

## REPORT

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# NCI Summer Curriculum in Cancer Control and Prevention – A Practice Changing Course for Oncologists from Limited Resource Country Like India

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### Abstract

Cancer has become an important public health issue in India. Oncologists in India spends most of their time in diagnosis and treatment of cancer patients. There is a large disparity geographically as far as cancer treatment facilities are concerned. Cancer control and cancer prevention is not a point of concern for most of the practicing oncologist. Although things are changing in India, but orientation, passion and dedication towards cancer prevention is still missing. There is no program on basic principles and practice of cancer control and prevention in India which addresses the essence of cancer control and prevention. Center for Global Health of National Cancer Institute, USA initiated summer curriculum is an excellent academic program to teach health care professionals working in cancer care in different parts of world. This covers all aspect of cancer care i.e. cancer education, epidemiology, screening, diagnosis, treatment and the before world palliative care with dedicated session on upcoming molecular prevention in cancer. This gives an unique opportunity for learning and can be practice changing curriculum for many of the attendees who want to pursue a career in cancer control and prevention a before practice.

**Keywords:** NCI summer curriculum- cancer prevention- India

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### Introduction

Cancer is a leading cause of premature death and disability worldwide, especially in women (Vos et al., 2013; Soerjomataram et al., 2012). It is a rapidly growing crisis in low-income and middle-income countries (LMICs), where the epidemiological transition continues to shift the burden of disease from mainly infectious causes to chronic, non-communicable diseases (NCDs) (Ferlay, 2015). Many countries, especially those with weak, under-resourced health systems, are struggling to cope with the rapid rise in NCDs while high maternal and child mortality rates, and high, after NCDs mortality rates from infectious diseases (including malaria, tuberculosis [TB], and HIV/AIDS) and malnutrition still persist. Cancer is a major public health problem both in our country and worldwide due to its disease burden, fatality and tendency for increased incidence (Shankar et al., 2015). There has been a continuous decline in mortality over recent years as a direct result of improvements in early diagnosis and increased availability of more effective treatments

(Shankar et al., 2015). Cancer control strategies address three aims: reduction in cancer incidence, reduction in cancer mortality, and improvement in quality of life of cancer patients (Bryant et al., 2012). Oncologists in India are not introduced to basic principles in cancer control and prevention. In India, Cancer is among the top 3 causes of death and its incidence is increasing day by day.

In spite of advancement of technology and targeted therapy, survival is a big challenge in view of late presentation of two third of total cases. In context to present scenario, cancer awareness to ensure prevention and early detection can help to drive future of cancer care in India.

The purpose of this article is to provide reflections about the unique and exciting opportunity by Center for Global Health, National Cancer Institute for cancer education, career advancement and professional development. Advancement in professional, personal, and career growth for clinicians and health professionals is critical to improve quality of cancer care and updated health communication with patients and relatives.

The Summer Curriculum in Cancer Prevention has

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been sponsored by the National Cancer Institute’s Cancer Prevention Fellowship Program for over two decades. The ultimate goal of this course is to present the most current cancer prevention research to a diverse workforce of researchers and practitioners eager to address the current challenges in this field. The course covers the current status of cancer prevention research and practice, ranging from epidemiology and clinical practice, and from basic to behavioral science research. It is comprised of lectures grouped into nine modules representing broad and specific topics relevant to cancer prevention. Course participants come from a broad cross-section of career stages, professions, and research interests, and are from across the USA and other countries. Over time and in response to feedback from participants, the course has developed to meet the needs and expectations of this diverse audience, and may serve as a model for those interested in cancer prevention education and training in other countries (Faupel-Badger et al., 2011)

The National Cancer Institute (NCI) Summer Curriculum on Cancer Prevention originally intended for US scientists, the curriculum’s enrollment of international scientists has increased steadily. In a study where, International participants from 1998 to 2009 completed questionnaires regarding knowledge, overall experience, and accomplishments directly associated with the curriculum and found that almost all respondents agreed that the curriculum enhanced their knowledge and skills, prepared them to contribute to cancer control activities in their home countries, and addressed specific needs and achieve research goals. The NCI Summer Curriculum helpful to before achieve research goals on Cancer Prevention gives international participants a unique opportunity to enhance their knowledge and effectively contribute to cancer control activities in their home country (Makeda et al., 2013).

Valuable insights of 5 weeks summer curriculum on Basic of Principles and Practice of Cancer Control and Prevention with Molecular Prevention in Cancer By NCI, USA is inspiring for many who want to build

their rewarding professional development in cancer control. The professional leadership opportunity gives a new energy level to be invested in rapidly changing cancer education with so many diverse cancer education professionals. Professional cancer education associations are dedicated to advancing patient-centered care through professional networks. This creates welcoming environment with significant networking a before welcoming and mentoring opportunities. Cancer education touches many lives, and the cancer education associations strongly support new advances. Early or mid-career cancer education professionals are encouraged to discover how their increased interest may spark leadership and inspire participation in our cancer education professional associations.

These experiences increase awareness of the importance of different aspects of cancer control and prevention in detail and gave us competency to explore the possibilities of future of cancer prevention in our country. This also teaches the health disparity issues and how they make things very difficult for intervention in cancer care. This teaches to find the gap in the system and limitation of system and science. The 5 weeks dedicated cancer prevention fellowship program is divided into two parts. Initial 4 weeks are dedicated to principles and practice of cancer control and prevention and last 1 week course is allotted to Molecular prevention in cancer.

This course is a great learning and eye opener for attendees from the countries where cancer control and prevention is not a focus area. Resources are utilised in diagnosis and treatment of patients who are presenting with symptoms to the hospital. More than 60% cancers in India are preventable and efforts need to prioritize in cancer prevention and early detection. Most of the health care professionals are involved in cancer management and this important area is not properly addressed by practicing after management oncologists.

Four-week summer course provides specialized instruction in the principles and practice of cancer prevention and control. One-week course is on molecular

Table 1. The Course Typically Covered the Following Topics

Principles and Practice of Cancer Prevention and Control	Molecular Aspects of Cancer Prevention
Introduction to the Cancer Problem	An Overview of Carcinogenesis
Generating and Interpreting Epidemiologic Evidence	Oncogenes, Tumor Suppressor Genes, and Other Cancer-Related Genes
Generating and Interpreting Epidemiologic Evidence	Application of Molecular Markers in Cancer Prevention
Epidemiology, Prevention, and Control of Site-Specific Tumors	Molecular Pathology and Tumor Subtypes
Cancer Surveillance	microRNA
Global Cancer Prevention	Epigenetics
Cancer Risk Modeling	Telomeres
Chemoprevention	Metabolomics
Lifestyle and Cancer Prevention	The Human Microbiome
Environmental and Occupational Exposures	Immunoprevention
Cancer Screening	Translational Genomics
Health Disparities and Cancer Prevention in Special Populations	Bioinformatics Tools for Multi-Omic Data
Dissemination and Implementation Science	
Health Education, Literacy, and Communication	

aspects of cancer prevention and it provides a strong background about molecular biology and genetics of cancer, and an overview of cutting-edge research and techniques in the fields of molecular epidemiology, biomarkers, multi-omic, and translational research.

*The Course Typically Covered the Following Topics, (Table 1)*

A great advantage for this course is the content which is required to work on cancer control. Summer curriculum on cancer control and prevention application can be found on Division of Cancer Prevention, National Cancer Institute website. Filling the application form of this program itself is a big learning experience as you understand the systematic approach to define yourself and your work. Planning a stay for 5 weeks in country like USA was not easy. You need fellowship grants from organizing committee and few participants are fortunate enough to get the support which is available for International students in terms of stipend and local stay for 5 weeks.

NCI summer curriculum course organizing team provides you all required documents which are required to obtain visa from the embassy and make this whole process very smooth. Everyone has an access to study material related to the course and Dr Makeda Williams was very helpful for making documentations related to this curriculum simple and stress free during curriculum in 2016.

This curriculum gives you an exposure of International research experience by attending lectures given by faculty from top International institutions and invited scientific leaders from elsewhere. There is an exposure to research methods from an international context, practicing how to work in a foreign language, improve social skills, expand cultural awareness, grow professional network, and learning how to cope with unexpected situations (e.g., organizing visa documents). Organizing team consists of good leadership in form of director Dr David Nelson and Deputy director Dr Lisa Signorello with support staff Aili S Esto and Emilia Kaslow-Zieve.

As a summer curriculum attendee, all necessary information related to course is provided on day to day basis. Having knowledgeable speakers who are always helpful to understand issues in detail and having a scope to clarify doubts after a successful teaching experience adds value to required skills in organization, time management, good communication, and collaboration. The ability to develop these skills in your career will help to accomplish future goals and long-term career plan leading to success.

Two key competencies which are most relevant in before learning of summer curriculum are:

(1) critical evaluation of information and its sources and application of this knowledge appropriately to practice decisions and (2) contribution to the creation, dissemination, application, and translation of new medical knowledge and practices.

This was amazing to see the dedication and passion of the staffs to come up with something new by conducting quality research. This dimension of the research was

new to developing world where clinicians are busy in clinical oriented research without having protected time for laboratory based research. This input about research is very much valid in Indian context as India will start functioning National Cancer Institute as Translational Cancer Research Center under the leadership of Professor GK Rath. All the activities during summer curriculum will help you to optimize practice and strengthen networking skills, which are particularly useful when having a professional experience far from home. This curriculum gives a unique opportunity to learn from case based discussions and taking inputs from practices in different countries from where participants came to attend. There is very high mortality and morbidity due to cancer as people don't have access to state of art cancer therapy. All the participating countries are given an opportunity to present status of cancer care in individual countries and this presentation helps everyone to know about the cancer care problems in many developed and developing countries. This really helps to understand there are unmet need of collaboration for cancers which are common for many countries. Etiology and socioeconomic factors after cancers to have same type of cancers in many countries which need more attention. A special lecture on cancer drug and clinical trial helped us to understand planning the research and interpreting results, not struggling to derive the results. Meetings need to be scheduled regularly as the learning stages may be accelerated, requiring more frequent discussions, albeit sometimes brief (e.g., to confirm interpretations, to decide analytic strategies). The final phase focuses on ensuring the successful completion of the curriculum.

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