a mission, goal, seven strategic objectives with seven strategies and strategic directions which serve as pillars for implementing evidence based interventions and suitable for the country situation to achieve the desired outcomes through the healthcare delivery system. Health system is the main vehicle which delivers interventions to the community through the network of preventive and curative medical institutions. Hence, the revised NSP is organized on the six building blocks of health systems to provide effective, comprehensive cancer prevention and control for all Sri Lankans. It defines the implementation process and a results-based indicator framework for monitoring and evaluation.

The NCCP will spearhead the national response and implementation of cancer control measures will be a shared responsibility of several stakeholders including government in particular health services, nongovernmental organizations (NGO), civil society organizations (CSO), community based organizations (CBO), academia, professional organizations, communities, patient groups and their families. The national response will be supported by political leadership, adequate fund allocation, infrastructure and human resource development and mobilization and monitoring and evaluation (Strategy-1).

Since most cancers are linked to tobacco and alcohol use, unhealthy diet, physical inactivity and exposure to environmental and occupational risk factor, primordial and primary prevention

of modifiable risk factors of cancer is given high priority. The present NSP is implementing "Best Buy" interventions[14] and chronic NCD related service packages identified in the Essential Health Services package (EHSP) for Universal Health Coverage (UHC)[17] integrating to other health and non-health sector policies and programs to reach all citizens including high risk populations across the life cycle. A supportive legal environment will be created by monitoring and evaluating the existing laws and regulations and introducing new ones as and when necessary (Strategy-2). The existing health education programs will be continued with a Socio-Behavioral Change Communication (SBCC) element through the proposed SBCC strategy.

Early detection through screening and early diagnosis to detect pre-cancerous lesions by increasing patient's awareness of signs and symptoms and provision of screening services at each healthcare level and referral for specialized services and follow up are addressed in the NSP (Strategy 3).

Each province shall have a Center of Excellence (CoE) which will be strengthened in a phased manner at the tertiary care level to provide comprehensive treatment and care for both adults and children. The CoE will network with treatment centers of the secondary and other tertiary level treatment centers (Strategy 4) and with Cancer Early Detection Centers (CEDC) (Strategy 3). An effective referral and back referral system will be initiated across the three levels of healthcare.

This NSP calls for strengthening survivorship, rehabilitation, palliative care by integrating into the existing healthcare delivery structure and by promoting community and home based care to improve the quality of life of people living with cancer and support families and caregivers (Strategy 5) .

Operational and stratified clinical care SOP / guidelines and protocols will be developed for each level of service to improve the quality of services (Strategy-3.4,5). Training needs will be identified and a capacity building plan will be available for both local and international training.

The planned electronic management information system (e-MIS) will provide cancer related strategic information for comprehensive, accurate and timely data for decision making and program management (Strategy 6). The NSP will be evaluated through a robust monitoring and evaluation mechanism that critically includes a performance framework (strategy 6). Cancer research will be encouraged to provide evidence for action (Strategy-7).

Policies and programs to ensure service providers and patients exposed to radiation and a cytotoxic waste is addressed in the NSP. Appointing safety officers for each CoE is expected to improve the quality of care and safety (Strategy 4).

Cancer prevention and control interventions will be integrated to the "shared care cluster system". Sri Lanka is embarking on a Health Sector Enhancing Project (HSEP) and is adopting a "shared care cluster system" (clustering a group of primary level medical institutions (PMCIs) around a apex hospital which is a Base Hospital or a higher level hospital and demarcates a catchment population for the cluster) to strengthen primary healthcare which will be linked to secondary and tertiary level specialized centers with a referral and a back referral system

which enables equity to services, follow up of patients, minimize loss to follow up, reduce out-of-pocket expenditure incurred by households for cancer and hospital costs.

An external mid review will provide an analysis of the outcomes with recommendations to fine tune program activities move forward while an end term review will throw light on the impact the current NSP has made to reduce the burden of cancer in Sri Lanka (Strategy-1).

Sri Lanka is committed to achieve the following globally set targets by 2025

1. A 25% reduction in premature mortality from cancer
2. A 10% relative reduction in the use of alcohol
3. A 10% relative reduction in the prevalence of insufficient physical activity
4. A 30% relative reduction in mean population intake of salt /sodium
5. A 30% relative reduction in prevalence of current tobacco use in persons aged over 15 years
6. An 80% availability of affordable basic technologies and essential medicines including generics, required to treat major non communicable diseases in both public and private facilities

Guiding Principles of the revised NSP

- High level political commitment
- Adopting a human right approach
- Gender sensitivity & Protection of right to health
- Protecting and promoting Equity and social justice
- Universal health coverage
- Being consistent with the National Health Policy and other existing/relevant government economic and development policies for an integrated approach across the life course
- Evidence-based cost effective person-centered quality interventions, giving equal importance to primary, secondary and tertiary preventive measures and encompassing entire continuum of care
- Multidisciplinary, multi-sectorial coordinated approaches and encouraging appropriate public – private partnerships
- Community and family empowerment, ownership and participation

Vision

A country with a low incidence of preventable cancers and high survival rates with good quality of life and minimal disabilities & suffering from effects of cancers

Mission

To reduce the incidence of cancers by controlling and combating determinants of cancers, ensuring early detection and providing a holistic and accessible continuum of cancer care which address curative treatment options to end of life care through an evidence-based approach

Goal

To reduce the incidence of preventable cancers, to detect early detectable cancers at an early stage and to provide continuum of cancer care to all cancer patients in the country in an equitable manner

Strategic Objectives of the NSP

1. High level political leadership, advocacy and governance to accelerate the national response for prevention and control of cancer with a robust integrated, coordinated, multi-sectoral, multi-disciplinary national program with community engagement.
2. Primordial and primary prevention of cancers by addressing risk factors and determinants throughout the life-cycle.
3. Ensure screening and early diagnosis through improved health literacy, availability of services for rapid diagnosis of cancers and linking to ensure early treatment and care.
4. Ensure sustained and equitable access to diagnosis and treatment and care facilities for cancers.
5. Ensure access & availability of survivorship, rehabilitation and palliative care facilities at all health service levels and at community level for cancer patients and support to their families and care givers.
6. Strengthen cancer information systems and surveillance to provide accurate and timely data to monitor the progress and evaluate the outcomes of cancer control actions.
7. Promote research and utilization of its findings for prevention and control of cancers.

Strategic Objective : 1

High level political leadership, advocacy and governance to accelerate the national response for prevention and control of cancer with a robust integrated, coordinated, multi-sectoral, multi- disciplinary national program with community engagement

Introduction

The Government of Sri Lanka, has pledged to achieve SDGs by 2030 and the present NSP will support this pledge by accelerating on going interventions and initiating other recommended interventions to reduce the incidence and mortality due to cancer and improve the quality of life of people living with cancer and their families. Although the health sector has the primary role and responsibility to respond to the challenges of prevention and control of cancer, the Government of Sri Lanka is engaging several stakeholders including community engagement to implement the evidenced based cost effective interventions identified in the National Strategic Plan (2020-2024). The NCCP will spearhead the national response with the support of several stakeholders.

High level political leadership will be provided to raise the priority accorded to chronic NCDs including cancer as a national development issue which undermine the country macroeconomics, household expenditure given the strong links between cancer and poverty, social inequalities, access to affordable basic services, loss of productivity due to illness and premature death. Thus leadership is required to mandate integrating health in all national policies (HiAP) and plans across all relevant government ministries and departments for effective engagement of stakeholders in the national response. Such leadership will also ensure providing adequate financial sustainability and catalyze support from donor agencies as an investment case to maintain the integrity of policies and program objectives.

The National Cancer Control Program (NCCP) at the central level is the key organization that needs strengthening as a governance body to effect policy coherence across sectors, coordination of interventions and advocate for sustainable application of legislative, regulatory and fiscal measures which are already in place and initiate new ones where appropriate. A well-structured and coordinated national program at the central level is a requirement to work in partnership with provincial health authorities which are the key players in implementation, other health ministry institutions, non-health sector ministries and departments, non-government organizations, private sector institutions, community based organizations, people living with cancer and their families, care givers and the community. National focal points will be entrusted with coordination and monitoring and evaluation of interventions and reporting regularly to the hierarchy. The NCCP will be supported by several national, provincial, district level committees, technical advisory committees and clinical boards to

monitor and evaluate the progress of interventions. The overall performance of the national response will be monitored and evaluated using Results based Performance Framework which will include indicators for national and international reporting.

Strategy 1 – Leadership, advocacy & Governance

Strategic Direction 1.1	**Providing highest political leadership for prevention and control of cancer as a national development challenge embracing a Multisectoral approach**
Major activities	
1.1.1	Harness political leadership to address prevention and control of cancer as a national development issue which needs a "whole of Government" approach
1.1.2	Advocate to include prevention & control of cancer to be taken up as an agenda item at the National Health Council chaired by Hon Prime Minister and NCD Council chaired by Hon Minister of Health
Strategic Direction 1.2	**Strengthen the National Cancer Control Program for advocacy and good governance**
Major activities	
1.2.1	Strengthen planning, coordination, monitoring and evaluation of cancer prevention and control activities at the NCCP
1.2.2	Strengthen National Advisory (NAC) Committee and other Technical Advisory Committees (TAC)
1.2.3	Advocate for creation of an enabling environment to sustain legislations, regulations already in place and initiate new laws when required
1.2.4	Ensure availability of standardized care for all citizens across all levels of health services
1.2.5	Ensure a referral and back referral system across all health service levels is in place
1.2.6	Develop a Master Plan for human resources for each strategy identified in the NSP
1.2.7	Develop infrastructure plans for each strategy identified in the NSP
1.2.8	Develop a capacity building plan to ensure trained staff are available for (clinical, laboratory, pathology, radiology, treatment and care, data management, rehabilitation and palliative care)

1.2.9	Establish a Procurement Supply and Management (PSM) system for diagnostics, pharmaceuticals and non-pharmaceuticals devices for the NCCP with linkages to relevant sectors
1.2.10	Establish a Strategic Information Management system in the NCCP
Strategic Direction 1.3	**Strengthen Provincial teams for prevention and control of cancer**
Major activities	
1.3.1	Support Provincial administration to plan, implement multi-sectoral cancer prevention & control interventions with community engagement
1.3.2	Ensure infrastructure is available at all health service levels as per infrastructure Master Plan
1.3.3	Develop HR plan for holistic cancer care at all levels of health services as given in the HR Mater Plan of NCCP
1.3.4	Ensure monitoring and evaluation of interventions as per District Plans
Strategic Direction 1.4	**Involvement of people living with cancer, their families and care givers**
Major activity	
1.4.1	Engage people living with cancer, their families and care givers as members of Provincial/district teams

Strategic Objective : 2

Primordial & primary prevention of cancers by addressing risk factors and determinants throughout the life-cycle

Rationale

The main aim of cancer prevention interventions is to eliminate or minimize exposure to the causes of cancer and reducing individual susceptibility to the effect of such causes[2]. This approach offers the greatest public health benefit and is the most cost-effective long-term method of cancer control[2,5]. The important cancer related modifiable behavioral risk factors are use of tobacco and it's by products, use of areca-nut in the betel quid, harmful use of alcohol, unhealthy diet, physical inactivity and exposure to environmental factors which cause outdoor and indoor air pollution. The prevalence of all these behavioral and environmental risk factors is high in Sri Lanka among both adults and in school going and out of school children (Annex-1). The other known risk factors for cancer are viral infections such as hepatitis B and C causing liver cancer and human papilloma virus (HPV) causing cancer of the cervix uteri.

Therefore the NSP is aiming at reducing these risk factors using interventions across the life cycle through a multi-sectoral approach by supporting implementation of policies related to reduction of risk factors, strengthening community action by increasing health literacy and skills to adopt healthy lifestyles among people especially those adopting unhealthy lifestyles and are at a higher risk of developing cancers and creating supportive environments. The SBCC strategy, health promoting settings in schools and other sectors such as universities, vocational training centers (VTC), workplaces, hospitals, estates and villages and monitoring and evaluation of laws and regulations already in place and advocating to introduce new ones are the major activities identified.

Tobacco use is the most important risk factor for cancer and in industrialized countries 80-90% lung cancers are attributable to tobacco smoking. A substantial proportion of cancers in the oral cavity, larynx, pancreas, bladder and cervix uteri are also attributable to tobacco. Thus Sri Lanka gives the highest priority to tobacco control. A major step was passing comprehensive tobacco control legislation. The revised NSP is calling for monitoring tobacco control legislation and strengthening National Authority on Tobacco & Alcohol Act of 2006, implementation of MPOWER package, introduction of new regulations to prevent importation of varieties of tobacco and areca-nut preparations (such as Paan Masala, Babul, Mawa, Red tooth powder and Salah etc.) from neighboring countries which has resulted in an increasing prevalence of Oral Sub-Mucous Fibrosis (OSMF) which is an OPMD predicting future oral cancer burden in younger age groups.

The NSP advocates the enforcement of already initiated pricing policies such as excise tax increases on alcoholic beverages, regulating commercial and public availability of alcohol and restricting or ban on alcohol advertising and promotions (Best Buys) and also for enforcing laws on sale of alcohol to minors and drink driving offences aligning with the Sri Lanka National Policy on Alcohol Control[18].

The present NSP will support the establishment of Health Promoting settings in schools, universities, Vocational Training Centers (VTC), hospitals, workplaces and communities which promote healthy lifestyles in the context of the 5 principles of health promotion as specified in the Ottawa Charter[20] since this approach will not only reduce the incidence of chronic NCDs including cancers but reduce inequalities, gives opportunity for male participation and provide social justice and reducing the burden on health services.

There is a need to educate people on the protective effect of breast feeding and risk of developing cancer in the wake of evidence of the consistent protective effect of breast feeding against breast cancer (4.3% reduction per 12 months breast feeding) and ovarian cancer (30% reduction associated with longer periods of breast feeding)[19] and that breast feeding has a protective effect on development of childhood leukemia[19]. The SBCC strategy will formulate targeted messages and one of the best modes to communicating this message is to integrate to service packages of the Family Health Bureau which reach a large segment of the population in the reproductive age group. The present NSP is also supporting the implementation of school and workplace canteen policies to reduce salt, sugar and fat intake, advocate for enforcement of laws for sale of sugar-sweetened beverages (SSB) for children with the relevant government ministries, front of pack labeling (F-O-P) of foods and drinks to enable public to select healthy foods, replace trans-fat with unsaturated fats. The NSP calls for advocating the Ministry of Agriculture to grow and supply organic fruits and vegetables to schools, hospitals and workplaces.

In an attempt to reduce cancer related infectious risk factors, the present NSP is advocating for sustainability of the human papilloma virus (HPV) vaccination program in the Expanded Program of Immunization (EPI). Targeted messages for parents will be developed to increase coverage of HPV vaccination from 66.8% in 2018[12]to 90% by 2025[22] to fulfill the global targets. NSP will advocate to sustain immunization of at risk healthcare workers for hepatitis B to prevent liver cancer.

World-wide, emissions from industry, power generation, transportation, and domestic burning, considerably exceed the World Health Organization's health-based air-quality guidelines. It is estimated that hundreds of thousands of lung cancer deaths annually worldwide are attributable to particulate matter (PM) in outdoor air pollution. Epidemiological evidence on outdoor air pollution and the risk of other types of cancer, such as bladder cancer or breast cancer, is more limited. Prevention of exposure to environment risk factors is being addressed in this NSP within the health sector especially in relation to radiation and cytotoxic wastes and with agriculture sector on pollution of soil and Municipal Councils, Ministry of Industry, Ministry of Power & Energy and Central Environmental Authority (CEA) on outdoor air pollution.

The expected outcome is to reduce the prevalence of modifiable risk factors for cancer through increased health literacy and empowerment, creating a supportive environment which would eventually help to reduce people developing cancer and other chronic NCDs, be able to lead a healthy life and reduce the burden on the health sector.

Strategy -2 Primary prevention through health promotion

Strategic Direction 2.1	**Community education & empowerment that supports and influence adoption of healthy lifestyles across the life-cycle to reduce the incidence of cancer among different target groups**
Major activities	
2.1.1	Develop and implement a Social Behavior Change Communication (SBCC) strategy related to prevention & control of cancer through the life-course approach for general population and different target groups
Strategic Direction 2.2	**Integrating cancer prevention and control interventions in health promoting settings such as schools, Youth settings, work places, hospitals, estates and villages**
Major activities	
2.2.1	Advocate to integrate messages on risk factors for cancer in school health promoting settings
2.2.2	Support establishing health promoting setting in universities, training colleges and VTCs, workplaces (especially industries which have an influence on environment risk factors) , estates and villages to be used as a platform to include interventions for reduction of cancer related risk factors
Strategic Direction 2.3	**Reducing the prevalence of current use of tobacco/tobacco products in persons aged over 15 years and protecting non-smokers from exposure to tobacco by products by community education and enforcement of regulations and legislation**
Major activities	
2.3.1	Support implementation of Sri Lanka National Policy on Tobacco Control and NATA Act

2.3.2	Provide messages on the association between tobacco use and cancers to be used in tobacco cessation clinics
2.3.3	Create community awareness on the association of cancer and use of tobacco and use by products and second-hand smoke & the legal milieu using all modes of communication
Strategic Direction 2.4	**Reduce areca-nut use in persons aged over 15 years as a measure to reduce oral cancer**
Major activities	
2.4.1	Introduce preventive policies, regulations on importing areca-nut to Sri Lanka as a measure to protect people from cancer
2.4.2	Create community awareness on health hazards of areca-nut and the legal milieu
Strategic Direction 2.5	**Reduce alcohol consumption and prevent exposure of children to alcohol**
Major activities	
2.5.1	Promote implementation of Sri Lanka Policy on Alcohol Control and NATA Act
2.5.2	Create community awareness on social and health issues of alcohol use
2.5.3	School Health Promotion program to address alcohol related social and health issues
Strategic Direction 2.6	**Increase use of healthy diets among adults and children**
Major activities	
2.6.1	Ensure policies and guidelines highlight the association of unhealthy food and beverages with development of cancer
2.6.2	Ensure SBCC strategy address healthy diets -(the need to consume and promote the production of organic food free of agrochemicals and additives), Front of Pack labeling as given in the Food Act
2.6.3	Ensure monitoring of safety of foods
2.6.4	Promote breast feeding policy
Strategic Direction 2.7	**Reduction of insufficient physical inactivity**

Major activity	
2.7.1	Enhance public awareness of the links between overweight, obesity and cancer recognizing that physical inactivity is a risk factor for cancer
Strategic Direction 2.8	**Reduce exposure to infectious agents**
Major activities	
2.8.1	Include promotion of healthy sexual and reproductive behaviors and the need of HPV vaccination in the SBCC strategy
2.8.2	Ensure sustainability of HPV vaccination program
2.8.3	Advocate for sustainability of HBV vaccination among public sector healthcare workers and private sector healthcare workers
Strategic Direction 2.9	**Reduce exposure to environmental and occupational risk factors**
Major activities	
2.9.1	Integrate cancer prevention and control measures into existing occupational safety and health policies to create healthier and safer workplaces
2.9.2	Promote development of a policy to reduce indoor and outdoor air pollution
2.9.3	Include messages to reduce indoor air pollution (switch from using solid fuels in home cooking) in to the SBCC strategy as a measure to reduce the incidence of cancer
2.9.4	Strengthen outdoor air quality monitoring system
2.9.5	Promote the implementation of "Sustainable environment Policy" and legislations to safe disposal of toxic wastes such as industrial, laboratory, nuclear, cytotoxic waste which pollute the air we breathe, the water we drink and the soil used to cultivate our food.
2.9.6	Promote establishment of periodic screening and monitoring of individuals exposed to occupational hazards that cause cancer
2.9.7	Support the implementation of regulations issued by the CEA regarding open burning of refuse or other combustible matters inclusive of plastics.

Strategic Objective : 3

Ensure screening and early diagnosis through improved health literacy, availability of services for timely diagnosis of cancers and linking to services for early treatment and care

Rationale

The goal of early detection in cancer programs is detection of a disease at its early stage when it has a high potential for cure (e.g. breast and cervix cancer)[21,22.23]. There are two strategies for early detection: screening and early diagnosis[22]. Screening is a public health strategy used to identify unrecognized cancer or pre-cancerous lesions in an apparently healthy target population by a rapid and easily applied test, an examination or a procedure in order to provide treatment which can reduce the risk of the lesion developing into a cancer[21,22,23]. Early diagnosis is defined as the early identification of cancer in patients who have signs or symptoms of the disease[21,22,23]. This contrasts with cancer screening which is applied to an asymptomatic apparently healthy target population. Treating cancers found at an early stage is less aggressive, less expensive and more effective with higher long-term survival rates and better quality of life. Further, early detection and providing effective treatment help to reduce the prevalence of advanced disease and reduce hospital costs for treating advanced cases. Therefore affordable access to timely, adequate, effective treatment is an essential component in early detection programs[21,22]. Prevention of cervical cancer through screening linked to timely treatment of pre-cancerous lesions is classified as a "Best Buy" intervention by the WHO[14] which is practiced in the country.

Cervical cancer: The National Cervical Cancer Screening Program (NCCSP) was initiated by FHB in 1996 in Well Woman Clinics (WWC) and as of today it is a well -organized population based program which is guided by a National Strategic Plan (2019-2023)[12]. Sri Lanka adopt the WHO targets of achieving a global coverage of 90% girls fully vaccinated with HPV by 15 years of age, 70% of women screened twice with a high performance test by age 45 and 90% of the women with cervical disease receive the appropriate care and treatment, including palliative care.

As per the WHO recommendations, target populations for screening are two sets of 35 year old and 45 year old women cohorts attending Well Women Clinics (WWC). According to data of FHB, as of end 2017, papanicolar smear screening coverage among the 35 year old cohort was 53.3%[24]. Family Health Workers (FHW) identifies women in these age groups from the eligible families register and educates them on the need to screen for cervical cancer and availability of services. The NSP supports the objective of FHB to establish one WWC per 15,000 population to increase the coverage of screening services and capacity building of healthcare workers[12]. The NSP supports the FHB plan to shift the cytology based screening to HPV DNA testing[12].

The present NSP will support opportunistic cervical cytology screening at the Cancer Early Detection Centers (CEDC) for women in 35-60 year age group, at STD/HIV clinics, in some gynecological clinics, private hospitals and Family Planning Association of Sri Lanka[24]. The NCCP will promote establishing CEDC in each province in the wake of evidence that, in 2018, 52% of cervical cancers were diagnosed in late stages (Stage 3&4)[9] and 33% of breast cancers were diagnosed in late stage disease (stage 3 &4)[9]. Similarly oral health clinics are responsible in examining for oral pre-cancer or cancer lesions but 72% for oral cancers were diagnosed in stage 3 or 4[9]. Establishing CEDC in each province is promoted in this NSP as there is evidence that increasing numbers are seeking services at CEDC where counseling facilities are available, waiting times for screening and receiving results is less and referrals are done without delay.

Breast cancer – The Breast Cancer Screening Programme is carried out mainly at WWC[12] and HLC[12] as walk-in clinics for clinical breast examination (CBE). The strategy adopted for breast cancer screening is by carrying out CBE by a healthcare worker including the public health midwife (PHM) as per the guidelines. WWC and HLCs are providing skill building programs to enhance knowledge and skills for self- breast examination (SBE)[12] for attendees. Only suspected cases are referred to secondary or tertiary level for further assessment including mammography[9]. The Breast clinics will be established in 26 hospitals covering the whole country to facitate early diadnosis. Since the leading cancer in women is breast cancer, the present NSP is addressing the need to initiate DNA based genetic sequencing testing for BRCA -1 and 2 genes for women who are at a higher risk of breast cancer. The NSP, supports, to develop a National Plan for Early detection of Breast Cancer.

Oral cancer - In Sri Lanka, oral cancer is the leading cancer among men and is usually diagnosed in the low-socio-economic populations (farmers, mine workers, bus drivers, daily wages, fishermen, plantation workers, etc.). Targeted interventions are planned in the NSP since the National Oral Health Policy has identified the above groups as high risk groups for oral cancer due to the high use of tobacco in any form (smoking, smokeless tobacco use especially chewing betel quid on a daily basis, using areca nut and lime in the betel quid) and high consumption of alcohol. It was also observed that patients by pass Western curative services and tend to seek traditional methods to avoid surgery due to fear of surgical and radiotherapy interventions and stigma attached to cancer which results in late presentation with advanced disease.

The Oral Cancer Screening programme is conducted using guidelines which give details on management of oral potentially malignant disorders (OPMD) on mobile clinic basis. The screening programme is linked to a referral system from primary health care to centers providing specialized oral and maxillofacial facilities. The present NSP is taking steps to formalize the programme by developing a National Plan for Early detection of Oral Cancer with Multisectoral participation.

The mass media campaign included in the SBCC strategy will create public awareness on risk factors and prevention of such risks, myths and misconceptions, self- examination methods for early diagnosis of breast and oral cancer and access and availability of services for early detection of breast, cervical and oral cancer and stigma reduction.

This NSP calls for an effective referral and back referral system from early detection to provision of treatment across the three levels of healthcare for common cancers, developing infrastructure facilities including diagnostics and cost effective standardized quality services using evidence based guidelines/protocols and SOPs to ensure continuum of care. NSP also includes capacity building of healthcare workers in order to ensure that healthcare workers have the competency to recognize early signs and symptoms of cancer, counseling, familial risk assessment and provision of continuum of care without stigma and discrimination to reduce morbidity and mortality and increase survivorship and quality of life.

Although an increase of cases was noted, based on the principals of screening, a national population based screening programme for thyroid cancer is not considered at present until national level evidence is gathered. A colorectal cancer screening program is also not considered at present given the epidemiology of the cancer and resource availability.

Strategy 3 – Early detection of cancers

Strategic Direction 3.1	**Increase knowledge of general public, including high risk populations and individuals on cancer, accessibility and availability of services to increase utilization of services**
Major activities	
3.1.1	Include early detection of cancer strategies in the SBCC strategy to Empower women (>20 years) on SBE/Be Breast aware
3.1.2	Empowerment of risk groups at a higher risk of oral cancer (users of tobacco, areca-nut, alcohol) on self-mouth examination
3.1.3	Integrate messages on screening and early diagnosis of breast, cervical and oral cancer to existing community support groups
Strategic Direction 3.2	**Strengthen primary healthcare services for early detection of common cancers and link to CoE and other treatment centers at secondary and tertiary level as appropriate**
Major activities	
3.2.1	Strengthen primary health services for screening and early diagnosis of breast cancer and link to higher centers
3.2.2	Strengthen primary health services for screening and early diagnosis of oral cavity cancers and link to higher centers
3.2.3	Strengthen primary health services for screening and early diagnosis of cervical cancer and link to higher centers

3.2.4	Establish Quality Assurance (QA) programs in clinics and laboratories for screening and early diagnosis of cancer services
3.2.5	Promote develop a National Plan for prevention and management of Breast cancer
3.2.6	Develop a National Plan for Prevention and Management of Oral Cancer
Strategic Direction 3.3	**Increase opportunities for early detection of cancer**
Major activities	
3.3.1	Establish one stop Cancer Early Detection Center in each Province
3.3.2	Provide quality care at CEDC
Strategic Direction 3.4	**Ensure cancer patients have access to timely diagnosis and linked to treatment & care**
Major activities	
3.4.1	Ensure all treatment centers are able to confirm suspected cases
3.4.2	Develop partnerships with STD/HIV clinics to refer suspect cases of cancer cervix /abnormal pap smear cases to CoE
Strategic Direction 3.5	**Building public/private partnerships for screening and early diagnosis of cancers to increase coverage**
Major activity	
3.5.1	Advocacy to provide screening (breast, cervix, oral) in the private sector hospitals/clinics

Strategic Objective : 4

Ensure sustained and equitable access to diagnosis and treatment services for cancers

Rationale

Although priority is given to health promotion and primary prevention of cancers, Government of Sri Lanka has also invested in screening, early diagnosis, treatment and care, rehabilitation, palliative care to provide continuum of cancer care. Over the last few decades, despite constraints in financial, infrastructure and human resources, Sri Lanka has moved forward in providing comprehensive cancer treatment and care. This section of the NSP is aimed at addressing areas in diagnostics and treatment and care which need strengthening and scaling up to further improve continuum of care in an equitable manner. Feasibility studies, gap analysis and scale up plans (SUP) recommended in the NSP will help policy makers to make decisions on why, where and when to allocate resources.

The strategy is to establish a Center of Excellence (CoE) in each province which will serve as the hub for diagnostics and provision of a range of treatment and care for adults and children. Apeksha Hospital at Maharagama will be the National Center of Excellence in cancer care for adults and children in Sri Lanka with upgraded State-of-The-Art diagnostics powered by technology and treatment modalities. Apeksha will serve as the CoE for Western Province. CoE will be conducted with operational guidelines to provide medical oncology, radiation oncology surgical oncology with respective sub-specialties, gynecology–oncology supported by pathology (histological, chemical and Haematology) and laboratory services. Patient centered care will be provided by multi-disciplinary teams according to clinical guidelines prepared by experts using evidence-based cost effective treatment pathways. Initially pediatric oncology will be provided at Apeksha and at selected CoEs and will be scaled up to other CoE when infrastructure and human resources are available. Treatment centers at secondary and tertiary hospitals will network with CoE for shared care until they are strengthened to the level of CoEs after conducting needs assessment and feasibility studies.

Treatment centers will conduct clinical oncology outreach clinics to increase accessibility and availability of services. Dedicated day treatment units will be established to reduce in-patient burden and for convenience of patients. Treatment centers will be addressing not only management of all aspects of the cancer itself, but also rehabilitation, palliative care and the psychosocial needs of the patients and their families including caregivers. Patient inclusiveness will be introduced to cancer management and developing a management plan will be done in consultation with the patient depending on the literacy level of the patient or with a family member. In order to reduce loss to follow up, a patient navigation system maintaining confidentiality will be introduced in consultation with people living with cancer.

Tumour boards will facilitate decision making by ensuring cost-effective treatment pathways are given to patients as it has been observed that GOSL spends billions of rupees on treatment and care with poor survival benefits. They will also serve as a monitoring and evaluation system and will make necessary recommendations to the NAC for action. Regular clinical audits will be introduced to improve the quality of services.

A referral and a back referral system will be introduced which will enhance patient compliance, reduce loss to follow up and minimize overcrowding. The NCCP will take steps to integrate continuum of cancer care into the primary healthcare strengthening "shared care cluster" system which would increase access to services for marginalized populations and socio-economically backward populations and also reduce their household out of pocket expenses. This strategy will help people in underserved and geographically isolated areas to seek services at cancer treatment centers closer to their homes so that no one is left behind.

The journey of living with cancer begins with the diagnosis of the illness. The need for an accurate and a timely diagnosis cannot be underestimated as delays in confirmation can have significant psychological effects on the patient and the family, defaulting for treatment or late access to healthcare services may even impact on the likely effectiveness of treatment and escalating health costs. In Sri Lanka, histopathology is still the reference standard for final diagnosis of many cancers. Histopathology services are available in all tertiary and secondary level hospitals to support cancer diagnosis while chemical pathology, haematology and microbiology services which support cancer diagnosis and treatment are not uniformly available in all hospitals. A network of pathology services involving all treatment centers will be established to increase coverage of services. Facilities such as flow cytometry and immune-chemistry will be enhanced at CoE. Technical advances such as Tumour marker testing (Bio-Markers) and Molecular genetic testing with DNA sequencing will be initiated at Apeksha and National Hospital of Sri Lanka (NHSL). The stem-cell transplantation center at Apeksha is currently performing only analogous transplants and it will move to include autologous transplants this year. The NSP is proposing to establish stem cell transplant centers in other CoEs after conducting a feasibility study.

General radiography services are presently available in almost all the hospitals but will be further strengthened after a gap analysis. Ultrasound facilities are available in all cancer treatment centers. Ultra Sound guided biopsies, endoscopy and laparoscopy services will be enhanced after conducting a needs assessment. This NSP is focusing on scaling up CT, MRI facilities and establishing advanced diagnostic facilities such as a PET scanning and Gamma cameras at CoE. The on-going project of installing picture archiving and communication system (PACS) to 20 hospitals will be an important source of storing and sharing images. Quality of radiology services will be enhanced with the introduction of guidelines, protocols and SOPs. Centers with basic radiology facilities will be linked to higher centers through a referral system. Terms of reference will be prepared to appoint an expert technical working group to carry out projections/forecasting and accurately estimating diagnostic equipment and auxiliary devices to avoid under or over purchases.

Nuclear medicine services are provided in most treatment centers despite challenges. Currently radiotherapy is provided in seven (7) CoEs and the plan is to increase the number of linear accelerator (LINAC) machines to the other CoE to accommodate the demand for radiotherapy. Projections/estimations to further increase LINAC machines should be done by a panel of experts taking into consideration that a modern LINAC machine is estimated to treat 500 patients a year, geographical distribution of disease burden, infrastructure facilities and human resources. Brachytherapy services, radioactive iodine therapy will be scaled up based on the disease burden, infrastructure facilities and availability of resources. There is a need of a trained nuclear medicine physician for each CoE. The NSP calls for the establishment of a central nuclear pharmacy managed by a trained nuclear pharmacist. Trained physicists, diagnostic and therapeutic radiographers (both male and female) should be available at CoEs. The IAEA will continue to support the training program for physicists to acquire skills in new technologies. Sri Lanka School of Radiography trains radiographers. The NSP highlights the need to include medical engineers to be in charge of maintenance of radiation equipment. NSP is also focusing on updating radiation safety regulations and monitoring its implementation at treatment centers.

Onco-surgical services are available in all treatment centers. Cancer surgeries are done by both onco-surgeons and general surgeons. For a country faced with over 20,000 new cancer patients being diagnosed every year, there is a clear need of certified surgical oncologists along with the availability of nurses and anesthesiologists. Oral cancers and potentially malignant conditions are managed by Oral and Maxillofacial (OMF) surgeons belonging to dental related specialty.

Each CoE will be linked to specialized clinics such as Breast Care Clinics and Colposcopy Clinics. Breast clinic will be conducted using operational guidelines to ensure quality of care. Capacity building of doctors and nurses will be done to counsel patients and families before and after interventions. Appointment of Breast Care Nurses will be negotiated with MoH. Colposcopy services of the functioning five (5) colposcopy clinics at CoEs will be provided with operational and clinical guidelines to provide quality care. There is an urgent need to identify a services package of diagnostics and treatment services for a colposcopy clinic. In partnership with FHB a SUP will be developed to increase colposcopy clinics and to address training needs. Strong lobbying with policy makers is necessary to optimize onco-surgical services and onco-gynecology services.

Quality of medical oncology services will be ensured by continuous training, application of evidence based clinical guidelines and medical audits. An Essential Oncology Medicine List (EML) is available to support chemotherapy services for adults and children. A continuous supply of medicines and other commodities for treatment and care will be ensured by accurately forecasting and quantification by an expert committee and by linking treatment centers to the Procurement Supply Chain of the Central and Regional Medical Supply Divisions (MSD) and e-MIS of NCCP. HR plans prepared by each treatment center for all categories of staff should be included in the Master HR Plan for cancer care.

Strategy 4– Diagnostics, treatment and care

Strategic Direction 4.1	**Increase accessibility and availability of diagnosis and comprehensive treatment & care by upgrading National Cancer Care institution (Apeksha Hospital) and establishment of centers of excellence in each province which networks with treatment and care centers in other secondary and tertiary level hospitals**
Major activities	
4.1.1	National Cancer Care center (Apeksha Hospital) to be up-graded as a State-of-the –Art epi center to provide comprehensive cancer care to adults and children
4.1.2	Establish a Center of Excellence (CoE) in cancer care in each Province for adults & children
4.1.3	Strengthen other cancer treatment centers to provide basic cancer treatment and care and network with CoE
4.1.4	Develop guidelines for diagnostics, treatment and care for common cancers including reconstruction procedures
4.1.5	Develop HR Plans for all treatment centers for (relevant) categories of staff
4.1.6	Establish multidisciplinary teams for all CoE
4.1.7	Scale up day treatment units (dedicated day hospitals) with dedicated staff
4.1.8	Ensure quality of care for adults and children in all treatment centers
4.1.9	Establish four technical sub-committees for radiation safety, Laboratory and diagnostic pathology, diagnostic radiology, and treatment under the TAC of diagnostics and treatment and care
4.1.10	Establish multidisciplinary tumor review Boards for diagnosis, treatment and rehabilitation in each province
4.1.11	Develop an Essential Oncology Medicine Drug lists for common adult and pediatric cancers are updated and disseminated
4.1.12	Include cancer diagnostics, treatment, pharmaceuticals and other commodities in the Procurement Supply Management system
4.1.13	Build public-private partnership for diagnosis and treatment with appropriate referral mechanism

Strategic Direction 4.2	**Increase accessibility and availability of diagnostics (laboratory and pathology, medical imaging) for cancer care**
SDD 4.2.1 Provision of medical devices for b**asic diagnostic radiology** to all CoEs and other treatment centers	
Major activities	
4.2.1.1	Establish general X-ray systems
4.2.1.2	Establish Digital X-ray systems
4.2.1.3	Improve Ultra Sound Scanning
4.2.1.4	Increase the number of endoscopic facilities at COEs (for diagnosis and non-invasive procedures)
4.2.1.5	Establish QA systems for radiology diagnostics
SDD. 4.2.2 Strengthen/establish **diagnostics for nuclear medical imaging** at all CoEs	
Major activities	
4.2.2.1	Strengthen CT scan facilities at all treatment centers
4.2.2.2	Strengthen MRI scan facilities at all CoEs
4.2.2.3	Provide PET, PET /CT scanner facilities to Apeksha
4.2.2.4	Provide PET scanning facilities to other CoEs in a phased out manner
4.2.2.5	Install Gallium 68 generator to start PET scan
4.2.2.6	Provide CT simulators to all CoEs
4.2.2.7	Scale up use of Gamma Camera facilities
SDD 4.2.3 Ensure **Laboratory diagnostic** services are available at CoEs	
Major activities	
4.2.3.1	Strengthen general laboratory diagnosis of cancer at all treatment centers
4.2.3.2	Establish blood chemistry testing (liver function tests, renal function tests, alkaline phosphate and calcium) at CoEs
4.2.3.3	Establish Tumour Lysis Syndrome testing (lactate dehydrogenase, uric acid, potassium, calcium, phosphate), at CoEs
4.2.3.4	Provide Complete Blood Count with differentials and other haematological tests to all CoEs

4.2.3.5	Establish Disseminated Intra-vascular coagulation panel to all CoEs
SDD 4.2.4 Ensure **pathology diagnostic** services are available at CoEs	
4.2.4.1	Establish flow cytometry facilities for CoE
.4.2.4.2	Ensure Immuno-Histo-chemistry (IHC) facilities are available in CoE
4.2.4.3	Establish Molecular genetic testing with DNA sequencing at Apeksha and a Molecular Laboratory at Karapitiya-TH
4.2.4.4	Establish Tumour marker testing at all CoEs
4.2.4.5	Strengthen /establish medical devices for sentinel node mapping prior to surgical intervention

Strategic Direction 4.3	**Increase accessibility and availability of comprehensive high quality cancer treatment and care facilities for continuum of care**
SDD. 4.3.1 Strengthen **Nuclear Medicine (Radiation therapy)** services at CoEs	
Major activities	
4.3.1.1	Provide External Beam Radiation therapy by installing Linear Accelerators (LINAC)
4.3.1.2	Expand HDR brachytherapy (Internal Radiation Therapy) from currently available 2 centers to all other/ selected CoE
4.3.1.3	Increase Radioactive-iodine (RAI) treatment centers to all CoEs
4.3.1.4	Establish a central Radio-Pharmacy (Nuclear Pharmacy)
4.3.1.5	Establish Cyclotron facility for production of radiopharmaceuticals /isotopes for radiation therapy in the Nuclear Pharmacy
4.3.1.6	Ensure HR are available to provide radiation therapy at all CoEs
4.3.1.7	Develop a Strategic Plan for Radiotherapy
SDD. 4.3.2 Strengthen onco-surgery services	
Major activities	
4.3.2.1	Strengthen specialized services at CoEs
4.3.2.2	Ensure availability of critical onco- surgical sub-specialty services to support comprehensive cancer treatment and care

SDD. 4.3.3 Strengthen onco-gynecology services at treatment centers	
Major activities	
4.3.3.1	Increase access to specialist services
4.3.3.2	Establish colposcopy clinics in treatment centers
SSD 4.3.4 Ensure quality of care at Breast Clinics	
Major activity	
4.3.4.1	Introduce guidelines /SOPS
4.3.5 Strengthen Medical oncology	
Major activity	
4.3.5.1	Improve medical oncology services at all treatment centers
4.3.6 Strengthen services for oral cancer and OPMD	
Major activities	
4.3.6.1	Improve treatment and care for oral cancer and OPMD
4.3.7 Establish advanced treatment modalities for cancer	
Major activity	
4.3.7.1	Establish/strengthen Stem-cell transplantation
4.3.8 Establish/ Strengthen follow up of patients commenced on treatment	
Major activities	
4.3.8.1	Introduce a system to reduce loss to follow up

Strategic Direction 4.4	**Ensure safety of healthcare workers and patients exposed to radiation and cytotoxic materials**
Major activities	
4.4.1	Establish comprehensive radiation safety and management
4.4.2	Enforce knowledge and practice of radiation protection in diagnostic imaging
4.4.3	Establish comprehensive cytotoxic safety and management
4.4.4	Install Cytotoxic isolators
4.4.5	Ensure radiation protection of patients & staff
4.4.6	Establish laboratory safety and waste disposal of clinical materials
4.4.7	Strengthen the supply chain to ensure regular supply of radiotherapy auxiliary equipment for safety

Strategic Direction 4.5	**Improve accessibility and availability of cost effective evidence based Paediatric oncology services**
Major activities	
4.5.1	Scale up paediatric oncology services to all CoEs in a phased manner
4.5.2	Ensure comprehensive care for pediatric cancer patients are provided in the CoEs
4.5.3	Ensure National Essential Pediatric oncology drugs are available without stock-out situations
4.5.4	Establish telemedicine services for pediatric oncology

Strategic Objective : 5

Ensure access & availability of survivorship, rehabilitation and palliative care facilities at all health service levels and at community level for cancer patients and support to their families and care givers

Rationale

The number of cancer survivors is expected to increase as the GOSL is investing in cancer care for early detection and linking early detected patients for provision of comprehensive care with evidence based cost effective treatment pathways. Thus their health needs must be addressed by the health system. Survivorship care includes prevention and surveillance for recurrent and new cancers, management of long-term toxicity and co-morbid conditions and surveillance and management of psychosocial effects[2,16,,25,26.27]. Survivorship care should be delivered after completion of treatment and should be coordinated by care teams that include a primary care physician. A National Survivorship Plan will be developed for adults and children by identifying the basic components for survivorship. There are about 600-700 paediatric cancer cases detected annually and they need multi-disciplinary survivorship care during their transition from childhood into adulthood[9]. The care team will be developing individual plans adapting to the needs, preferences, of each patient and available resources and the capacity of the health system[16,26,27]. Consideration will also be given to patients who do not complete recommended treatment.

Rehabilitation and palliative care are two essential components in continuum of cancer care[2,26,27]. People living with cancer need physical, psychological and social rehabilitation to improve their quality of life[2,25.26] by reducing the disabling effect of cancer and its treatment and should be able to support for mobility, self-care, emotional well-being, spirituality, vocational pursuits, social interactions to perform everyday activities to live as independently as possible[2]. Rehabilitation should be provided as early as possible after treatment and within the community where the person lives[25,26]. The type and intensity of rehabilitation depends on the type and severity of the impairment, and the type and magnitude of the treatment provided. Rehabilitation for cancer patients will be provided through the existing public physical and psychosocial rehabilitation services[25.26,27].

Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual (WHO 2016)[2,26,27]. In Sri Lanka, the need for rehabilitation and palliative care is increasing owing to the aging population and the rising prevalence of NCDs. Since almost 83% of all deaths in Sri Lanka are due to NCDs[3,7] the present NSP is providing for rehabilitation, pain relief and palliation as theNational Health

Policy identifies the need for palliative care to all patients who need such care for them to live and die in dignity.

Available data show more than 70% of oral cancer, more than 50% of cervical cancer and more than 30% of breast cancer cases present at late stages of cancer[9]. In such a scenario, according to available data on incidence and cancer stage, an estimate is that there are more than 15000 cancer patients in need of palliative care at any point of time[27]. Currently, out of all cancer and non-cancer patients needing palliative care, less than 1% have access to palliative care services[27]. Very few of the patients with diseases other than cancer in need of palliative care have access to proper palliative care[27]. In this scenario, patients and their families and the general public should be aware of the availability of palliative care and how best it could be utilized. The present NSP in its SBCC strategy will include interventions to create awareness among these groups for them to avail of these services and to harness their support for cancer care.

National Strategic Framework for Palliative care was developed in Sri Lanka and this present NSP supports its strategies[27]. Apeksha hospital has a fully-fledged out-patient palliative care service 6 days of the week being the epicenter for treatment and care. In addition there are 5 hospitals providing formal palliative care (TH-Karapitiya, TH- Ratnapura, DGH- NuwaraEliya and Moneragala). Palliative care has to be integrated into the health system as an essential component of comprehensive healthcare. Public Health Nursing Officers (PHNO) attached to primary healthcare units have been trained to provide home based care and they will be given basic training in palliative care. TH-Karapitiya provides palliative care services through a pallitive care centre and there are home-based programmes and hospice services provided by civil society organizations (CSO). They collaborate with Government sector cancer treatment centers. The present NSP recognizes the need to integrate palliative care as an essential component of comprehensive healthcare across all levels of healthcare services and community. Clinical guidelines with service packages for each level including home based care will be developed to maintain standards and quality of care. The present NSP is also addressing the need of infrastructure and human resource development for delivery of palliative care at both institutional and community level. NCCP will advocate for a legislative framework for delivery of palliative care. A continuous supply of essential medicines and technologies will be monitored by a system linked to central and regional MSDs.

Capacity building of institutional and home based care givers will be undertaken by the NCCP with other stakeholders such as the Task Force for Palliative Care of the Sri Lanka Medical Association and the Palliative Care Association of Sri Lanka. The PostGraduate Institute of Medicine (PGIM) has initiated a one year full time PostGraduate Diploma course in Palliative Medicine in 2018. Further, palliative care will be introduced into relevant undergraduate medical disciplines, post basic nursing training course and relevant paramedical courses in the near future. The present NSP is promoting partnerships with government and non-government organizations to deliver home and hospice based palliative care, empower family members, care givers and volunteers for provision of basic palliative care. The SBCC strategy will include interventions to inform general public and civil society organizations on the need to support survivorship, rehabilitation and palliative care. The SBCC strategy will also address

developing positive attitudes and behaviors towards providing care by healthcare workers. Research on suitable models for implementation of palliative care will be conducted.

Strategy 5 - Survivorship, Rehabilitation and Palliative care

Strategic Direction 5.1	**Establish survivorship care and rehabilitative care at all service levels and community level**
Major activities	
5.1.1	Introduce the concept of survivorship & cancer rehabilitation to existing health care system
5.1.2	Establish support groups among cancer survivors and well-wishers
Strategic Direction 5.2	**Facilitate effective integration of specialist palliative care for cancer across all levels of healthcare (tertiary, secondary and primary) and community level**
Major activities	
5.2.1	Advocate palliative care is an essential component of comprehensive healthcare and Integrate into primary, secondary and tertiary healthcare system
5.2.2	Establish palliative care units at different healthcare levels commencing from treatment centers and scale up to other units
5.2.3	Strengthen legislative provisions for delivery of palliative care
5.2.4	Promote provision of basic palliative care services in hospice, CSO and home based care
5.2.5	Ensure PHNO provide basic palliative care as per their TOR
5.2.6	Ensure M&E using national indicators
Strategic Direction 5.3	**Develop knowledge and skills for palliative care among cancer treatment and care service providers across all health service levels and community care providers**
Major activities	
5.3.1	Develop multi-disciplinary teams to provide palliative care for each health service level and at community level
5.3.2	Ensure inclusion of palliative care in training programs in Medicine, Paediatrics, Nursing, Pharmacy and other relevant health disciplines
5.3.3	Advocate PGIM to sustain training

Strategic Direction 5.4	**Develop partnerships with other government, non-government organizations (private sector hospitals, NGOs, CSOs) and General Practitioners to provide basic palliative care**
5.4.1	Include appropriate interventions in the SBCC strategy to Educate general public on pain relief and palliation and services available in the public and private sector
5.4.2	Establish standards and accreditation systems to strengthen palliative care services in hospices, NGOs and Community Service Organizations
5.4.3	Develop linkages with General Medical Practitioner Associations
5.4.4	Empower family members, caregivers , general public for provision of basic palliative care and liaise them with government healthcare providers /Private Practitioners
Strategic Direction 5.5	**Ensure availability of essential drugs and technologies for provision of palliative care at each level of care**
Major activities	
5.5.1	Ensure essential medicines (including morphine) and equipment are continuously available at each service level

Strategic Objective : 6

Strengthen cancer information systems and surveillance to provide accurate and timely data to monitor progress and evaluate outcomes of cancer prevention and control actions

Rationale

The purpose of having a cancer information system is to provide accurate, timely and complete data on a continuing basis on cancer incidence, prevalence of risk factors, determinants of cancer, diagnostic methods, types of cancers, stage distribution, treatment patterns and outcomes, mortality and survival for program planning, formulate national policy, conduct epidemiological research and for monitoring and evaluation of interventions. The NCCP will establish a Strategic Information and Management (SIM) unit which will be dedicated to capture the multitude of information generated during cancer prevention and control activities including treatment and care. An electronic Management Information System (e-MIS) will be established to replace the paper based data system. It will be fed with routine data on program management, surveillance data of cancer registries, research data and clinical outcomes. The results based framework which has been developed in line with the National Health Performance Framework of the Ministry of Health[28] will be the tool to monitor and evaluate the current NSP.

This NSP is focusing very strongly on disease registers which are an integral component of information systems. It is a part of the surveillance system for several diseases, but they have been more important, and successful, for cancer than for any other condition. There are three major types of cancer registries: (i) Population based cancer registry (PBCR) which collects information from multiple sources on all reported neoplasms occurring in a geographically defined population (ii) Hospital based cancer registry (HBCR) which collects data on cancer patients attending for treatment and care (iii) Pathology based cancer registry which collects newly diagnosed cancers from one or more pathology laboratories giving the earliest 'snap shot' picture of cancer profile.

At present there are two types of population based registries in Sri Lanka and they are the Sri Lanka Cancer Registry (SLCR) and the Population-Based Cancer Register (PBCR) Colombo district. In 1980, NCCP became the formalized source for maintaining the Sri Lanka Cancer Registry (SLCR) which is the principal source of data for the entire country which gather data from cancer treatment centers from the public and private hospitals, pathology laboratories and Oral and Maxillofacial (OMF) units in the public sector[9]. The role of SLCR and the essential links from which it has to collect data to plan for effective action has been identified. Data to the SLCR is entered and analyzed using a software recommended by IARC/IACR name CanReg5 and a quality assurance system is established which enables international reporting and

contributing to computing global burden of cancer and local burden[9]. The NCCP has initiated skills building training of relevant officers in the relevant institutions. The current NSP is aiming to incorporate entire private sector cancer incidence data and country wide cancer mortality data into the SLCR in order to obtain international accreditation.

The PBCR Colombo was established in 2012 and provides inputs to the SLCR. The present NSP is focusing on initially strengthening the PBCR Colombo and identifying strategic locations for new PBCR and HBCR and data bases to scale up in a phased manner taking into consideration reporting trend and resources[21]. A new PBCR for the Northern Province has been initiated[9].

In 1985 active data collection of hospital-based cancer incidence was commenced. A hospital based registry (HBCR) is maintained at the main treatment center at the Apeksha Hospital in Maharagama[21]. The present NSP will promote integration of the hospital MIS to the HBCR to provide valuable sources of information regarding methods of diagnosis, stage distribution, treatment methods, response to treatment, and survival. Lack of infrastructure facilities and human resources hinder the smooth operation of the registry at the main cancer institution. Some provincial hospitals, like the Karapitiya Teaching Hospital will be supported to initiate a HBCR as there are medical records and existing information system is adequate for a cancer registry[9]. Indoor Morbidity and Mortality Register (IMMR) will also be linked to the HBCR[9]. This NSP is giving importance to establishing a Hospital Based Paediatric cancer registry for Sri Lanka in par with Global Initiative for Paediatric Cancers.

Registrar General's Department (RGD) which collects data on vital events through the civil registration system is a useful source which provides information on deaths from cancer in the population. The NCCP will develop a strong link with the RGs department which is mandated to register all deaths in the country. Data on deaths due to cancer in Colombo district are reported to the Colombo based PBCR by Divisional the Registrars of Deaths. However, mortality statistics are produced according to the underlying cause of death, which may not necessarily capture data on the presence of a particular cancer. Yet, mortality data is useful for triangulation of data. In this scenario, a central level coordination of data management at the NCCP is a need.

The NCCP will work with relevant stake holders of the Ministry of Justice to enact legislations to make cancer a notifiable disease which will facilitate reporting to become mandatory. Therefore all institutions identified by the NCCP such as health insurance companies, department of Indigenous Medicine possessing cancer related data will be mandated to provide data to the SLCR.

STEPS survey provides population level data on behavioral and metabolic risk factors for chronic NCDs. The NCCP will coordinate with the NCD unit to integrate STEPS surveillance system into the cancer information system in order to provide evidence to be used for planning and monitoring national cancer prevention programmes as well as serving as an international standard for comparison purposes. The present NSP is aiming to link cancer information system with other screening programs such as Cervical Cancer screening program of the FHB and data bases related to HPV and HBV vaccination of the Epidemiological Unit to make optimal use of such data.

Guidelines and formats will be prepared to gather complete, accurate and timely data for reporting without duplication and to maintain uniformity of data management and standards. The present NSP is striving for infrastructure development and deployment of human resources. Staff training is necessary with a skill mixture especially to analyze collected data to document cancer patterns in the country cancer burden, mortality rates, treatment pathways, and clinical outcomes, survival rates, evaluating trends in the cancer incidence over time and for monitoring and evaluation of programmes which are valuable data for situation analysis, research on the causes and control of cancer and policy formulation.

Strategy 6- Strategic Information & Management

Strategic Direction 6.1	**Strategic information for monitoring & evaluation of national response to cancer prevention and control in Sri Lanka**
Major activities	
6.1.1	Establish a dedicated Strategic Information and Management Unit (SIM) at the NCCP with infrastructure and trained human resources
6.1.2	Develop an Electronic Management Information System (eMIS) at the NCCP to monitor prevention & control of cancers in Sri Lanka
6.1.3	Compile and disseminate information related to prevention & control of cancers using appropriate channels of communication
6.1.4	Prepare Annual Reports, relevant sections of other regular publications (Annual Health Bulletin, Annual Performance Report of Ministry of Health .... Etc) appropriate to target audience in timely manner
Strategic Direction 6.2	**Strengthening National Cancer Registry Programme (Sri Lanka Cancer Registry) with linkages to all PBCR, HBCR, Pathology laboratory based and other surveillance systems and programmatic data from relevant sources**
Major activities	
6.2.1	Generate most accurate timely cancer incidence data of whole country & disseminate via communication channels
6.2..2	Update Standard Operational Procedures (guidelines with reporting formats, indicators) for PBCR according to the IARC/IACR standards
6.2.3	Strengthening infrastructure and human resources and ensure resources are available to collect continuous, accurate, timely data and analyze for action

6.2.4	Ensure officers with the correct skill mix is trained in cancer surveillance & death registration (hospital staff of public and private sector, death registrars etc) to provide comprehensive, timely, confidential data as per IARC/ IACR standards
6.2.5	Introduce techniques for forecasting incidence of cancer, mortality rates, survival rates
Strategic Direction 6.3	**Strengthening Population Based Cancer Registries (PBCR) to be in par with IARC /IACR standards**
Major activities	
6.3.1	Strengthen Population Based Cancer Registry of Colombo District (PBCR Colombo) to generate timely reports
6.3.2	Establish PBCR in other provinces in a phased manner
6.3.3	Update Standard Operational Procedures (guidelines with reporting formats, indicators) for PBCR according to the IARC/IACR standards
6.3.4	Link all PBCRs to Sri Lanka Cancer Registry (SLCR) to generate timely reports
6.3.5	Continue the existing Collaborative Research Agreement with IARC to further strengthen PBCR initiatives
Strategic Direction 6.4	**Establish HBCR in all cancer treatment centers and ensure reporting to SLCR**
Major Activities	
6.4.1	Develop Standard Operational Procedures (guidelines with reporting formats, indicators) for initiating and maintaining HBCR
6.4.2	Link all HBCRs to Sri Lanka Cancer Registry (SLCR) to generate timely reports for action
6.4.3	Train staff of treatment centers on management of comprehensive and confidential data
6.4.4	Monitor progress and timely reporting to SLCR based on the identified indicators
6.4.5	Establish Hospital Based Paediatric cancer registry for Sri Lanka in par with Global Initiative for Paediatric Cancers
Strategic Direction 6.5	**Expand pathology based cancer registries to all pathology laboratories (Histopathology /Haematology /Oral Pathology) and ensure timely reporting to SLCR**

Major activities	
6.5.1	Update Standard Operational Procedures (guidelines with reporting formats, indicators) to streamline pathology-based cancer registration
6.5.2	Train staff at pathology laboratories on management of comprehensive and confidential data
6.5.3	Monitor progress by NCCP and timely reporting to SLCR based on the identified indicators
Strategic Direction 6.6	**Integrate cancer registry information system into electronic patient management information systems in CoE secondary and tertiary hospitals and link to NCCP e-MIS**
Major activities	
6.6.1	Select the variables that needs to be shared across hospital levels (from point of diagnosis & point of treatment) while maintaining confidentiality
6.6.2	Incorporate relevant details to cancer registry information system from non-oncological settings (Oro Maxillo Facial units, Gastro-intestinal units, Genito-urinary units, Neuro-surgical units..... etc)
Strategic Direction 6.7	**Improving the quality & coverage of cancer incidence & mortality data**
Major activities	
6.7.1	Ensure uniform latest coding of International Classification of Diseases (ICD) to code both morbidity & mortality of different cancers
6.7.2	Train staff of Medical Statistics Unit, NIHS, Registrar General's Department)on data collection, data entry and analysis
6.7.3	Further strengthening cancer registry legal framework towards declaring as a disease for mandatory reporting and advocate to make cancer a notifiable disease
Strategic Direction 6.8	**Linking e-MIS with information and surveillance systems of other relevant health sector facilities for prevention & control of cancers**
Major activities	

6.8.1	Integrate chronic NCD risk factor surveillance systems (STEPS survey, HLC Information System) to the NCCP information system
6.8.2	Integrate cervical cancer screening information system to the cancer information system
6.8.3	Integrate HPV and HBV vaccination data to the cancer information system
6.8.4	Integrate hospital dental clinic data on OPMD / ORAL cancer information system

Strategic Objective 7

Promote research and utilization of its findings for prevention and control of cancers

Rationale

Cancer research in Sri Lanka is carried out to provide evidence to develop policy and strategies for prevention, diagnosis, treatment and care, monitor and evaluate interventions. Cancer research was focused mainly on behavioral risk factors and the present NSP is identifying the need to increase the scope to focus on all the pillars of cancer control continuum. It will focus on research on health systems and polices, epidemiological and laboratory research, clinical research to determine the effectiveness of clinical algorithms given in local guidelines and adherence to clinical guidelines, impact of treatment pathways and comparisons to select cost effective treatment modalities, drug toxicities and co-infections, radiation oncology, radiation safety measures.

Initiation of epidemiological modeling for forecasting incidences and mortality and survival rates will be helpful in not only understanding the disease burden but infrastructure and workforce development. Forecasting pharmaceutical and non-pharmaceutical requirements will be useful for fund allocations.

The NCCP is also seeking for research evidence on genetic aspects of cancers, health systems response to provision of services at different service levels to both adults and children, patient satisfaction, service providers attitudes, accessibility of services to all population groups equally and in a timely manner, waiting times for diagnosis, diagnostic assessments, availability of infrastructure and human resources and its impact on patient management, quality of life and survival rates. Since the present NSP has given due consideration to survivorship, rehabilitation and palliative care research evidence on the implementation of such interventions and its impact on not only on health services but on the person living with cancer, families and caregivers will be useful to monitor and evaluate the progress of current interventions and outcome and if necessary to develop new strategies. The NCCP requires the cooperation and collaboration of a wide group of stakeholders from the government health and non-health sector, professional colleges, academia, private sector, community including support groups, patients themselves and their families and caregivers and international expertise.

Strategy 7- Research in Prevention and Control of Cancers

Strategic Direction 7.1	**Identify research priorities on prevention and control of cancer**
Major activities	
7.1.1	Strengthen the Technical Advisory Committee (TAC) on Cancer Research by engaging multi-sectoral, multi-disciplinary stakeholders to identify research priorities
Strategic Direction 7.2	**Promote a conducive environment for cancer research**
Major activities	
7.2.1	Facilitate research opportunities through communication with Sri Lankan & International Institutes based on identified research priorities.
7.2.2	Promote Post Graduate trainees to involve in cancer research from bench to bed side
7.2.3	Advocate for a research budget
7.2.4	Promote and conduct clinical research related to cancer control
7.2.5	Link with local organizations e.g. National Science Foundation, Atomic Energy Authority, Central Environmental Authority, to include cancer research
7.2.6	Advocate to include dedicated research grant for cancer research through National Research Council
7.2. 7	Build partnerships with International agencies e.g. IARC for collaborative research
Strategic Direction 7.3	**Translate research evidence into practice to strengthen preventive services, treatment and care services**
Major activities	
7.3.1	Research committee to formulate recommendations to strengthen policy formulation and programme management
7.3.2	Annual reports to highlight cancer research findings in Sri Lanka and gaps

Annex-1

Prevalence of cancer related risk factors in Sri Lanka and health and economic consequences

The STEPS survey of 2015 has highlighted the magnitude of the tobacco problem when it records that nearly 45.7% males of 18-69 years consume tobacco in either smoke or smokeless form[11]. Among males 29.4% were current tobacco smokers and 26.4% were current smokeless tobacco users. In women smokeless tobacco use (5.3%) was more prevalent than tobacco smoking (0.1%). The Global School-based Health Surveillance System survey (GSBHSS) (2016) done among 13-17 year old students recorded the prevalence of current use of any form of tobacco to be 9.2% with 3.5% being current tobacco smokers and 2.3% were smokeless tobacco users.

Non-smokers who breathe in the smoke of others (also called second-hand smoke or environmental tobacco smoke) are at increased risk for lung cancer. GSBHSS reports that a significant amount (42.3%) of students was exposed to secondhand smoke as either a parent or guardians were smokers. Most of these products are imported from neighboring countries. The best approach to preventing tobacco-related cancer is preventing the uptake of tobacco in any form.

In 2015, the direct and indirect costs of tobacco related diseases was estimated to be SLR 89.37 billion (USD 662 million) and the cost related to cancers was SLR 16.3 billion (USD 121.1). Oral cancer which is associated with tobacco chewing habits is the commonest cancer among Sri Lankan males and was the major contributor to cancer costs of tobacco.

Harmful use of alcohol is associated with a risk of developing health problems such as alcohol dependence, liver cirrhosis, cancers and injuries and an enormous amount of social and economic consequences. Alcohol consumption has been identified as carcinogenic for the following cancer categories cancer of the mouth, nasopharynx, larynx, oesophagus, colon and rectum, liver, pancreas and female breast cancer. STEPS survey recorded that 39.6% males in the 18-69 year old group and 2.4% females were current alcohol users. In 2015, the estimated cost related to treatment of alcohol related disease and lost earnings due to mortality and morbidity caused by hazardous use was SLR 119.7 billion (costs related to cancer was 9.8 billion and NCDs were 109.9 billion). In 2016, the total alcohol consumption per capita (≥ 15 year olds) was 4.3 liters of pure alcohol.

Physical inactivity among adults and school students was highlight in several survey reports. According the STEPS survey (2015) nearly 23% men and 38% women do not satisfy the WHO recommendations for physical activity. One third of women and one fifth of men are overweight or obese. Only 17.5% of the adult population consume WHO recommended daily healthy food servings[11]. Diets consisting of high carbohydrate, high sugar, salt and trans-fat and high quantities of processed food, physical inactivity and sedentary lifestyles are associated with overweight and obesity. Overweight and obesity are the causes of several cancers. It was

estimated that in Sri Lanka every year 52,000 years of healthy life are lost due to consumption of sugar sweetened beverages (SSB). Adult consumption of salt is two to three times higher than the recommended. The leading cause of death in Sri Lanka is ischemic heart diseases and the immediate risk factor for cardiovascular disease is hypertension or increased blood pressure and salt intake is the number one risk factor for high blood pressure. High salt intake is associated with gastric cancers.

NCD risk factors among children is rising with one in four students (26.2%) reported drinking carbonated soft drinks one or more times a day and 21% school children having admitted to consuming food from fast food outlets more than twice a week. Only 28% students have engaged in physical activities at least 60 minutes on five or more days of the week. Nearly 38% spend more than three hours daily attending to activities involving sitting down.

Environmental toxic elements (such as arsenic, copper, lead, cadmium, and mercury) have a detrimental effect on health outcomes. High level of arsenic from contaminated drinking water and food has been linked to a wide range of cardiovascular and neoplastic conditions. Some air pollution sources including fumes and solid fuel may cause lung cancer. Exposure to carcinogens such as asbestos, diesel exhaust gases and ionizing and ultraviolet radiation in the living and working environment can increase the risk of cancer2. Similarly, indiscriminate use of agrochemicals in agriculture and discharge of toxic products from unregulated chemical industries may cause cancer and other non-communicable diseases such as kidney disease. Data on these risk factors is sparse in Sri Lanka.

Human papilloma virus (HPV) is now a well- established cause of almost all cervical cancers. HPV is a sexually transmitted infection. HPV is a group of viruses that are extremely common worldwide—there are more than 100 types, of which at least 14 cause cancer. In Sri Lanka, according to estimates made in 2018, the number of annual incidence cases for cervical cancer is 1136. Cervical cancer is the 2nd leading cause of female cancers and the 4th leading cause of cancer among women in the 15-44 year age group. Age standardized incidence rate of cervical cancer is 7.8 per 100,000 women per year. It is estimated that annually 643 deaths occur due to cancer cervix and is the second leading cause of death among women of all ages and 3rd leading cause of death among women in the 15-44 year age group. Genital warts due to low risk HPV types are the 3rd leading sexually transmitted infection in Sri Lanka.

Health infrastructure and workforce capacity

The present NSP has highlighted the health infrastructure and workforce capacity related to the curative service provision of diagnostics, treatment and care, palliation, strategic information and research.

There were a total of 23,530 new diagnoses of cancer in 2018 and the total number of histo-pathologists in the country are 87 and they offer services for all other diseases as well and not only for cancer. The majority of the diagnoses (80%) are made in the public sector. Of the total only 57 are employed in the Ministry of Health and the others are attached to Universities, private sector or semi-government institutions. There is a mal-distribution of them among the government hospitals, where 42% of MOH specialists are employed in the Western Province.

There are 70 consultant Haematologists in the country and 71% (n=50) are employed by the MOH. The distribution of them in the provinces is unequal. Currently there are 80 post graduate trainees and they may not be adequate to cover the national needs. The outcome would be that people from poor socio-economic settings and rural areas may not be able to enjoy continuum of care for cancer. Autologous bone marrow transplant is only available at the Apeksha Hospital. Allogeneic transplant services are not available in the public sector at present, although 2 centres are planning to start and the 3rd transplant centre is planned in Kandy. Both autologous and allogenic bone marrow transplant services are available in the private sector. Flow cytometry facilities are available only in 6 hospitals and most of them are in the Western Province. MRD (minimal residual disease) detection by flow-cytometry is not performed in Sri Lanka, but it is planned to start at the Apeksha Hospital. Iimmuno-histo-chemistry (IHC) testing is available in Apeksha Hospital and in 8 other centers. The number of IHC markers for solid and hematological malignancies should not be limited and a continuous supply should be guaranteed.

There are 25 consultant chemical pathologists and 18 are attached to the MOH. Currently, there are 40 trainees in chemical pathology.

Standardized report templates are not used by any of these domains. There is no electronic system for result reporting in histopathology, haematology, and chemical pathology. This results in delays in issue of reports which has several consequences.

Sri Lankan oncology services are provided by clinical oncologists. There are currently 49 board certified oncologists practicing, 44 work in the public sector and 5 in the private sector. In addition, there are 2 paediatric oncologists. Although clinical oncologists are certified to practice medical oncology and radiation oncology, nearly one third of oncologists in Sri Lanka do not have access to radiotherapy facilities in the public sector. There are only 19.1 Radiation oncologists per 10,000 cancer population. Paediatric oncology and haemato-oncology are relatively new sub specialities in Sri Lanka. Currently, there are 18 board certified onco-surgeons and 6 gynecological -oncologists in practice.

Nuclear Medicine is available in 5 provinces and there are only 1.3 per 10,000 cancer population and Medical Phycists are only 11 per 10,000 cancer population. There is a shortage of radiographers especially females and it's a main obstacle for planning and effective implementation of national diagnostic imaging services and major challenge to establish a breast cancer diagnosis programme.

Diagnostics are not in optimum numbers. There are only 33 mammography units that are functional and most of them are analogue, very few digital. Digital and 3D mammography with biopsy under suction were available, but are not used due to lack of disposables which are too expensive. Therefore only tru-cut biopsy is performed under advanced mammography. CT scans & MRI scans are : 20.4 and 8.9 per 10,000 population. PET/CT is sparsely available : 1.3 per 10,000 population. There are no SPECT/CT scanners for hybrid imaging.

The present NSP aims to strengthen and scale up prevention offers which is the most cost-effective long-term strategy for the control of cancer while addressing the other approaches such as early detection, treatment, survivorship, rehabilitation and palliation.

Activity Plan for Prevention & Control of Cancer in Sri Lanka

Strategic Objective 1: High level political leadership, advocacy and governance to accelerate the national response for prevention and control of cancer with a robust integrated, coordinated multi-sectoral, multi- disciplinary national program with community engagement

Strategy 1 – Leadership, advocacy & Governance

Strategic Direction 1.1	**Providing highest political leadership to prevention and control of cancer as a national development challenge embracing a multisectoral approach**						
Major activities	**Sub activities**	**Responsibility**	**2020**	**2021**	**2022**	**2023**	**2024**
1.1.1. Harness political leadership to address prevention and control of cancer as a national development issue which needs a "whole of Government" and a "whole of society" approach	Advocate for "Health in all Policies" to ensure multi-sectoral involvement for prevention and control of cancer	SH, Additional Secretaries, DGHS, DDG-NCD, DDG-DS, DDG-PHS-1&2, D-NCCP		x			
	Prepare Financial Models for budgetary support and advocate for adequate financial allocation for National Cancer Prevention and Control Action Plan through Government budget and contributions of development partners	DGHS, Additional Secretaries, DDG-NCD, DDG-MS, DDG-LS, DDG-DS, DDG- Finance MoH, D-NCCP	x	x			
1.1.2. Advocate to include prevention & Control of cancer to be taken up as an agenda item at the National Health Council chaired by Hon Prime Minister and NCD Council chaired by Hon Minister of Health	Ensure prevention and cancer is addressed in National Health Council & NCD Council	SH, DGHS, DDG-MS, DDG-NCD, DDG- DS, D-NCCP	x	x			
Strategic Direction 1.2	**Strengthen National Cancer Control Program for advocacy and good governance**						
1.2.1. Strengthen planning coordination, M&E of cancer prevention and control activities at the NCCP	Appoint coordinators with TOR to ensure coordination of multi-sectoral, multidisciplinary interventions	DGHS & DDG-NCD, D-NCCP	x				
1.2.2. Strengthen National Advisory (NAC) Committee and other Technical Advisory Committees (TAC)	Allocate responsibilities as per TORs	SH, DGHS & DDG-NCD, D-NCCP	x	x	x	x	x
1.2.3. Advocate for creation of an enabling environment to sustain legislations, regulations already in place and initiate new laws when required	Quarterly meetings with law makers to monitor implementation of legislations, regulations on prevention and control of cancer	DGHS, DDG-NCD, DDG-E&OH, Legal officer-MoH, Ministry of Justice, D-NCCP, D-NCD	x	x	x	x	x
	Provide evidence for introduction of new laws and regulations related to food items, cosmetics and other consumables			x	x	x	x

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
1.2.4.Ensure availability of standardized care for all citizens across all levels of health services	Establish technical working groups to develop guidelines/ Protocols/SOP for early detection, diagnostics, treatment and care, survival, rehabilitation and palliative care	DDG-MS, DDG-DS, DDG-NCD, D-NCCP	x	x	x		
	Establish QA systems	DDG-NCD, D-NCCP, D-Healthcare Quality & Safety					
1.2.5. Ensure a referral and back referral system across all health service levels is in place	Conduct consultative meetings to develop a referral system	DDG-MS, DDG-NCD, DDG-DS, DDG-Planning, D-NCCP		x			
1.2.6. Develop a Master Plan for human resources for each strategy identified in the NSP	Respective sub-committees to develop plans identified in all strategies for staff allocation	DDG-MS 1&2 , DDG-NCD, DDG-DS, DDG-Planning, DDG-E&OH, D- NCCP		x			
1.2.7. Develop infrastructure plans for each strategy identified in the NSP	Respective sub-committees to develop plans identified in all strategies for infrastructure development	DDG-MS, DDG-NCD, DDG-Planning, DDG-logistics, DDG-DS, D-Bio-Medical Services, D-NCCP		x			
1.2.8. Develop a capacity building plan to ensure trained staff are available for (clinical, laboratory, pathology, radiology, treatment and care, rehabilitation and palliative care	Respective sub-committees to develop plans identified in all strategies to ensure comprehensive care is provided	DDG-MS, DDG-NCD, DDG-Planning, DDG-DS, DDG-ET&R, D-NCCP		x	x		
1.2.9. Establish a Procurement Supply and Management (PSM) system for diagnostics, pharmaceuticals and non-pharmaceuticals devices for the NCCP	Develop a National PSM plan for the NCCP	DDG-MS, DDG-NCD, DDG-DS, DDG-Logistics, D-MSD, D-information, D-NCCP	x	x	x		
	Develop linkages with e-MIS of central and regional MSDs, treatment centers						
1.2.10.Establish a Strategic Management & Information system in the NCCP	Strengthen SIM unit	DDG-NCD, DDG-DS, D-NCCP, D- Information	x	x	x	x	x
	Develop a National M&E Plan for cancer prevention and control						
	Establish linkages with all stakeholders to collect timely, accurate, relevant data	D-NCCP	x	x	x	x	x
Strategic Direction 1.3	**Strengthen Provincial teams for prevention and control of cancer**						

1.3.1. Support provincial administration to plan, implement multi-sectoral cancer prevention & control interventions with community engagement	Establish Provincial /District Committees	DDG-NCD, PDHS, RDHS, D-NCCP	x	x			
	Develop Provincial/District multi-sectoral Plans	DDG-NCD & D, D-NCCP, PDHS, RDHS	x	x			
	Conduct advocacy meetings for politicians, religious leaders, community leaders and other stakeholders	DDG-NCD, D-NCCP	x	x			
1.3.2.Ensure infrastructure are available at all health service levels as per infrastructure Master Plan	Develop a capacity building plan for healthcare workers of each level	DDG-NCD, DDG-ET&R, D-NCCP		x	x	x	
1.3.3.Develop HR plan for holistic cancer care at all levels of health services as given in the HR Mater Plan of NCCP	Plan cadre projections for the Province	DDG-NCD, DDG-DS, DDG-MS, PDHS, RDHS		x	x		
	Ensure implementation of HR plan	DDG-NCD, DDG- MS, PDHS, RDHS		x	x	x	x
1.3.4. Ensure monitoring and evaluation of interventions as per District Plans	Conduct regular monitoring of interventions and report to National Advisory Committee	DDG-NCD & D-NCCP		x	x	x	x
Strategic Direction 1.4	**Involvement of people living with cancer, their families and care givers**						
1.4.1. Engage people living with cancer, their families and care givers are members of Provincial/district teams	Ensure people living with cancer, their families and care givers are involved in planning, implementation and monitoring and evaluation of interventions	DDG-NCD & D- NCCP		x	x	x	x
	Establish/strengthen public-private partnership		x	x			

Strategic Objective 2: Primordial & primary prevention of cancers by addressing risk factors and determinants throughout the life-cycle

Strategy 2 – Health Promotion & primary prevention

Strategic Direction 2.1	**Community education & empowerment that supports and influence adoption of healthy lifestyles across the life-cycle to reduce the incidence of cancer among different target groups**						
2.1.1 Develop and implement a Social Behavior Change Communication (SBCC) strategy related to prevention & control of cancer through the life-course approach for general population and different target groups	Develop a SBCC strategy with multi-sectoral participation after conducting a landscape analysis related to cancer. Then formulate the objectives, strategies, interventions, outcomes and impact, modes of communications, target audiences	DDG-NCD, D-NCCP		x			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
	Develop /revise cancer specific IEC material (posters, social media apps etc)	D- NCCP, D- HPB, Support groups		x	x		
	Develop an Implementation Plan of SBCC strategy with a M&E Plan	D- NCCP		x	x		
Strategic Direction 2.2.	**Integrating cancer prevention and control interventions in health promoting settings such as schools, youth settings, workplaces, hospitals, estates and villages**						
2.2.1.Advocate to integrate messages on risk factors for cancer in school health promoting settings	Ensure SBCC strategy address school HP setting which includes risk factors, prevention and access and availability of services for common cancers	MoE, DDG-NCD, DDG-DS, D-NCD-Unit, D-FHB, D-HPB, NATA, D-NCCP		x			
	Influence to include prevention and control of cancer in school curricula and teacher training programmes	NIE, DDG-NCD, D-NCD, D-NCCP		x	x		
	Advocate to include a question related to cancer prevention at school/public examinations	MoE, NIE		x	x		
2.2.2. Support establishing health promoting setting in universities, training colleges and VTCs, workplaces (especially industries which have an influence on environment risk factors) , estates and villages to be used as a platform to include interventions for reduction of cancer related risk factors	Include prevention and control of cancer in health related packages of these HP settings	D-NCCP, D-NCD, D-U&E, PHDT, D-FHB, D-HPB, UGC, Ministry of VT, NAITA		x	x		
				x	x		
	Ensure SBCC strategy address these HP settings	D-NCCP, D-HPB		x			
	Ensure IEC material are available on cancer related risk factors, healthy life styles, signs and symptoms of common cancers, myths and misconceptions, accessibility and availability of services	D-NCCP, D- HPB		x	x		
Strategic Direction 2.3	**Reducing the prevalence of current use of tobacco/tobacco products in persons aged over 15 years and protecting non-smokers from exposure to tobacco by products by community education and enforcement of regulations and legislation**						
2.3.1.Support implementation of Sri Lanka National Policy on Tobacco Control and NATA Act	Conduct advocacy to sustain on-going interventions in the FCTC and MPOWER package	NATA, DDG-NCD, D-NCCP	x	x			
	Advocate to amend the NATA Act (introduce policies on 100% smoke free outdoor environments, smokeless tobacco use, surveillance to prevent importation of e-cigarettes, stop single stick sales)		x	x			

	Advocate to raise tobacco taxes		x	x			
	Advocate to establish a mechanism at NATA to monitor progress of regulations and legislations on tobacco and alcohol			x			
2.3.2.Provide messages on the association between tobacco use and cancers to be used on tobacco cessation clinics	Advocate to establish Tobacco Cessation Clinics (TCC) with counseling services especially in hospitals with Oral & Maxillofacial units which are 1st line treatment centers for OPMD and oral cancers	DDG-MS, DDG-DS, D-NCCP, D-NCD, NATA	x	x			
	Include prevention and control of common cancers in TCC training modules and build capacity of TCC staff to address prevention and control of cancer			x	x		
2.3.3. Create community awareness on the association of cancer and use of tobacco and by products and second-hand smoke using all modes of communication	Include specific strategies in the SBCC strategy to warn and educate public and high risk groups on harm of tobacco and tobacco by product /smokeless tobacco use and second hand smoke and legal milieu	NATA, D-NCCP, D-HPB, D-NCD		x			
	Organize activities for World No Tobacco Day in all established HP settings	NATA, D-NCCP, D-HPB, D-NCD		x	x	x	x
Strategic Direction 2.4	**Reduce areca-nut use in persons aged over 15 years as a measure to reduce oral cancer**						
2.4.1.Introduce preventive policies, regulations on importation of areca-nut to Sri Lanka as measure to protect people from cancer	NAC to formulate policies including legislations controlling chewable areca-nut products	DDG-NCD, DDG-DS, D-NCCP, Ministry of Justice, MoH-Legal division, Ministry of Trade, Customs Dept		x	x		
	Submit policy paper for Cabinet approval			x	x		
2.4.2.Create community awareness on health hazards of areca-nut use & legal milieu	SBCC strategy to address target groups and develop target specific IEC messages	D-NCCP, D-HPB		x			
Strategic Direction 2.5	**Reduce alcohol consumption and prevent exposure of children to alcohol**						
2.5.1.Promote implementation of Sri Lanka Policy on Alcohol Control and NATA Act	Conduct advocacy meetings for political leadership and policy makers to support implementation of Alcohol policy and NATA ACT as a strategy to prevention and control of cancer	NATA, DDG-NCD, D-NCD, D-Mental Health, D-NCCP,		x			
2.5.2.Create community awareness on social and health issues of alcohol use	Include specific interventions in the SBCC Strategy to target adolescents, young adults and men and women on reducing alcohol use as a measure of prevention and control of cancer	NATA, D-NCCP, D-HPB, D-Mental Health		x			
	Develop target specific IEC material on alcohol and social and health issues of cancer	D-NCCP, D-HPB, NATA		x			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
2.5.3. School Health Promotion program to address alcohol related social and health issues	Influence to introduce the social and health hazards of alcohol use in teacher training modules	MoE, DDG-NCD, D-NCD, D-FHB, D-NCCP		x			
Strategic Direction 2.6	**Increase use of healthy diets among adults and children**						
2.6.1.Ensure policies and guidelines highlight the association of unhealthy food and beverages with development of cancer	Advocate for the implementation of National Nutrition Policy, Guidelines for healthy foods, National Salt Reduction Strategy, National Agriculture Policy, Food Act, school and workplace canteen policy	DDG-PHS, DDG-NCD, MoE, Ministry of Agriculture, D-NCCP, Ministry of Labour		x			
	Support the enforcement of regulations and legislation to control and or ban on advertising of unhealthy foods high in salt and sugar and non- alcoholic sugar sweetened beverages and to eliminate industrially produced trans-fat	DDG-NCD, D-NCCP		x	x	x	x
	Support establishment of a mechanism to monitor implementation of legislation on unhealthy foods and beverages (especially FOP labeling, sugar tax, marketing of unhealthy foods and beverages for children)	DDG-NCD, D-NCCP		x	x		
	Advocate to grow fresh, chemicals and toxins free vegetables and fruits by farmers, schools and homes	MoE, D-NCCP, D-HPB, Ministry of Agriculture		x	x	x	x
2.6.2. Ensure SBCC strategy address healthy diets (the need to consume and promote production of organic food free of chemicals and additives) FOP labeling as given in Food Act	Identify IEC material and channels of communication	MoE, D-HPB, D- NCCP, Ministry of Media		x			
2.6.3. Ensure monitoring of safety of foods	Advocate to include sampling of food items for carcinogens in the Food Safety Laboratories	D-E&OH, D- MRI, D- NCCP		x	x		
2.6.4. Promote Breast Feeding Policy	Include in the SBCC interventions to promote breast feeding as a measure to prevent breast cancer, childhood leukemia	D-NCCP, D- MCH, D-HPB		x			
Strategic Direction 2.7	**Reduction of insufficient physical inactivity**						
2.7.1. Enhance public awareness of the links between overweight, obesity and cancer recognizing that physical inactivity is a risk factor for cancer	SBCC strategy to address physical inactivity as a risk factor for cancer	DDG-NCD, D-NCCP, D-HPB, D-NCD, Ministry of Sports		x			

	Support development and implementation of legislation for establishment of environments supportive for physical activity	DDG-NCD, D-NCCP, Ministry of Sports, CEA		x	x		
	Advocate to introduce exercise prescription programs for recommended people attending health promotion settings	D-NCCP, Ministry of Sports		x	x		
Strategic Direction 2.8.	**Reduce the incidence of cancer by reducing exposure to infectious agents**						
2.8.1.Include promotion of healthy sexual and reproductive behaviors and the need of HPV vaccination in the SBCC strategy	Develop specific strategies to reach populations most at risk of developing sexually transmitted infections in the SBCC strategy	D-NCCP, D-HPB, D-NSACP		x			
	Identify strategies in the SBCC to promote healthy sexual and reproductive behavior along the life course	D-NCCP, D-HPB, D-NSACP		x			
	Develop tailored culturally sensitive messages to high risk groups	D-NCCP, D-HPB, D-NSACP		x			
2.8.2. Ensure sustainability of HPV vaccination program	Develop liaisons with Epidemiology unit to share updated evidence on HPV and cancer cervix	D-NCCP, Epidemiology unit, D-FHB		x	x	x	x
	Develop tailored messages in the SBCC strategy on the need of HPV vaccination to parents	D-NCCP, D-HPB		x			
2.8.3.Advocate for sustainability of HBV vaccination among public sector healthcare workers and private sector healthcare workers	Ensure all at risk categories are given HBV vaccination in government healthcare settings and followed up to determine sero-conversion	DDG-MS, Epidemiology unit, D-NCCP, D-Healthcare quality and safety, MRI, D- NCCP		x	x	x	x
	Include HBV vaccination coverage as a quality indicator of the health institution	DDG-MS, D-NCCP, D-Healthcare quality and safety		x	x	x	x
	Include HBV in SBCC strategy	D-NCCP, D-HPB		x			
Strategic Direction 2.9	**To reduce the incidence of cancers by reducing exposure to environmental and occupational risk factors**						
2.9.1. Integrate cancer prevention and control measures into existing occupational safety and health policies to create healthier and safer workplaces	Ensure NCCP representation at the NAC-E&OH	DDG-NCD, DDG-E&OH		x			
	Convene a TWG to identify carcinogenic environment toxins and map Industries emitting toxins to environment (air and water) and disseminate information through the SBCC strategy	DDG-NCD, D-NCCP, D-E&OH, NIOSH		x	x		
	Monitor actions taken by industries to reduce air pollution	DDG-NCD, D-NCCP, D-E&OH, District committees		x	x	x	x
	Lobby to appoint safety officers to high risk industries	D-E&OH, D-NCCP, NIOSH, Ministry of Labour		x			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
2.9.2. Promote development of a policy to reduce indoor and outdoor air pollution	Conduct advocacy meeting with stakeholders e,g E&OH	DDG-NCD, D-NCCP, D-E&OH, CEA, Ministry of Power and Energy		x	x		
2.9.3. Include messages to reduce indoor air pollution (switch from using solid fuels in home cooking) in to the SBCC strategy as a measure to reduce the incidence of cancer	Develop evidence based targeted messages highlighting the association between indoor air pollution and cancer in the SBCC strategy	D-NCCP, D-HPB		x			
	Collect data via STEPS survey	DDG-NCD, D-NCD, D-NCCP		x			
	Support development of air quality guidelines	D- NCCP,D-NCD, D-E&OH,CMC		X	X	X	X
	Support CMC and CEA to monitor air quality index (AQI) in Colombo and suburbs						
2.9.4. Promote the implementation of "Sustainable environment Policy" and legislations to safe disposal of toxic wastes such as industrial, laboratory, nuclear, cytotoxic waste which pollute the air we breathe, the water we drink and the soil used to cultivate our food.	Influence to develop a policy for toxic waste management as a strategy to prevent and control cancer and submit to CEA	DDG-NCD, DDG-E&OH, D-NCCP		x	x	x	x
	Develop strategies in the SBCC strategy to educate general public on reduction of outdoor air pollution as a measure to reduce cancers	DDG-NCD, D-NCCP, D-HPB		x			
2.9.5. Promote establishment of periodic screening and monitoring of individuals exposed to occupational hazards that cause cancer	Map institutions by district level which expose individuals to occupational hazards that cause cancer	DDG-NCD, D-NCCP, National Atomic Energy Authority, District cancer committees		x	x		
	Conduct advocacy meetings to introduce screening of workers			x	x		
2.9.6. Support the implementation of regulations issued by the CEA regarding open burning of refuse or other combustible matters inclusive of plastics.	Include specific messages in the SBCC strategy to educate people on the hazards of open burning of plastics, polythene etc	D-NCCP, D-HPB, D- E&OH, CEA		x	x		

Strategic Objective 3: Advocate for screening and early diagnosis through improved health literacy, availability of services for timely diagnosis of cancers and linking to ensure early treatment and care.

Strategy 3: Early detection of cancers

Strategic direction 3.1	**Increase knowledge of general public, including high risk populations and individuals on cancer, accessibility and availability of services to increase utilization of services**						
3.1.1.Include early detection of cancer strategies in the SBCC strategy to Empower women (>20 years) on SBE/Be Breast aware	Conduct advocacy to integrate early detection of breast cancer interventions to health programs such as the Maternal & Child Health, Urban and Estate Health, Non-Communicable diseases	DDG-NCD, D-NCCP, D-MCH, D-NCD unit, D-U&EH	X	X			
	Conduct advocacy to integrate early detection of breast cancer interventions in Health Promoting Settings of universities, vocational training centers (VTC), workplaces, estates, villages	DDG-NCD, UGC, VTC, D-HPB, D-NCCP, Chamber of Commerce, D-U&EH		X			
	Develop target group specific IEC material on advantages of screening as a strategy for early detection of breast cancers, signs and symptoms, Self breast examination and service availability	D-HPB & D-NCCP, support groups		X			
	Develop specific IEC materials targeting young men and women on the importance of early detection of breast cancer and available services to be used in Health Promoting Settings (schools, universities, VTC, workplaces)	D-HPB & D-NCCP, support groups		X			
3.1.2. Empowerment of risk groups at a higher risk of oral cancer (users of tobacco, areca-nut, alcohol) on self-mouth examination	Identify groups at high risk and vulnerable to oral cancer	D-HPB & D-NCCP	X				
	Conduct advocacy to integrate early detection of oral cancer interventions to health programs such as the Maternal & Child Health, Urban and Estate Health, Non-Communicable diseases	DDG-NCD, DDG-DS, D-NCD, D-NCCP, D-MCH, D-U&EH		X			
	Conduct advocacy to integrate early detection of oral cancer interventions in Health Promoting Settings of universities, vocational training centers (VTC), workplaces	D-NCCP, DDG-NCD, DDG-DS, D-U&EH, UGC, Ministry of vocational training centers		X			
	Develop target group specific IEC material on advantages of screening as a strategy for early diagnosis of oral cancers, signs and symptoms, myths and misconceptions and service availability	D-NCCP, D-HPB		X			
3.1.3. Integrate messages on screening and early diagnosis of breast, cervical and oral cancer to existing community support groups	Identify existing support groups	D-NCCP, D-HPB	X				
	Integrate targeted messages into existing support group programs	D-NCCP, D-HPB, D-MCH		X			
Strategic direction 3.2	**Strengthen primary healthcare services for early detection of common cancers and link to CoE and other treatment centers at secondary and tertiary level as appropriate**						

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
3.2.1. Strengthen primary health services for screening and early diagnosis of breast cancer and link to higher centers	Advocate to increase WWC to 1 per 15,000 population as given in the National Strategic Plan for Well Woman Clinics	DDG-PHS, D-NCCP, D-MCH		X			
	Update and print guidelines/ desk or wall charts on Self-examination of breast and referral pathways	DDG-NCD, D-NCCP		X			
	Capacity building of PHC physicians, HLC doctors and nurses on CBE & SBE for early detect ion of breast cancer & counselling	DDIG-NCD, D- NCCP, D-MCH		X			
	Capacity building of Family Health Workers on CBE & SBE for early detection of breast cancer	DDG-NCD, D-NCCP, D-MCH		X			
	Train medical officers and nurses in Breast Clinics on counselling			X			
3.2.2 Strengthen primary health services for screening and early diagnosis of oral cavity cancers and link to higher centers	Update and print guidelines on OPMD for dental and medical practitioners, Ayurveda undergraduates on early detection of oral cancers with referral pathways	D-NCCP			X		
	Capacity building of Dental and medical practitioners for OPMD screening and counselling	D-NCCP		X	X	X	X
	Strengthen active screening of OPMD/Oral cancer for inaccessible and marginalized risk groups	DDG-DS, DDG-MS, DDG-LS, D-NCCP		X	X	X	X
	Ensure required facilities and resources for screening and early diagnosis of OPMD and oral cancer	DDG-DS, DDG-MS, DDG-LS		X	X	X	X
	Develop an e-reporting system to link oral cancer screening activities to treatment centers	D-Info, D-NCCP, R&S Unit-IOH		X	X		
3.2.3. Strengthen primary health services for screening and early diagnosis of cervical cancer and link to higher centers	Map the current colposcopy clinics and their catchment areas to facilitate referrals from primary health services to ensure pre-cancerous lesions are managed	D-NCCP, D-MCH		X			
	Conduct capacity assessment with the view of establishing one colposcopy clinic in each district	D-NCCP, D-MCH		X			
	Identify HR/equipment and infrastructure requirement for colposcopy clinics	D-NCCP, D-MCH		X			
	Map the histopathology labs to which the colposcopy clinics will send biopsy specimens	DDG-MS, DDG-LS, D-NCCP, D-MCH		X	X	X	X

	Conduct a capacity assessment of the laboratories including HR, equipment and infrastructure requirement	DDG-LS, D-NCCP, D-MCH	X	X			
	Develop SOPs for histopathology laboratories receiving specimens from colposcopy clinics	DDG-LS, D-NCCP		X			
	Develop communication mechanism between colposcopy clinic and histopathology laboratories and treatment centers to minimize client visits	DDG-MS,DDG-LS, D-NCCP, D-MCH		X			
3.2.4. Establishing Quality Assurance (QA) approaches in clinics and laboratories for screening and early diagnosis of cancer	Introduce QC and QA system in histopathology laboratories receiving specimens from treatment centers including colposcopy clinics	D- Healthcare Quality and safety, D-NCCP		X	X		
3.2.5.Promote develop a National Plan for prevention and management of Breast cancer	Conduct consultative workshops to develop a plan with indicators for M&E and distribute the plan to all stakeholders	DDG-DS, DDG-MS, D-NCCP		X	X		
3.2.5. Develop a National Plan for prevention and management of oral cancer	Conduct consultative workshops to develop a plan with indicators for M&E and distribute the plan to all stakeholders	DDG-DS, DDG-MS, D-NCCP		X	X		
Strategic Directions 3.3	**Increase opportunities for early detection of cancer**						
3.3.1.Establish one stop Cancer Early Detection Center (CEDC) in each Province	Conduct Advocacy meetings	DGHS, DDG-MS, DDG-NCD, DDG-LS, DDG-DS, D-NCCP, PDHS, RDHS, Hospital Directors, NGO		X	X		
3.3.2.Provide quality care at CEDC	Ensure screening facilities (infrastructure and medical devices) and staff are available in CEDC for early detection of cancer breast, cervix and oral cancer	DDG-MS, DDG-LS, DDG-DS, D-NCCP		X	X	X	X
	Monitor the use of referral, back-referral pathways are being followed as given in the updated guideline	D-NCCP		X	X	X	X
Strategic Direction 3.4	**Ensure cancer patients have access to timely and accurate diagnosis and linked to treatment & care**						
3.4.1. Ensure all treatment centers are able to confirm suspected cases of breast, oral and cervical cancer and managed	Develop guidelines for diagnosis and management of breast, cervical and oral pre-cancerous lesions	DDG-MS, DDG-NCD, DDG-DS, D-NCCP		X			
	Provide mammogram facilities in treatment centers to confirm diagnosis of breast cancer	DDG-MS, DDG-LS, D-NCCP	X	X			
	Provide biopsy facilities to confirm breast cancer at treatment centers	DDG-MS, DDG-LS, D-NCCP		X			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
	Provide medical diagnostic facilities and devices required for confirmation of oral cancer at treatment centers	DDG-MS, DDG-LS, DDG-DS, D-NCCP		X			
	Establish clinical standards and procedures for colposcopy & SOPs to diagnose cervical pre-cancerous lesions	DDG-MS, DDG-NCD, D-NCCP		X			
	Map the histopathology labs to which the treatment centers including colposcopy clinics will send biopsy specimens	DDG-MS, DDG-LS, DDG-DS, D-NCCP		X			
	Develop SOPs for histopathology laboratories receiving specimens from colposcopy clinics and specimens for oral and breast cancer	DDG-MS, DDG-LS, D-NCCP		X	X		
	Conduct a capacity assessment of the laboratories including HR, equipment and infrastructure requirement	DDG-MS,DDG-LS, DDG-DS, D-NCCP		X			
	Develop communication mechanism between colposcopy clinics, treatment centers, dental clinics where biopsies for breast, cervical and oral cancer is done and histopathology laboratories to minimize client visits	DDG-NCD, DDG-LS, D-NCCP		X	X		
	Develop a training programme in colposcopy leading to certification	DDG-NCD, DDG-LS, D-NCCP		X	X	X	
	Provide basic and advanced colposcopy training	DDG-ET&R, DDG-LS, D-NCCP			X	X	
	Document follow up procedure	DDG-MS, D-NCCP		X			
	Ensure all pre-cancerous lesions are referred to treatment centers	DDG-MS, D-NCCP	X	X	X	X	X
3.4.2.. Develop partnerships with STD/HIV clinics to refer suspect cases of cancer cervix / abnormal pap smear cases to CoE	Conduct Advocacy meetings to refer samples/suspected cases and provide relevant data	D-NCCP, D-NSACP	X	X			
Strategic Direction 3.5	**Building public/private partnerships for screening and early diagnosis of cancers to increase coverage**						
3.5.1.Advocacy to provide screening (breast, cervix, oral) in the private sector hospitals/ clinics	Advocacy meetings with private sector hospitals and private practitioners annually	DDG-NCD, DDG-DS, D-NCCP & Private Hospital Directorate	X	X			
	Share guidelines prepared by NCCP		X	X			

Strategic Objective 4 - Ensure sustained and equitable access to diagnosis and treatment services for cancers.

Strategy 4 – Diagnostics, treatment and care

Strategic Direction 4.1	**Increase accessibility and availability of diagnosis and comprehensive treatment & care by upgrading National Cancer Care institution (Apeksha Hospital) and establishment of centers of excellence in each province which networks with treatment and care centers in other secondary and tertiary level hospitals**						
4.1.1.National Cancer Care center (Apeksha Hospital) to be up-graded as a State-of-the –Art epi-center to provide comprehensive cancer care to adults and children	Conduct a needs assessment in diagnostics, infrastructure and human resources to strengthen health services for diagnosis and treatment and care& submit a costed Plan to MoH	DDG-MS, DDG-Logistics, Director Apeksha Hospital, D-NCCP	X	X			
				X			
	TAC to monitor progress in provision of resources to provide continuum of care and report to NAC			X	X	X	
4.1.2.Establish a Center of Excellence (CoE) in cancer care in each Province for adults and children	Develop minimum standards for each CoE for medical oncology/surgical oncology/ laboratory/ Pathology/ Radiology / Radiotherapy/ gyne-oncology	DDG-MS, DDG-LS, DDG-DS, Director Tertiary care Hospitals, PDHS, RDHS, D-NCCP	X	X			
	Develop a scale up plan to establish/strengthen 9 CoEs for continuum of care after a gap analysis			X	X		
	CoE to conduct out-reach clinics according to a plan to cover all the districts in each province			X	X	X	X
4.1.3.Strengthen other cancer centers to provide cancer treatment and care and network with CoE	Conduct a situation Analysis and a Needs Assessment to upgrade the selected provincial cancer treatment centers to CoE level in a phased out manner and submit a scale up plan to MoH	DDG-MS, DDG-LS, DDG-DS, Director Tertiary care Hospital, PDHS, RDHS, Directors of respective hospitals, D-NCCP	X	X			
	Develop minimum standards for other cancer treatment centers and hospital surgical units			X			
	Develop a networking system with CoE as per the identified referral-back referral system		X	X			
	Map other hospitals conducting cancer surgery and conduct a needs assessment to uplift services	DDG-MS, DDG-NCD, D-NCCP		X			
4.1.4. Develop guidelines for diagnostics, treatment and care for common cancers including reconstruction procedures	Develop service stratified guidelines for diagnostics and treatment and care	Treatment and care subcommittee		X			
4.1.5. Develop HR Plans for all treatment centers for (relevant) categories of staff	Each treatment center to submit HR Plans to MoH	DDG-MS, DDG-LS, DDG-DS, DDG-Logistics, DDG-NCD, D-NCCP	X	X			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
4.1.6. Establish multidisciplinary teams for all CoE	Identify multidisciplinary teams and develop TOR & a training plan identifying local and international training needs	DDG-MS, DDG-DS, DDG-LS, DDG-NCD, D-NCCP	X	X X			
	Conduct local training workshops & develop linkages with international training centers for physical, webinar and other distant learning			X	X	X	X
4.1.7.Scale up day chemotherapy treatment units (dedicated day hospitals) with dedicated staff	Develop operational guidelines including M&E	DDG-MS, DDG-NCD, D-NCCP	X	X			
4.1.8..Ensure quality of cancer care for adults and children in all treatment centers	Develop quality assurance measures for each health service level	Director Healthcare Quality & Safety, Hospital Directors, D-NCCP	X	X			
	Conduct regular clinical audits			X	X	X	X
	Conduct monthly Mortality and Morbidity (M&M) meetings		X	X	X	X	X
	Introduce a confidential patient satisfaction feed- back mechanism at each treatment center			X	X	X	X
4.1.9. Establish four technical sub-committees for Radiation safety, Laboratory and diagnostic pathology, diagnostic radiology, and treatment and care under the Technical Advisory Committee (TAC) of diagnosis and treatment	Develop TORs	Chairperson TAC-DDG-MS-1 and DDG- LS, D-NCCP	X				
	Conduct regular quarterly meetings and submit recommendations to TAC to be presented to NAC		X	X	X	X	X
4.1.10.Establish multidisciplinary tumor review Boards for diagnosis, treatment and rehabilitation in each province	Develop TOR	DDG-MS, PDHS, RDHS, D-NCCP	X				
	Develop networks to cover all treatment centers			X	X	X	X
4.1.11. Develop a National Essential Oncology Medicine Drug list for common adult and childhood cancers	Strengthen Drug evaluation subcommittee for oncological drugs to update the list regularly, prepare annual estimates for national level procurement	DDG-MSD, NMRA, Directors of treatment centers, D- NCCP	X	X	X	X	X
	Disseminate list to all treatment centers and central and regional MSDs			X	X	X	X
	Link the treatment centers & hospitals providing cancer care pharmacies to central and regional MSD and NCCP e-MIS				X	X	X
	Upload the MoH and NCCP website with latest essential oncology Medicine drug lists			X	X	X	X

4.1.12. Include cancer diagnostics, pharmaceuticals and other commodities in the Procurement Supply Management (PSM) system	Develop a PSM Plan inclusive of equipment, pharmaceutical medicines and other non-pharmaceutical commodities	DDG-MSD, DDG-Logistics, D-Information, D- NCCP	X	X			
	Link PSM Chain of the Central and Regional Medical Supplies Division (MSD) and e-MIS of NCCP			X	X	X	X
	Monitor frequency of stock out situations and report to NAC			X	X	X	X
4.1.13. Build public-private partnership for diagnosis and treatment with appropriate referral mechanism	Share national guidelines	D-NCCP, D-Private hospitals	X	X	X	X	X
	Include private sector in Professional Development Programs						
Strategic Direction 4.2	**Increase accessibility and availability of diagnostics (laboratory and pathology, medical imaging) for cancer care**						
SDD 4.2.1.Provision of medical devices for basic diagnostic radiology to all CoEs and other centers							
4.2.1.1. Establish general X-ray systems	Influence to improve general X-ray system in hospitals providing cancer care	DDG-LS, DDG- Logistics, Sub-committee on Radiology, D-NCCP	X	X			
4.2.1.2. Establish Digital X-ray systems	Develop a costed package of devices necessary to establish digital X-ray system in hospitals providing cancer care (inclusive of Awissawela-DGH, Chilaw-DGH, Trincomalee-DGH and Vavuniya-DGH as given in the gap analysis)	DDG- Logistics, DDG-LS, Sub-committee on Radiology	X	X			
4.2.1.3. Improve Ultra Sound Scanning	Conduct a situation analysis to ensure ultra sound facilities are available in all hospitals conducting cancer care to diagnose breast, oral and cervical cancer (through trans-vaginal) and submit a costed plan to MOH	DDG-MS, D-NCCP		X	X		
4.2.1.4. Increase the number of endoscopic facilities (for diagnosis and non-invasive procedures)	Conduct a needs assessment to establish digital endoscopy (upper and lower gastro-intestinal, genito-urinary) facilities in hospitals providing cancer care and submit a costed plan to MOH	DDG-MS, DDG-LS, DDG-Logistics, Sub-committee on Radiology, D-NCCP	X	X	X		
4.2.1.5. Establish QA systems for radiology diagnostics	Collaborate with International experts to include QA systems	D-Quality Health & safety, D-NCCP		X	X	X	X
SDD 4.2.2. Strengthen/establish diagnostics for nuclear medical imaging at all CoEs							
4.2.2.1. Strengthen CT scan facilities at all treatment centers	Monitor regularly to ensure functioning of CT scans in all treatment centers	DDG-MS, Sub-committee on diagnostics (SC-D), D-NCCP	X	X	X	X	X

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
4.2.2.2. Strengthen MRI scan facilities at all CoEs	Conduct a gap analysis and map CoEs in need of MRI and submit a costed plan to MOH	DDG-MS, SC-D, D-NCCP	X	X			
	Monitor regularly to ensure functioning of MRI scans in all treatment centers			X	X	X	X
4.2.2.3.. Provide PET, PET /CT scanner facilities to Apeksha	Identify a package of devices, infrastructure and human resources required to provide PET, PET/CT facilities	DDG-MS, SC-D, D-NCCP		X			
	Establish infrastructure and human resources to commence functioning at Apeksha			X			
4.2.2.4. Provide PET scanning facilities to other CoEs in a phased out manner	Conduct a needs assessment to establish services in other CoEs in a phased manner & submit a costed plan to MoH	DDG-MS, SC-D, D-NCCP		X			
4.2.2.5. Install Gallium 68 generator to start PET scan	Prepare a proposal with specifications and submit a costed plan to MoH	DDG-MS, SC-D, D-NCCP	X	X			
4.2.2.6. Provide CT simulators to all CoEs –	Conduct a gap analysis and submit a costed plan to MoH	DDG-MS, SC-D, D-NCCP	X				
4.2.2.7. Scale up use of Gamma Camera facilities	Conduct a feasibility study to increase facilities from Apeksha to Selected CoEs	DDG-MS, SC-D, D-NCCP		X			
SDD 4.2.3.Ensure Laboratory diagnostic services are available at CoEs							
4.2.3.1. Strengthen general laboratory diagnosis of cancer at all treatment centers	Identify a package of basic laboratory tests with required medical devices, which are necessary to support treatment pathways	DDG-MS, DDG-LS	X				
	Ensure all treatment centers have the basic package of tests			X	X		
4.2.3.2. Establish blood chemistry testing (liver function tests, renal function tests, alkaline phosphate and calcium) at CoEs	Develop medical devices packages for bio-chemistry testing	DDG-MS, DDG-LS		X	X		
4.2.3.3. Establish Tumour Lysis Syndrome testing (lactate dehydrogenase, uric acid, potassium, calcium, phosphate), at CoEs	Develop medical devices packages for Tumour Lysis Syndrome testing	DDG-MS, DDG-LS		X	X		
4.2.3.4. Provide Complete Blood Count with differentials and other hematological tests to all CoEs	Ensure CBC/DC and other hematological tests are available	DDG-MS, DDG-LS		X	X		

4.2.3.5. Establish Disseminated Intra-vascular coagulation panel to all CoEs	Develop medical devices packages for DIC testing	DDG-MS, DDG-LS		X	X		
SDD 4.2.4.Ensure pathology diagnostic services are available at CoEs							
4.2.4.1. Establish flow cytometry facilities for CoE	Establish hematology flow cytometry facilities at all CoEs in a phased manner	DDG-MS, DDG-LS	X	X	X	X	X
	Establish tissue flow cytometry at Apeksha after a needs assessment			X			
4.2.4.2.Ensure Immuno-Histo-chemistry (IHC) facilities are available in CoE	Identify the specific antigens needed	DDG-MS, DDG-LS		X			
	Develop a SUP based on infrastructure and HR to establish IHC in all CoEs and submit to MOH			X			
4.2.4.3.Establish Molecular genetic testing with DNA sequencing at Apeksha and a Molecular Laboratory at Karapitiya-TH	Identify genetic markers and molecular tests and the package of equipment/infrastructure/human resources to provide services	NAC, Sub-committee on Pathology, DDG-MS, DDG-LS		X			
	Develop a training plan for capacity building of consultants and lab technicians and other staff			X			
	Conduct local and international training			X	X		
	Ensure availability of molecular and genetic testing			X	X		
4.2.4.4. Establish Tumour marker testing at all CoEs	Pathology sub-committee to Identify tumour markers and equipment/infrastructure/human resources to provide services	DDG-MS, DDG-LS		X			
	Develop a training plan to enhance capacity building of consultants and lab technicians and other staff with international and local training			X			
4.2.4.5.Strengthen /establish medical devices for sentinel node mapping prior to surgical intervention	Identify package of medical devices required for surgical mapping and biopsy and submit a costed plan to MoH	DDG-MS, DDG-LS, D-NCCP	X				
Strategic Direction 4.3	**Increase accessibility and availability of comprehensive high quality cancer treatment and care facilities for continuum of care**						
SDD. 4.3.1.Strengthen Nuclear Medicine (Radiation therapy) services at CoEs							
4.3.1.1. Provide External Beam Radiation therapy by installing triple energy Linear Accelerators (LINAC)	Install and commission LINAC machine at Kandy –NH (Phase-1-hospitals)	Additional secretary MS, DDG-MS1,DDG-MSD, DDG-NCD,	X				

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
	Commission the three (03) LINAc at Apeksha and maintain the 2 functioning machines (Phase 1 hospitals)	Sri Lanka Atomic Energy Board, D-NCCP, Respective Hospital Directors		X			
	Monitor to ensure maximum usage of the three (3) LINAC machines at Karapitiya/Jaffna/Batticaloa			X	X		
	Procure triple energy LINAC machines with accessories to establish radiotherapy facilities at Anuradhapura-TH/Ratnapura-TH/Kurunegala-TH /Badulla PGH/ Hambantota DGH (Phase 2 hospitals) after identifying specifications by an expert committee			X	X	X	
	Install CT simulators as required			X	X	X	
	Install lead doors to all LINAC centers			X	X		
	Develop a plan to repatriate/store non-functioning radio-active sources			X			
4.3.1.2. Expand HDR brachytherapy (Internal Radiation Therapy) from currently available 2 centers to all other/ selected CoE	Strengthen BT facilities at Apeksha and Kandy-NH to improve head & neck, bronchial, breast, cervical and endometrial cancer management	DDG-MS, DDG-NCD, DDG-LS, D-NCCP, Hospital Directors		X			
	Develop a service package of equipment, infrastructure, human resources to establish brachytherapy in other treatment centers		X				
	Develop a scale up plan to establish BT based on disease burden, availability of infrastructure and human resources		X	X			
4.3.1.3. Increase Radioactive-iodine (RAI) treatment to all CoEs	Strengthen RAI facilities at the currently providing 06 CoE	DDG-MS, DDG-LS, DDG-NCD, SLAEB, CEA, D-NCCP, Respective PDHS, RDHS, Hospital Directors	X	X			
	Submit proposals to establish RAI facilities at (Ratnapura-TH, Anuradhapura-TH, Batticaloa-TH)			X	X	X	
	Provide Radio-Active isolation ward facilities at Apeksha Hospital			X			
	Provide isolation rooms for functioning RI centers at Kandy-TH and Jaffna-TH,			X	X		
	Develop a service package of equipment (machine and accessories), infrastructure (e.g. isolation rooms), human resources to establish RAI treatment facilities in other treatment centers			X	X		

4.3.1.4.Establish a central Radio-Pharmacy (Nuclear Pharmacy)	Identify infrastructure, equipment, resources, training needs for a Nuclear Pharmacy	DGHS, DDG-NCD, SLAEB, CEA, D-NCCP	X	X			
	Ensure Nuclear pharmacist and other staff are appointed to function the Nuclear Pharmacy			X			
	Develop a training program for Nuclear-pharmacists		X	X	X	X	
	Ensure Radiopharmaceuticals needed for the country are manufactured		X	X	X	X	X
4.3.1.5. Establish Cyclotron facility for production of radiopharmaceuticals /isotopes for radiation therapy in the Nuclear Pharmacy	Develop specifications for identified radiopharmaceuticals/ isotopes and submit proposal to MoH for funding	DDG-MS, DDG-NCD, D-NCCP, SLAEB, CEA, TAC for diagnostics and treatment and care	X	X			
	Monitor availability of cyclotron facility and production of radiopharmaceuticals						
4.3.1.6.Ensure HR are available to provide radiation therapy at all CoEs	Map the human resources needed for RT (radiation oncologists, nuclear pharmacists, physicists, radiographers, medical engineers) and include in the National Cancer Care HR Plan	DDG-MS, D-ET&R, DDG-NCD, Sri Lanka School of Radiography, D-NCCP	X	X			
4.3.1.7. Develop a Strategic Plan for Radiotherapy	Conduct consultative meetings to develop a comprehensive strategic plan to enhance RT services	Radiation oncology sub-committee TAC					
SDD. 4.3.2.Strengthen onco-surgery services							
4.3.2.1.Strengthen specialized services at CoEs	Each CoE to identify the number of wards, in-patient beds, surgical theatre times required at each CoE and submit plans to MoH	Onco-surgeons, Hospital Directors, PDHS, RDHS, Provincial MO-Planning		X			
	Introduce Radioactive probe for sentinel node biopsy (Geiger probe) in a phased manner to CoEs	DDG-MS, DDG-NCD, D-NCCP, SAEB,		X	X	X	
	Conduct a gap analysis to strengthen/scale up endoscopy facilities at all CoEs	D-NCCP		X			
	Conduct a gap analysis to strengthen/Scale up laparoscopic facilities for cancer care	DDG-MS, D-NCCP		X			
	Conduct a feasibility study to establish micro-vascular surgery facilities are available at Apeksha, TH- Kandy, TH-Peradeniya, TH-karapitiya, Jaffna ,	DDG-MS, D-NCCP		X	X		
	Develop a Plan to introduce Robotic surgery at Apeksha hospital, Kandy NH and TH-Karapitiya	DDG-MS, DDG-LS, DDG-NCD, DDG-Logistics, D-NCCP					X
SDD. 4.3.3. Strengthen onco-gynecology services to all CoEs	**Ensure treatment of cervical pre-cancer lesions is available in all treatment centers**						

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
4.3.3.1. Increase access to specialist services	Ensure treatment of invasive cancers is available at treatment centers	DDG-MS, DDG-NCD, D-NCCP	X	X			
	Identify cadre positions at CoEs for Gyne-oncology		X	X			
	Implement a roster based service to cover all CoEs	DDG-MS, DDG-NCD, Hospital Directors		X			
4.3.3.2.Establish Colposcopy clinics in treatment centers	Strengthen facilities of the functioning colposcopy centers with operational guidelines	DDG-MS, Relavant Hospital Directors, D-NCCP	X	X			
	Scale up colposcopy facilities to cover all treatment centers						
	Develop a service package (colposcopes, cryo-therapy including liquid nitrogen) to establish colposcopy services	DDG-MS, D-NCCP	X				
	Develop a referral system to colposcopy facilities from histopathology units and to treatment centers to ensure pre-cancerous/cancerous lesions are referred for management	DDG-MS, DDG-LS, DDG-NCD	X	X			
	Liaise with FHB to partner for a training program for doctors and nurses on colposcopy	D-NCCP, D-FHB		X			
	Ensure a referral system is established with Cancer Early Detection Centers, Well Woman clinics conducting screening for cervical cancer (PAP smears and HPV testing)	DDG-MS, D-MCH, D-NCCP		X	X	X	X
	Support the proposal by FHB to include colposcopy training in MD (O&G) and Reproductive Health diploma course	DDG-NCD, D-NCCP	X	X			
	Introduce colposcopy register in conformity with FHB register on referrals to and from all colposcopy clinic to any CoEs	D-NCCP, D-MCH		X	X	X	X
SSD 4.3.4. Ensure quality of care at Breast Clinics							
4.3.4.1. Introduce guidelines/SOPs	Increase the number of breast care clinics	DDG-NCD, D-NCCP		X	X	X	
	Develop a package of services for breast care clinics with Operational guidelines	DDG-ET &R, D-NCCP	X				
	Develop a training program including a re-fresher training course		X	X			

	Advocate for Breast Nurse appointments	DDG-MS, Hospital Directors, NCD unit, D-MCH, D-NCCP	X	X			
	Establish linkages with CEDC, Healthy Life style clinics, Well Woman clinics conducting clinical examination of breasts (CBE)		X	X	X	X	X
SSD 4.3.5. Strengthen Medical oncology							
4.3.5.1. Improve medical oncology services at all treatment centers	Update service stratified clinical care guidelines, protocols, SOPs	DDG-ET&R, D-NCCP		X			
	Up-date National Essential Medicine Lists for cancer	DDG-MS, D-NCCP		X			
	Ensure no stock out situations by linking e-MIS of treatment centers with central and regional MSD and NCCP	DDG-MSD, Directors of Hospitals, D-NCCP		X	X	X	X
	Establish quality assurance procedures	DDG-MS, DDG-LS, D-Quality care & safety		X			
	Develop a system to monitor adverse reactions following chemotherapy	DDG-MS, Relevant Hospital Directors		X			
SSD 4.3.6. strengthen services for oral cancer and OPMD							
4.3.6.1. Improve treatment and care for oral cancer and OPMD	Develop a package of services for laser treatment	DDG-DS, DDG-MS, D-NCCP		X			
	Conduct a needs assessment to provide services at all centers managing oral cancers and OPMD and develop a SUP to be submitted to MoH	DDG-DS, D-NCCP		X			
	Centers managing oral cancer and OPMD to develop links with treatment centers	DDG-DS, DDG-MS, D-NCCP		X			
	Regularly update guidelines for management of oral cancers and OPMD	DDG-DS, D-NCCP			X	X	
	Strengthen reconstruction and rehabilitation care facilities for oral cancer in a phase-out manner	DDG-MS, DDG-DS, D-NCCP		X	X	X	X
	Include HR for management of oral cancers	DDG-MS, DDG-DS, D-NCCP	X	X			
SSD 4.3.7. Establish advanced treatment modalities for cancer							

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
4.3.7.1. Establish/strengthen Stem-cell transplantation	Identify the package of diagnostics, infrastructure and human resources needed for autologous and analogous stem cell transplant	DDG-MS, DDG-LS, DDG-Logistics, DDG-NCD, D-NCCP, Hospital Directors	X	X			
	Introduce autologous stem cell transplant at Apeksha		X				
	Conduct a feasibility study to scale up stem cell transplant centers			X			
	Establish stem cell transplant teams			X			
	Develop operational guidelines, SOPs for stem cell transplantation			X			
	Establish hematology/ heamoto-oncology wards/beds at CoEs with Stem Cell transplant facilities			X	X		
	Develop Donor Registry with linkages to International Donor Registries			X			
SSD 4.3.8. Establish/ Strengthen follow up of patients commenced on treatment							
4.3.8.1. Introduce a system to reduce loss to follow up	Introduce a follow up chart and loss to follow up registers in each treatment center to monitor follow up care	DDG-NCD, D-NCCP, Hospital Directors		X			
	Lobby to develop a patient navigation system which ensure confidentiality	DDG-NCD, DDG-MS, DDG-DS, D-NCCP, Patient support groups		X			
	Develop linkages with survivor care teams, rehabilitation care teams and palliative care teams, private hospitals and clinics, hospices, patient support groups maintaining confidentiality	D-NCCP		X			
Strategic Direction 4.4	**Ensure safety of healthcare workers and patients exposed to radiation and cytotoxic material**						
4.4.1. Establish comprehensive radiation safety and management	Develop a comprehensive National guideline on radiation safety and management	DDG-NCD, D-NCCP, SLAEB, CEA	X	X			
	Develop a package of equipment required for radiation safety			X			
	Appoint a radiation protective officer (RPO) for each cancer treatment centre and develop TOR			X			

4.4.2. Enforce knowledge and practice of radiation protection in diagnostic imaging	Develop a training plan for all categories of Radiology staff	DDG-MS, D-NCCP, SLAEB, CEA		X			
	Conduct training workshops to all staff involved in radiography						
	Develop a training plan to train staff		X				
	NAC to ensure mobilizing staff			X	X	X	X
4.4.3. Establish comprehensive cytotoxic safety and management	Develop guidelines for safe handling of cytotoxics	DDG-MS, DDG-NCD, D-NCCP, SLAEB, CEA		X			
	Appoint a safety officer for cytotoxic drugs and develop a TOR	Hospital Directors, D-NCCP		X			
	Develop a training plan to train staff						
4.4.4. Install Cytotoxic isolators	Conduct a Needs Assessment to map sites requiring cytotoxic isolators	DDG-MS, DDG-NCD, D-NCCP, SLAEB, CEA		X			
	Appoint a TWG to develop a infrastructure and HR plan and training needs for cytotoxic isolators			X			
	Capacity building of staff in handling cytotoxic wastes safely			X	X		
4.4.5. Ensure radiation protection of patients & staff	Install Iron chambers to regularly monitor the dose of radioactive treatment	DDG-MS, D-NCCP, SLAEB, CEA		X	X		
	Develop a plan to regularly monitor radiation levels of all healthcare workers and patients exposed to radiation			X			
	Develop guidelines /SOPs for Radiation monitoring			X			
4.4.6. Establish laboratory safety and waste disposal of clinical materials	Improve guidelines /SOPs	DDG-LS, DDG-NCD, SLAEB, CEA, D-NCCP		X			
	Appoint a safety officer for laboratories with TOR			X			
4.4.7.Strengthen the supply chain to ensure regular supply of radiotherapy auxiliary equipment for safety	All treatment centers to be linked to central and regional MSDs and to e-MIS of NCCP	DDG-MSD, D-MSD, Director Information, D-NCCP		X			
Strategic Direction 4.5	**Improve accessibility and availability of cost effective evidence based Paediatric oncology services**						
4.5.1. Scale up paediatric oncology services to all CoEs in a phased manner	Advocate appointment of pediatric oncologists to NH-Kandy, TH Karapitiya and TH-Jaffna and scale up to other centers	DDG-MS, DDG-Planning	X	X			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
4.5.2.Ensure comprehensive care for pediatric cancer patients are provided in the CoEs	Develop guidelines/protocols/SOPs	DDG-MS, DDG-NCD, D-NCCP		X			
	Train multidisciplinary pediatric care teams			X	X		
	Expand day care treatment facilities			X			
	Develop a referral and back referral system		X				
	Develop a network system with CoE		X				
4.5.3.. Ensure National Essential Pediatric oncology drugs are available without stock-out situations	Appoint a TWG for forecasting & estimating pediatric oncology drugs	DDG-MS, NMRA	X	X			
	Develop and update National Essential Paediatric Oncology Medicine List and link to PSM chain	DDG-MS, DDG-MSD D-NCCP					
4.5.4. Establish tele-medicine services for paediatric oncology	Conduct a pilot study to determine the cost-effectiveness of telemedicine services for paediatric cancer	DDG-MS, DDG-ET&R		X	X		

Strategic Objective 5: Ensure access & availability of survivorship, rehabilitation and palliative care facilities at all health service levels and at community level for cancer patients and support to their families and care givers

Strategy 5- Survivorship, Rehabilitation and Palliative care

Strategic Direction 5.1	Establishing survivorship and rehabilitative care at all health service levels and community level						
5.1.1. Introduce the concept of survivorship and cancer rehabilitation services to existing health care system	Conduct sensitization workshops for health care workers to understand the concept of survivor ship & rehabilitation, and its application for patient care	DDG-MS, DDG-DS, D-HPB, D-NCCP, Ministry of Social Services, D-YED		x	x		
	Conduct advocacy meetings with relevant stakeholders health service, social and welfare services to strengthen rehabilitation services						
	Develop guidelines for survivorship and cancer rehabilitation to be included in treatment & care guidelines through appointing a TWG						

5.1.2. Establish support groups among cancer survivors and well-wishers	Map the volunteers for community and family rehabilitation by districts and train them in providing physical, psychological rehabilitation	DDG-ET&R, RDHS, MOH, District Secretary, Ministry of Social Services		x	x		
	Monitor functioning of support groups through supervisory visits/ reviews	D-NCCP, RDHS		x	x	x	x
Strategic Direction 5.2	**Facilitate effective integration of specialist palliative care for cancer across all levels of healthcare (tertiary, secondary and primary)**						
5.2.1. Advocate palliative care is an essential component of comprehensive healthcare and Integrate into primary, secondary and tertiary healthcare system	Conduct advocacy meetings with relevant administrators relevant stakeholders to include palliative care as a component of comprehensive health care	DDG-ET&R, DDG-MS, D-Nursing, Ministry of Higher Education, D-NCD, D-NCCP, PDHS, RDHS	x	x	x		
5.2.2. Establish palliative care units at different healthcare levels	Identify the structure of palliative care units for each health service level and service packages for each service level	DDG-MS, DDG-NCD, D-NCCP	x	x	x		
	Appoint palliative care medical officer and nurses, physiotherapists, speech therapists to hospitals with CoEs and scale up to other treatment centers	DDG-MS, DDG-Planning, DDG-NCD, D-NCCP	x	x	x	x	
5.2.3. Strengthen legislative provisions for delivery of palliative care	Conduct consultative meetings with Attorney General Department	DGHS, DDG-MS, DDG-NCD, Legal dept MoH, D- NCCP		x	x		
5.2.4. Promote provision of basic palliative care services in hospice, CSO and home based care	Train selected staff for provision of basic palliative care	PHSD, D-NCCP	x	x			
	Monitor the institutions providing palliative care			x	x	x	x
5.2.5. Ensure PHNO provide basic palliative care as per their TOR	Conduct regular supervisory visits /review	PDHS, RDHS, D-NCCP	x	x	x	x	x
5.2.6. Ensure M&E using national indicators	Provincial and district cancer prevention and control committees to monitor interventions and report quarterly to National Steering Committee for Palliative Care	PDHS, RDHS, D-NCCP		x	x	x	x
Strategic Direction 5.3	**Develop knowledge and skills for palliative care among cancer treatment and care service providers across all health service levels and community care providers**						
5.3.1.Develop multi-disciplinary teams to provide palliative care for each health service level and at community level	Identify the structure for multi-disciplinary teams according health service levels and develop TOR	DDG-MS, PDHS, RDHS, D-NCCP	x	x			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
	Develop /update guidelines/protocols/SOPs especially focusing on “palliative care consult services” at secondary and tertiary care levels		x	x			
	Conduct TOT workshops for healthcare providers & community care givers			x	x	x	x
	Conduct in service training programs on Palliative care for medical officers/nurses/pharmacists/physiotherapists and other relevant health staff	PDHS, RDHS, Hospital Directors, D- NCCP		x	x	x	x
5.3.2. Ensure inclusion of palliative care in training programs in Medicine, Paediatrics, Nursing, Pharmacy and other relevant health disciplines	Advocacy meetings with Undergraduate and Post Graduate Medical, Nursing and Para-medical schools	DDG-ET&R, UGC, Ministry of Higher Education, D-NCCP, D-Nursing, SLMA	x	x	x		
	Develop training modules on palliative care to be included in various disciplines and participate in capacity building workshops			x	x	x	x
5.3.3. Advocate PGIM to sustain training	Include a representative from NCCP in PGIM Boards addressing survivorship and palliation	DDG-MS	x	x	x	x	x
Strategic Direction 5.4	**Develop partnerships with other government, non-government organizations (private sector hospitals, NGOs, CSOs) and General Practitioners to provide basic palliative care**						
5.4.1. Include appropriate interventions in the SBCC strategy to educate general public on pain relief and palliation and services available in the public and private sector	Develop appropriate IEC to be included in the SBCC strategy	D-HPB, D-NCCP		x			
	Facilitate networking among palliative care providers to ensure patients are given quality care	D-NCCP, PDHS, RDHS, PHSD, Private hospitals, College of General Practitioners		x	x	x	x
5.4.2. Establish standards and accreditation systems to strengthen palliative care services in hospices, NGOs and Community Service Organizations	Develop standards for accreditation systems to strengthen palliative care services in hospices, NGOs and Community Service Organizations	D-NCCP, D-PHSD	x	x	x		
	Monitor hospices adherence to the standards	D-PHSD, D-NCCP, RDHS		x	x	x	
5.4.3. Develop linkages with General Medical Practitioner Associations	Conduct Continuous Medical Education programmes on survivorship, rehabilitation and palliative care after cancer	D-NCCP	x	x	x	x	x
	Train general practitioners on provision of basic palliative care	D-NCCP		x	x	x	x
5.4.4. Empower family members, caregivers , general public for provision of basic palliative care	Provide basic training in palliative care among these groups and link them to an appropriate palliative care health services	D-NCCP, PDHS, RDHS, Hospital Directors, D-PHSD	x	x	x	x	x
Strategic Direction 5.5	**Ensure availability of essential drugs and technologies for provision of palliative care at each level of care**						

5.5.1. Ensure essential medicines (including morphine) and equipment are continuously available at each service level	Ensure hospital drug estimate committees forecast/estimate drugs required for palliation accurately	DDG-MSD, DDG-MS, Bio Medical Engineering, D-NCCP, NAC	x	x	x	x	x
	Train pharmacists of hospitals with cancer treatment centers on medicines given for palliative care and stock management			x	x	x	x
	Identify and provide equipment and technologies for each health service level (e.g.syringe drivers for pain, infusion pumps, PEG tubes)						
	Influence to insure continues supply liquid morphine	DDG-MS, D-NCCP		x			
	Monitor supply management chain at central MSD and RMSD through the e-MIS to avoid stock outs	D-MSD, Hospital Directors, D-NCCP	x	x	x	x	x

Strategic Objective 6: Strengthen cancer information systems and surveillance to provide accurate and timely data to monitor the progress and evaluate the outcomes of cancer control actions.

Strategy – Strategic information & management

Strategic Direction 6.1	**Strategic information for monitoring & evaluation of national response to cancer prevention and control in Sri Lanka**						
6.1.1. Establish a dedicated Strategic Information and Management Unit (SIM) at the NCCP with infrastructure and trained human resources	Establish Strategic Management Unit with a Terms of Reference (TOR)	DDG-NCD, D-NCCP	X				
	Allocate dedicated staff and identify TOR of each member			X			
	Identify a package of infrastructure required for the SIM unit (computers, printers, pen-drives, external hard disks, dongles, tables, internet modems, furniture etc)			X			
	Provide required infrastructure			X	X		
6.1.2. Develop an Electronic Management Information System (eMIS) at the NCCP to monitor and evaluate prevention & control of cancers in Sri Lanka	Conduct consultative workshops to identify variables to be monitored at each level (National, Provincial, District, Health Institution & MOH level ….) according to each technical area of cancer control including reporting indicators as per the Indicator Framework	D-NCCP, D-Information	X	X			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
	Develop software package using technical expertise of a local consultant			X	X		
	Identify funds of developing e MIS for cancer control in coordination with Directorate of Health Information of Ministry of Health			X	X		
	Implementing e MIS for cancer control through - out the country in a phased out manner			X	X	X	X
6.1.3. Compile and disseminate information related to prevention & control of cancers using appropriate channels of communication	Regular updating of website	D-NCCP	X				
	Update of social media interventions		X	X			
	Conduct regular media briefings with print & electronic media			X	X	X	X
	Develop relevant information dash boards			X	X		
6.1.4. Prepare Annual Reports, relevant sections of other regular publications (Annual Health Bulletin, Annual Performance Report of Ministry of Health …. Etc) appropriate to target audience in timely manner	Generate Annual Report of NCCP	D-NCCP		X	X	X	X
	Provision of relevant reports needed for other publications of the Ministry of Health		X	X	X	X	X
Strategic Direction 6.2	**Strengthening National Cancer Registry Programme (Sri Lanka Cancer Registry) with linkages to all PBCR, HBCR, Pathology laboratory based and other surveillance systems and programmatic data from relevant sources**						
6.2.1. Generate most accurate timely cancer incidence data of whole country & disseminate via communication channels	Clear the backlog of cancer incidence data of whole country	D- NCCP	X	X			
	Ensure timely publication of cancer incidence data of previous years			X	X	X	X
6.2.2. Update Standard Operational Procedures (guidelines with reporting formats, indicators) for cancer surveillance according to the IARC/ IACR standards	Update existing SOPs on cancer registration	D- NCCP	X	X			
	Validate SOPs with IARC/IACR			X			
	Publish through electronic media and ensure access to all those involve in cancer registration			X	X	X	X
6.2.3. Strengthening infrastructure and human resources for cancer registration and ensure resources are available to collect continuous, accurate, timely data and analyze for action	Develop the plan for infrastructure & human resources for cancer registration	DDG-MS, D- NCCP, TAC on Cancer Registry & Research	X	X			
	Submit the plan to TAC & NAC obtain approval			X			
	Implement the plan at national & hospital level to strengthen activities related to cancer registration			X	X	X	X

6.2.4. Ensure officers with the correct skill mix is trained in cancer surveillance & death registration (hospital staff of public and private sector, death registrars etc) to provide comprehensive, timely, confidential data as per IARC/ IACR standards	Develop a human resource development plan to train officers for cancer registration	D- NCCP	X	X			
	Submit the plan to TAC & NAC obtain approval			X			
	Develop training manual and data formats including e -learning resource with technical support from International Experts			X	X		
	Conduct national & hospital level training programmes	D-NCCP, Hospital Directors		X	X	X	X
	Obtain opportunities to attend international training programmes to registry personnel	D- NCCP		X	X	X	X
6.2.5. Introduce techniques for forecasting incidence of cancer, mortality rates, survival rates	Identify technical working group for advanced data analysis of cancer registry data on disease forecasting with international expertise	D-NCCP		X	X	X	X
	Conduct advanced analysis and generate scientific publications			X	X	X	X
Strategic Direction 6.3	**Strengthening Population Based Cancer Registries (PBCR) to be in par with IARC /IACR standards**						
6.3.1. Strengthen Population Based Cancer Registry of Colombo District (PBCR Colombo) to generate timely reports	Clear the backlog of PBCR Colombo Report	D- NCCP	X	X			
	Ensure timely publication of cancer incidence data of previous year			X	X	X	X
	Develop an infrastructure and human resources plan for PBCR Colombo and ensure resources are available to collect continuous, accurate, timely data and analyze for action	D- NCCP, TAC on Cancer Registry & Research	X	X			
6.3.2. Establish PBCR in other provinces in a phased manner	Facilitate initiatives for PBCR in other selected provinces	PDHS, RDHS	X	X	X	X	X
	Provision of technical assistance for the initiative of PBCR Northern province	D-NCCP	X	X			
	Develop a plan for infrastructure & human resources for cancer registration and submit to TAC and NAC and obtain necessary approval	PDHS Northern Province	X	X			
	Implement the plan at National & Provintial level to strengthen activities related to cancer registration	D- NCCP		X	X		
6.3.3. Update Standard Operational Procedures (guidelines with reporting formats, indicators) for PBCR according to the IARC/IACR standards	Update existing SOPs on Population Based Cancer Registry	D- NCCP		X			
	Validate SOPs on PBCR through IARC/IACR			X			
	Publish through electronic media and ensure access to those involve in cancer registration			X			

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
6.3.4. Link all PBCRs to Sri Lanka Cancer Registry (SLCR) to generate timely reports	Introduce uniform database (eg. CanReg 5) to all PBCR initiatives to facilitate sharing of data and uniformity	D-NCCP, D- Health Information	X	X	X		
6.3.5. Continue the existing Collaborative Research Agreement with IARC to further strengthen PBCR initiatives	Identify collaborative research opportunities with IARC in relation to PBCR	DDG-NCD, D-NCCP		X			
	Conduct collaborative research to strengthen cancer registration			X	X	X	X
Strategic Direction 6.4	**Establish HBCR in all cancer treatment centers and ensure reporting to SLCR**						
6.4.1. Develop Standard Operational Procedures (guidelines with reporting formats, indicators) for initiating and maintaining HBCR	Develop SOPs for initiating and maintaining HBCR	DDG-MS, D-NCCP, TAC on Cancer Registry & Research, D-Health information	X	X			
	Validate SOPs with IARC/IACR			X	X	X	
	Publish information through electronic media and ensure access to those involve in cancer registration			X			
6.4.2. Link all HBCRs to Sri Lanka Cancer Registry (SLCR) to generate timely reports for action	Introduce uniform database (eg. CanReg 5) to all HBCR initiatives to facilitate sharing of data	D- NCCP, TAC on Cancer Registry & Research, Hospital Directors	X	X			
	Provision of regular technical assistance to sustain HBCR			X	X	X	X
	Generate HBCR reports at each cancer center level avoiding duplicates at hospital level from different sources			X	X	X	X
6.4.3. Train staff of treatment centers on management of comprehensive and confidential data	Identify key staff for HBCR at each hospital level	D- NCCP, TAC on Cancer Registry & Research	X	X			
	Develop training material including e -learning resource			X	X		
	Conduct national & hospital level training programmes		X	X	X	X	X
	Obtain opportunities to attend international training programmes to registry personnel				X	X	X
6.4.4. Monitor progress and timely reporting to SLCR based on the identified indicators	Develop monitoring plan with key indicators	D- NCCP, TAC on Cancer Registry & Research		X			
	Conduct regular visits to monitor and trouble shoot issues related to cancer registration			X	X	X	X
6.4.5. Establish Hospital Based Paediatric cancer registry for Sri Lanka in par with Global Initiative for Paediatric Cancers	Identify relevant variables and database to commence paediatric cancer registry	D-NCCP, NCIM	X	X			
	Commencement of hospital based paediatric cancer registry and generate timely reports		X	X	X	X	X
Strategic Direction 6.5	**Expand pathology-based cancer registries to all pathology laboratories (Histopathology /Haematology /Oral Pathology) and ensure timely reporting to SLCR**						

6.5.1. Update Standard Operational Procedures (guidelines with reporting formats, indicators) to streamline pathology-based cancer registration	Develop SOPs for initiating and maintaining pathology laboratory based registries	D-NCCP, D- Health Information, College of Pathologists, College of Haematologists		X	X		
	Validate SOPs with IARC/IACR Standards			X	X		
	Publish through electronic media and ensure access to those involve in cancer registration			X	X	X	X
6.5.2. Train staff at pathology laboratories on management of comprehensive and confidential data	Develop training material including e - learning resource	DDG-NCD, D-NCCP	X	X	X	X	X
	Share the training material to relevant laboratories						
6.5.3. Monitor progress by NCCP and timely reporting to SLCR based on the identified indicators	Developing the M & E plan on pathology laboratory-based cancer registration	D-NCCP, Hospital Directors	X				
	Conduct regular reviews & feed- back for further improvement		X	X	X	X	X
Strategic Direction 6.6	**Integrate cancer registry information system into electronic patient management information systems at secondary and tertiary hospitals and link to NCCP e-MIS**						
6.6.1. Select the variables that needs to be shared across hospital levels (from point of diagnosis & point of treatment) while maintaining confidentiality	Identify the variables/ minimum data set needed for cancer registration and communicate to Directorate of Health Information	D-NCCP, D- Health information	X	X			
6.6.2. Incorporate relevant details to cancer registry information system from non-oncological settings (Oro Maxillo Facial units, Gastro-intestinal units, Genito-urinary units, Neuro-surgical units…… etc)	Extract relevant information from the hospital Patient management information systems and feed to the national cancer registry database maintaining confidentiality of information	D-NCCP, D-Health information		X	X	X	X
	Ensure there is no duplication with pathology registry	Hospital Directors, D-NCCP		X	X	X	X
Strategic Direction 6.7	**Improving the quality & coverage of cancer incidence & mortality data**						
6.7.1. Ensure uniform latest coding of International Classification of Diseases (ICD) to code both morbidity & mortality of different cancers	Communication with Medical Statistics Unit of Ministry of Health & Registrar Generals Department to ensure uniformity of coding	D-NCCP, D-Health Information		X	X		
6.7.2. Train staff of Medical Statistics Unit, NIHS, Registrar General's Department on data collection, data entry and analysis	Identify training needs of personnel who handle cancer related morbidity & mortality data	D-NCCP, D-Health Information		X			
	Conduct regular training programmes on cancer registration			X	X	X	X
6.7.3. Further strengthening cancer registry legal framework towards declaring cancer as a disease for mandatory reporting and advogate to make cancer a notifiable disease	Issue a new circular signed by the Secretary Health declaring cancer as a disease for mandatory reporting	D-NCCP, DDG-NCD, Legal Division of MoH, Attorney General Department	X				

Major activities	Sub activities	Responsibility	2020	2021	2022	2023	2024
	Commence stakeholder consultations to declare cancer as a notifiable disease for mandatory reporting		X	X			
	Initiate the legal process with Attorney General Department to declare cancer as a disease for mandatory reporting			X	X	X	X
Strategic Direction 6.8	**Linking e-MIS (NCCP) with information and surveillance systems of other public health programmes and relevant health sector facilities for prevention & control of cancers**						
6.8.1. Integrate chronic NCD risk factor surveillance systems (STEPS survey, HLC Information System) to the NCCP information system	Identify relevant information required from NCD risk factor surveillance system and request to create a link to STEPS survey data system	DDG-NCD, D-NCD, D-Health Information	X	X			
6.8.2. Integrate cervical cancer screening information system to the cancer information system	Identify relevant information required from cervical cancer screening information system and request it	DDG-PHS II, DDG-NCD, D-MCH, D-NCCP		x	x		
6.8.3. Integrate HPV and HBV vaccination data to the cancer information system	Identify relevant information required from epidemiology information system	DDG-PHS I, DDG-NCD, Epidemiology Unit, D-NCCP		x	x		
6.8.4. Integrate hospital dental clinic data on OPMD/Oral cancer to cancer information system	Map the dental clinics in the country & identify relevant variables	DDG-DS, D-NCCP, D-IOH		x	x		
	Develop infrastructure facilities and human resources in the dental clinics to gather data on OPMD /Oral cancer using a simple data format	DDG-DS, D-Information, D-NCCP, D-IOH		x	x	x	

Strategic Objective 7 Promote research and utilization of its findings for prevention and control of cancers

Strategy 7 – Promote research and utilization of its findings for prevention and control of cancers

Strategic Direction 7.1	Identify research priorities on prevention and control of cancer						
7.1.1 Strengthen the Technical Advisory Committee (TAC) on Cancer Research by engaging multi-sectoral, multi-disciplinary stakeholders to identify research priorities	Form research committees for identified thematic areas	TAC on Cancer Registry & Research, DDG-MS, DDG-NCD, DDG-DS, DDG ET & R, D-NCCP	X	X			
	Identify research needs of each thematic area		X	X	X	X	X
	Develop a research agenda inclusive of all pillars of continuum of prevention and control of cancer			X	X	X	X
	Facilitate bi annual meetings and submit reports to NAC			X	X	X	X
Strategic Direction 7.2	**Promote a conducive environment for cancer research**						

7.2.1 Facilitate research opportunities through communication with Sri Lankan & International Institutes based on identified research priorities.	Disseminate research opportunities and priority areas through research seminars, web pages, social media etc	TAC on Cancer Registry & Research, DDG ET & R, D-NCCP	X	X	X	X	X
7.2.2 Promote Post Graduate trainees to involve in cancer research from bench to bed side	Disseminate research priorities to universities and post graduate institutions	TAC on Cancer Registry & Research, DDG ET & R, Universities, D- NCCP		X	X	X	X
	Maintain a list of ongoing post graduate research projects related to cancer			X	X	X	X
	Encourage each institute to compile research evidence related to cancer control based on post graduate research	Universities & Research institutions, PGIM		X	X	X	X
7.2.3 Advocate for a research budget	Communicate with Ministry of Health & other funding sources including national / international development partners	DDG-ET&R, D-NCCP	X	X	X	X	
	Monitor allocation of funds for cancer research in each year			X	X		
7.2.4 Promote and conduct clinical research related to cancer control	Allocate funds to conduct prioritized cancer research	DG-ET&R, D-NCCP, Heads of research institutes		X	X	X	X
	Link with already established research institutes / laboratories to conduct clinical research related to cancer control & care			X	X	X	X
7.2.5 Link with local organizations e.g. National Science Foundation, Atomic Energy Authority, Central Environmental Authority, to include cancer research	Communicate with research institutes to include cancer research in their research agenda	DDG-ET&R, D-NCCP, Respective research institutes		X			
7.2.6 Advocate to include dedicated research grant for cancer research through National Research Councile	Communicate with National Research Council for dedicated Research grant cancer research	Secretariat for National Research Council, D-NCCP		X			
	Encourage cancer researchers to apply research grant for cancer research from National Research Council			X	X	X	X
7.2.7 Build partnerships with International agencies e.g. IARC for collaborative research	Develop a collaborative research agreement (CRA) with international Agencies	D-NCCP, Liaise with IARC		X			
	Identify collaborative research areas & conduct research			X	X	X	X
Strategic Direction 7.3	**Translate research evidence into practice to strengthen preventive services, treatment and care services**						
7.3.1 Research committee to formulate recommendations to strengthen policy formulation and programme management	Formulate evidence based on latest cancer research	DDG-ET&R, DDG-NCD, DDG-DS, D-NCCP, Heads of research institutes, TAC on Cancer Registry and Research		X	X	X	X
	Establish communicate with research community			X	X	X	X
7.3.2 Annual reports to highlight cancer research findings in Sri Lanka and gaps	Allocate a separate section on cancer research at Annual Report of NCCP	D-NCCP		X	X	X	X

Results Framework

Impact

1. 25% relative reduction of the premature mortality rate of cancers from the current level by 2025 (2015 -5.26%, Target for 2025 - 3.94%)
2. 25% increase of proportion of cancer patients who receive comprehensive palliative care services out of all cancer patients who require them by 2025.
3. 5% relative reduction of annual increase of cancer incidence rate of preventable cancers (Cervical and Oral), from the current level by 2025

Desired Outcomes

1. Strengthened national cancer control programme through leadership, advocacy & governance
2. Reduction of risk factors and determinants for cancers throughout the life-cycle.
3. Increased early detection (screening and early diagnosis) of breast, cervical and oral cancers
4. Improved diagnostic and treatment facilities for common cancers according to the levels of health care
5. Improved access & availability of survivorship, rehabilitation and palliative care facilities for patients with cancer at each level of care
6. Strengthened cancer information systems and surveillance to provide accurate and timely data for policy formulation, monitoring & evaluation of cancer control programme
7. Evidence generated for national policy and programme development

1. Strengthened National Cancer Control Programme through leadership, advocacy & governance

Level	Narrative Summary	Indicators	Means of Verification	Key Assumptions
Outcome 1	**Strengthened National Cancer Control Programme through leadership, advocacy & governance**	**Availability of a written policy on Prevention & Control of Cancers and a National Strategic Plan (NSP). Activity Plan and a M&E Plan**	**NCCP Documents on NSP**	
Output 1.1	NSP for prevention and control of cancers (2020-2024) is implemented.	Availability of a full-time team of staff led by the national cancer control programme manager at the Ministry of Health to plan, coordinate, monitor and evaluate the national response Availability of national human resources, medical devices and infrastructure plans	Annual report of NCCP	Required cadre approval, availability of human resources, availability of funds
Output 1.2	Improved multi-sectoral response for cancer control	Number of Government Ministries included prevention of NCDs including cancer in their policies	Reports of NCD council Mid- term and end term evaluation reports of NSP	'Health –in-all Policies' adopted by the relevant ministries
Output 1.3	Improved monitoring and evaluation of cancer control activities	Number of NAC meetings held per year out of planned Number of TAC meetings held per year out of planned	Minutes of the meetings	Relevant officials participated and decisions communicated to National NCD Council

Output 1.4	Improved response from provincial and district teams	Number of provinces & districts with Annual Provincial /District Action Plans Number of Interventions implemented as per timelines of District Action Plan	Minutes of the meetings	Meetings held regularly Availability of funds and resources M&E by NCCPTechnical inputs by expert technical committees

2. Reduction of risk factors and determinants for cancers throughout the life-cycle

Level	Narrative Summary	Indicators	Means of Verification	Key Assumptions
Outcome 2	**Reduction of risk factors and determinants are addressed throughout the life cycle**	**1.% of adults 18-69 years old and school going children adopting healthy life style behaviors (reduced physical inactivity, increased intake of healthy foods, reduced use of tobacco and alcohol, reduced overweight and obesity)** **2. Prevalence of OPMD among adults (35-44 years) and elderly (65-74 years)** **3.Percentage increase of government taxes for tobacco and alcohol** **4. % girls in Grade six (10-11 years) age group vaccinated against HPV**	**STEPS Survey, School Based Health Survey National Oral Health Survey Treasury reports Reports of Epidemiology Unit**	**Surveys are conducted as scheduled**
Output 2.1	SBCC strategy has addressed unhealthy lifestyles, signs and symptoms for early detection of cancer, accessibility and availability of services, cancer survival	Availability of a SBCC strategy for cancer control Percentage of adults and school children have the knowledge on association of unhealthy lifestyles and cancer	Report of SBCC strategy School Based Health Survey	Availability of Funds
Output 2.2	Integration of cancer prevention and control into Health Promoting settings for early detection of cancer and reduction of risk factors	Percentage of health promotion settings addressing prevention and control of cancer among all HP settings	Reports of NCCP Special Survey Reports of the HPB	Human resource availability, commitment by other sectors
Output 2.3	Collaborate with NATA to implement Sri Lanka National Policy on Tobacco Control and NATA ACT as a measure to prevent cancer	Percentage of current cigarette smoking among adults and out of school youth Percentage of current smokeless tobacco use among adults and out of school youth	STEPS survey	Coordination with NCD Unit & NATA

Output 2.4	Introduction of new regulations prohibiting importation of areca-nut to the country	Number of Advocacy Meetings held New regulations introduced banning importation of areca-nut	Meeting Minutes of the TAC on Oral Cancer Printed regulations	Political leadership
		Percentage of betel and areca nut chewing among adults and out of school youth	STEPS survey, National Oral Health Survey	
Output 2.5	Collaborate to implement of National Policy on Alcohol Control and NATA Act	Percentage of current alcohol use among adults	STEPS survey	Coordination with NATA , D/ Mental Health & D/ NCD
Output 2.6	Policies and guidelines of other government Ministries and Departments highlight the association of unhealthy food and beverages with development of cancer	Percentage of government ministries addressing healthy eating in policies and programmes Percentage of adults who consume >5g of salt daily Percentage of adults who consume 5 servings of fruits and/or vegetables per day	NCCP reviews STEPS survey Special surveys STEPS survey	Coordination with D/ Nutrition, D/NCD and other relevant sectors
Output 2.7	Public awareness enhanced of the links between overweight, obesity, physical inactivity that recognizing as risk factors for cancer	Percentage of physical inactivity in adults Percentage of adults who are overweight and obese	STEPS survey	Coordination with NCD Unit, implementation of SBCC strategy
Output 2.8	Collaborate with Epidemiology unit to sustain HPV & HBV vaccination programme	Number of meetings attended & EPI reviews Vaccination against HPV and HBV have sustained coverage through the routine immunization schedule	Meeting Minutes Annual Health Bulletin of MoH	Coordination with Epidemiology Unit
Output 2.9	HBV vaccination is provided for healthcare workers in high risk settings	Circular issued by DGHS Number of tertiary, secondary and PMCI hospitals providing HBV vaccination to identified high risk healthcare workers	Reports of the Epidemiology Unit	Coordination with office of DDG-MS and DGHS
Output 2.10	Collaborate with SLAEB, National Institute of Occupational Safety and Health (NIOSH) and Environment & Occupational Health Unit (E &OH) of Ministry of Health to develop policy on safe disposal of toxic wastes such as industrial, laboratory, nuclear, cytotoxic waste	Availability of a policy	Meeting minutes, Policy documents	Coordination withSLAEB, NIOSH and E&OH unit

Output 2.11	Policy on Indoor and Outdoor Air Pollution introduced	Availability of a Policy	Meeting Minutes	Coordination with NIOSH, E&OH unit and

3. Increased early detection (screening and early diagnosis) of breast, cervical and oral cancers

Level	Narrative Summary	Indicators	Means of Verification	Key Assumptions
Outcome 3	**Increased early detection (screening and early diagnosis) of breast, cervical and oral cancer**	**% of Stage 1 and 11 breast cancer among all detected breast cancers % of Stage 1 and 11 cervical cancer among all detected cervical cancers % of Stage 1 and 11 oral cancer among all detected oral cancers Percentage of precancers detected out of those screened for cervical cancer Percentage of precancers detected out of those screened for Oral cancer**	**Sri Lanka Cancer Registry (SLCR)Annual reports from FHB Oral health screening report of NCCP**	**Accurate data is sent through HBCR, PBCR, Pathology Laboratory based cancer registry to National and no duplication of data**
Output 3.1	Increased public awareness on early detection of cancer	Number of IEC (video, posters, leaflets) materials developed and distributed on signs and symptoms of common cancers, advantages of early detection, services provided for cancer	Availability of SBCC strategy	Most at risk populations, vulnerable groups and general public in urban and rural and estate sector have been reached
		% of Primary health care workers knowledge on early symptoms of common cancers including breast, cervical, oral cancer	Special Survey	
		% of adults in the age group 18-69 years aware of early symptoms of common cancers including breast, cervical and oral cancer		
		Level of community-awareness on early symptoms of breast, cervical, oral cancers and other common cancers		
Output 3.2	Increased screening facilities for early detection of pre-cancerous lesions / cancers in the community setting	Number of functioning WWCs which are catering to 15,000 population	Annual report of FHB	Effectiveness of SBCC strategy to create public awareness, improve healthcare providers knowledge and perceptions
		Percentage screened for cervical cancer among the 35 year old cohort at Well Women Clinic (WWC) (Target 80% in year 2023)	Annual report of FHB	
		Percentage screened for cervical cancer among the 45 year old cohort at WWC (Target 60% in year 2023)	Annual report of FHB	
		Percentage women underwent clinical breast examination at WWC (Target 80%)	Annual report of FHB	

		Percentage screened for breast, and oral cancer in Health Life Style Centres	Annual report of NCD Unit	
		Percentage of pre-cancerous cervical lesions detected among all screened for cervical cancer	Annual report of NCCP Special survey	
		Percentage of people with OPMD among all screened for oral cancer	OMPD return of NCCP	
		Percentage of OPMD patients presented at OMFS units among total referred by screening	OMPD return of NCCP	
Output 3.3	Cancer Early Detection Centres (CEDC) are established in each province providing enhanced access to early detection of cancers	Number of provinces with functioning Cancer Early Detection Centres (CEDC)	Annual report of NCCP	Availability of human resources, physical resources and finances.
Output 3.4	Precancers and cancers are detected early through the CEDC	Percentage of pre cancers and cancers detected out of total attendees per CEDC	Annual report of NCCP	Availability of guidelines, infrastructure and human resources
Output 3.5	Colposcopy services are established to provide further management of females with cervical disease	Percentage of districts having functioning Colposcopy units out of total number of districts	Reports of NCCP	Availability of guidelines, infrastructure and human resources
Output 3.6	Females with pre-cancerous cervical diseases / cervical cancers identified through the screening programme are treated.	Percentage of screen positive cervical cancer patients presented to the Colposcopy Centres or received treatment from gynaecology units out of total number of cervical cancer screen positives (Target 90%)	Special survey, Report of NCCP Annual report of FHB	Effectiveness of SBCC strategy, availability of guidelines, infrastructure and human resources
Output 3.7	Females with pre-cancerous cervical diseases/ cervical cancers identified through the pathology laboratories are treated.	Percentage received care from Gyneoncology /Oncology units out of total precancerourous /cervical cancer patients diagnosed by the pathology laboratories (Target 90%)	National Cancer Registry Data & Pathology laboratory-based data	Availability of guidelines, infrastructure and human resources
Output 3.8	Improve quality of early detection of common cancers including breast, cervical and oral cancer	Percentage of facilities with updated guidelines on Early detection of common cancers and referral pathways	Reports of NCCP	All centers have access to a printed and soft copy of guidelines, quality assurance systems in place
Output 3.9	Improved capacity of healthcare providers for screening and early diagnosis of common cancers (breast, cervix and oral)	Percentage of training programs held as per the training plan for different categories of health care workers	Reports of NCCP Annual report of FHB Facility survey	Availability of finances and ability to assess skills
		Percentage of skilled healthcare workers of different categories for early detection of cancer Primary health care workers knowledge on early symptoms of breast, cervical, oral, cancers		

Output 3.10	Implementation of referral and back referral pathways	Availability of referral pathway criteria in guidelines for management of suspected diagnoses with linkages	NCCP referral pathway guidelines	All centers have access to a printed and soft copy Staff had adequately trained
		Percentage of primary, secondary and tertiary level screening facilities with referral pathways for common cancers including breast, cervical and oral cancer		
		Percentage of cases of breast, cervical and oral cancers from those screened at primary, secondary and tertiary level screening facilities referred to treatment centers		
Output 3.11	Availability of access to Mammography facilities for every female with breast disease	No. of Mammography machines through out the country Percentage of districts having referral mechanism for patients with breast diseases for mammography services	reports of NCCP	Human resource & funds available.
Output 3.12	Improved Public-private partnerships	Number of Activities (CPD programmes, Awareness programmes……) held for private sector hospitals and general practitioners	Annual report of NCCP	Cooperation of service providers

4. Improved diagnostic and treatment facilities for common cancers according to the levels of health care

Level	Narrative Summary	Indicators	Means of Verification	Key Assumptions
Outcome 4	**Improved diagnostic and treatment facilities for cancers according to the levels of care**	**Availability of comprehensive treatment and care in CoE for adults and children**	**Reports of TAC on D&T**	**Availability of technical experts, funds and infrastructure facilities**
		Availability of basic treatment and care for adults in other treatment centers & surgical units	Special report of NCCP	
		Availability of basic treatment and care for children in other treatment centers & surgical units	Reports of NCCP	
		Availability of stratified operational guidelines for CoE and other treatment centers on diagnostics, treatment and care	Report of TAC on D &T	
Output 4.1	Increased availability of infrastructure and diagnostic service packages for common cancers	Percentage of treatment centers with package of devices and infrastructure for diagnostic radiology services out of all treatment centers	Facility survey reports from treatment centers	Availability of HR and funds
		Percentage of treatment centers with package of devices and infrastructure for nuclear medicine imaging out of all treatment centers		
		Percentage of treatment centers with package of devices and infrastructure for Laboratory diagnostics out of all treatment centers		

		Percentage of treatment centers with package of devices and infrastructure for Pathology diagnostics out of all treatment centers		
Output 4.2	Availability of human resources for diagnostics as per the HR Plan for cancer care	Number of staff available for diagnostics from each category per treatment center	Ministry of Health HR Plan	Cadres approved and mobilized
Output 4.3	Staff trained on diagnostics according to category and service delivery level as per the Training Plan	Number of staff in CoE trained in diagnostics as per training curriculum Number of staff in other treatment centers trained in diagnostics as per training curriculum	Hospital based reports NCCP –Training Plan	Availability of human resources & training curriculum
Output 4.4	Increased accessibility and availability of resources and infrastructure for comprehensive treatment and care	Number of fully functional CoE as per standard operating procedures Number of fully functional other treatment centers as per SOP Number reached through the functional outreach oncology clinics per treatment center	NCCP reviews Provincial and district committee reports Hospital Reports	Human resource availability Power of Lobbying by support groups
Output 4.5	Availability of human resources for treatment and care as per the HR Plan for cancer care	Number of trained staff available from each category per treatment center for provision of continuum of care	Ministry of Health–HR Plan & Hospital plan HR	human resource availability Functional e-MIS
Output 4.6	Increased availability of treatment pathways for management of common cancers	Number of CoE with external beam radiotherapy Number of CoE with internal beam radiotherapy Number of CoE with Radio-active-Iodine therapy facilities Number of treatment centers with onco-surgical facilities as per guidelines Number of treatment centers with onco-gynecology facilities as per guidelines	Hospital reviews & reports Facility Survey e-MIS	Funds and human resource availability Functional e-MIS
Output 4.7	Improved quality of treatment and care	Number of treatment centers with updated clinical guidelines on shared care treatment pathways for common cancers Presence of multi-disciplinary teams for cancer care at CoE Availability of a tumor board TOR and meeting plan Number of CoEs with tumour boards Number of Tumor Board meetings held in each province as per plan	Reports of NCCP Reports of D& T TAC reports Reports from TAC on D &T Reports from Tumor Boards	Human resource availability Functional e-MIS
Output 4.8	Staff trained on treatment & care pathways of common cancers according to category and service delivery level as per the Training Plan	Number of staff in CoE trained in comprehensive treatment and care	Hospital Reports NCCP – Training Plan Review meeting reports of NCCP	Availability of funds and resources

		Number of staff in other treatment centers trained in comprehensive treatment and care		
Output 4.9	Improved safety of radiation and cytotoxic materials	Availability of National guideline on radiation safety and management	Reports of NCCP Reports of NAEB Reports of E&OH	Availability of funds and resources
		Availability of National guideline on cytotoxic safety and management		
		Availability of package of equipment required for radiation & cytotoxic safety		
		Percentage of different categories of staff at diagnostic and treatment centers adhering to national guidelines		
Output 4.10	Staff trained safety on radiation and cytotoxic material	Percentage of staff trained in safety on radiation and cytotoxic material as per training Plan	Reports of NCCP Annual report of SLAEB	
Output 4.11	Increased availability and accessibility of oncology medicines	Availability of an Essential National Drug list for oncology Medicines consistent with WHO drug list for adults and children	MSD reports MSD reports on stock outs	Availability of funds and resources
		Proportion of treatment centers reported oncology essential drug stock outs throughout the year		Availability of funds and resources
Output 4.12	Treatment facilities for paediatric cancers are strengthened at selected cancer treatment centres	No. of cancer centres providing paediatric cancer care. % of treatment centers providing treatment for acute lymphocytic leukemia (ALL) for paediatric & adolescent cancer patients.	Reports of NCCP Reports of hospitals	Availability of funds and resources
Output 4.13	Increased public awareness of accessibility and availability of cancer care services	Number of community programmes on accessibility and availability of treatment and care	Reports of NCCP	Availability of funds and resources
		Knowledge, attitudes and perceptions of public towards cancer treatment and care	Special Survey reports	

5. Improved access & availability of survivorship, rehabilitation and palliative care facilities for patients with cancer at each level of care

Level	Narrative Summary	Indicators	Means of Verification	Key Assumptions
Outcome 5	**Improved access & availability of survivorship, rehabilitation and palliative care facilities for patients with cancer at each level of care**	**Availability of a strategic framework of palliative in Sri Lanka**	**Progress report of Strategic Framework of Palliative Care**	**Availability of funds and human resources**
	palliative care facilities for patients with cancer at each level of care	**Percentage of cancer treatment centres with palliative care units** **Percentage of other Provincial General and District General Hospitals with palliative care units** **Percentage of Primary medical care institutes (PMCI) with palliative care services** **Percentage of provinces with at least one hospice providing palliative care services** **Percentage of health care institutions having access to opioids and other essential palliative care medicines**	**Progress report of Strategic Framework of Palliative Care Reports of NCCP Hospital returns/ PDHS & RDHS reports Health facility survey**	
Output 5.1	Survivorship, palliative care services integrated at the health institutions	Availability of a strategic framework of palliative care in Sri Lanka Availability of guidelines /standards on provision of palliative care for common cancers Percentage of cancer treatment centers having Palliative care Consult Service (PCCS) with referral system with primary care	Reports of NCCP	Advocacy with other stakeholders Availability of expert resource
Output 5.2	Availability of sustainable, quality and accessible survivorship and palliative care services	Availability of guidelines /standards on establishment and functioning of palliative care units at each levels of care Percentage of cancer treatment centers with survivorship support groups	Reports of NCCP	Resource availability

Output 5.3	Availability of trained human resources for palliative care	Percentage of cancer treatment centres with a trained and designated PCCS team	Reports of NCCP	Funds are mobilized, Availability and commitment of volunteers Health worker retention capacity
		Percentage of PCUs with a MO/PHNO/trained care-giver	MIS, Reports of NCCP	
		Availability of PC in basic and post basic curricula	Reports of NCCP	
Output 5.4	Partnerships developed with other government, non-government organizations	Percentage of hospices linked with closest cancer treatment centres	Reports of NCCP	Availability of guidelines
		Percentage of hospices with trained care-givers	Facility survey	
Output 5.5	Improved legal milieu for provision for delivery of palliative care	Availability of legislative provision for delivery of palliative care	Report of NCCP, Circulars	Negotiation capacity of legal officers
Output 5.6	Availability of drugs and physical resources to provide palliative care	Consumption of strong opioids per capita Consumption of strong opioids per cancer death Percentage of hospitals with access to morphine for pain management for patients with cancer Number of hospitals with palliative care units which have not experienced out of stock episodes for Morphine within last year	Reports of NCCP, MSD reports, Health facility survey	Healthcare workers awareness on the need for a continuous supply of drugs Morphine is used mainly for cancer patients Drugs are distributed to institutions from RMSDs in a timely manner.

6. Strengthened cancer information systems and surveillance to provide accurate and timely data for policy formulation, monitoring & evaluation of cancer control programme

Level	Narrative Summary	Indicators	Means of Verification	Key Assumptions
Outcome 6	**Strengthened cancer information systems and surveillance to provide accurate and timely data for monitoring & evaluation of cancer control programme**	**Availability of functional updated e-MIS for NCCP Availability of updated comprehensive National Cancer Registry Programme**	**Reports of NCCP**	**Availability of funds, human resources, technical expertise. Cancer is made a notifiable disease**

Output 6.1	Electronic Management Information System (eMIS) is established at the NCCP to monitor and evaluate prevention & control of cancers in Sri Lanka	Availability of a functional e- MIS NCCP e –MIS is linked to other health and non-health sector platforms at national and provincial level for sharing information.	Reports of NCCP	Availability of funds, human resources, hardware and software maintenance agreements Collaboration with national & international experts for continuous guidance
Output 6.2	National Cancer Registry Programme (Sri Lanka Cancer Registry) is strengthened to generate most accurate timely cancer incidence data of whole country.	Availability of data on incidence of cancers disaggregated by age, sex, geographical district, Site of cancer, stage of cancer, etc.	Cancer registry reports in each year	Availability of funds and human resources
Output 6.3	Population Based Cancer Registry (PBCR) is established to generate most accurate timely cancer incidence data of selected administrative regions	Population-based cancer registries covering at least one defined administrative region with urban and rural populations Availability of timely publication of PBCR report Availability of 5-year cancer survival rates for selected cancers	PBCR reports of NCCP Special surveys	Availability of funds and human resources
Output 6.4	Hospital based cancer registries (HBCR) in all cancer treatment centers are established and ensure reporting to SLCR	Percentage of hospitals having a HBCR out of all cancer treatment centres situated in tertiary and secondary care hospitals Availability of Hospital Based Paediatric Cancer Registry at NCI Maharagama	HBCR report of each cancer centre Report of hospital based paediatric cancer registry National Cancer registry of NCCP	Availability of funds and human resources
Output 6.5	Pathology-based cancer registry is established at each pathology laboratory	Percentage of pathology laboratories having Pathology based cancer registries out of all pathology labs	National Cancer registry Reports of NCCP	Availability of funds and human resources
Output 6.6	Integrate cancer registry information system into electronic patient management information systems at secondary & tertiary care hospitals	Percentage of secondary & tertiary care hospitals that integrate cancer registry information system into electronic patient management information systems	Reports of NCCP	Patient management systems are introduced at the hospital level.

Output 6.7	Staff is identified and trained to run the cancer registry at cancer treatment centres	Percentage of cancer centres having dedicated staff for cancer registration	Reports of NCCP	Availability of dedicated skilled staff
Output 6.8	Staff trained at other health and non-health institutions for accurate, relevant and timely data collection for e-MIS on cancer control	Number of training of programmes conducted for the dedicated staff Number trained in different institutions in maintaining e-MIS on cancer control	Reports of NCCP	Identification of all institutions which need to provide data for e-MIS
Output 6.9	Ensuring of quality & coverage of cancer mortality data	Availability of updated accurate cause specific cancer mortality data set through IMMR & civil registration system	Annual Health Statistics in Medical Statistics Unit Cause Specific mortality data of Registrar General Department Cancer Mortality Data of PBCR Colombo district	Availability of pre-tested data collection formats for cause of death Availability of trained staff

7. Evidence generated for national policy and programme development

Level	Narrative Summary	Indicators	Means of Verification	Key Assumptions
Outcome 7	**Evidence generated for national policy and programme development**	**Report of change of practices or policies based on research evidence**	**Reports of NCCP**	
Output 7.1	Strengthen the Technical Advisory Committe on cancer research	Number of research committes for identified thematic areas.	Reports of NCCP	Availability of cancers research unit at NCCP with TOR
Output 7.2	Research agenda inclusive of all pillars of continuum of prevention and control of cancers is prepared	Availability of an updated list of priority research areas.	Reports of NCCP Reports of TAC on Research	Availability of human resources and funds
Output 7.3	Priority researches related to cancers are conducted.	Proportion of priority research conducted annually Proportion of priority research conducted annually No of initiated collaborative research	Reports of NCCP	Availability of funds
Output 7.4	Research evidence are translated into practice for cancer control	Availability of report on research findings utilized for routine practice	Reports of NCCP	Availability of funds & human resource

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