



How Cancer Care Developed in India in 75 Years of Independence—Tamil Nadu Scenario

E. Hemanth Raj¹

Received: 6 December 2021 / Accepted: 11 January 2022 / Published online: 24 January 2022
© Indian Association of Surgical Oncology 2022

Abstract

Tamil Nadu has always been in the forefront in medical care. This is also true in the field of cancer care. The predecessor of present Bernard Institute of Radiology (BIR) the Government X-ray Institute Chennai, Premier Radiological Institute and Cancer Hospital, Chennai and CMC Vellore Radiation oncology unit were all started pre independence. In the first 25 years after independence, other centres like Cancer Institute (WIA) Adyar, Chennai; Valavadi Narayanaswamy Cancer Centre Coimbatore and Government Erskines (Rajaji) Hospital, Madurai started functioning. BIR started the first diploma and degree course in radiotherapy. Asia's first cobalt therapy unit commenced function from the Cancer Institute in 1957. The country's first nuclear medicine department, medical physics department, paediatric oncology department and medical oncology department were all started in the Cancer Institute. Its founder Dr. Muthulakshmi Reddy was a great social reformer. She and her son Dr. Krishnamurthi were keen followers of Gandhiji. In the next 25 years, two new state government centres came up. The first linear accelerator in the country started functioning in the Cancer Institute. MSc (Medical Physics), MCh surgical oncology and DM medical oncology courses were started at the Institute. Presently, there are about 100 centres functioning in the state with more than 300 qualified surgical, medical and radiation oncologists. Apollo cancer hospitals have contributed for some facilities like PET scan and proton therapy units for the first time in the country. There are about 12 hospital-based cancer registries in the state. Tamil Nadu cancer registry covers the entire 77 million population of the state. Population census-based rural free cancer screening program is conducted in four districts by the Cancer Institute. Jeevodaya is the country's second hospice facility started functioning in the suburb of Chennai from 1990 onwards. At present, there are several centres spread across the state involved in palliative care.

Keywords Tamil Nadu · Cancer care · India · Cancer treatment evolution · 75 years · History of cancer treatment

Tamil Nadu has always been in the forefront of medical care in the country. The unique feature is the development of medical facilities across the entire large state and not just centred around few main cities. Another important feature is the relative robust reach of the Government health delivery system going down until the primary health centres and the Chief Minister's comprehensive health insurance scheme. Last but not least is the extensive role played by private health care facilities in various hues across the nook and corner of the state from high-end corporate to not for profit organisations to totally charitable

institutions. Some of these NGOs including the charitable institutions are the best, if not compete with the best anywhere in our country in offering global standards of health care and medical education. This phenomenon is especially true in the field of cancer care in the state of Tamil Nadu. I will capture this under various aspects of cancer care like treatment, diagnosis/research, education, tumour registries, prevention, screening and palliative care.

Treatment

Along with the development of treatment facilities, certain landmark features of education in the field of cancer and few areas of diagnosis/research aspects will also be covered as they appear integrated.

✉ E. Hemanth Raj
e.hemanthraj@gmail.com

¹ Cancer Institute (WIA), Adyar, Chennai, India

Pre Independence Facilities

Cancer-specific treatment facilities commenced in three places in Tamil Nadu before independence. They are the Government X-ray Institute, Chennai in 1924, the Premier Radiological Institute and Cancer Hospital, Chennai in 1935 and CMC Vellore Radiation Oncology Department in 1939.

Government X-ray facility actually started in the year 1900 with an X-ray unit in Madras within 5 years of the German physicist Wilhelm Conrad Rontgen discovering it in November 1895 (http://www.mmc.ac.in/mmc/content_page.jsp?sql=rd&sqf=453, <https://www.barnard.in/gt/about-bir>). This was the first civilian X-ray use in Asia with Dr. Rao Sahib M. Govindarajulu Naidu as Assistant Surgeon in charge. In 1920, Capt. T W Bernard O B E was appointed as radiologist to Government of Madras. In June 1921, 24 radiographs were accepted for the Royal Society Exhibition in London. In 1922, this facility was upgraded as X-ray Institute. In 1924, a 200-kV X-ray unit was installed, first double coil in the East. With this, cancer treatment commenced and about 3465 treatment sittings were given to patients. In 1927, radium department was started in the X-ray Institute. About 517 mgm of radium in tubes and needles of various sizes and shapes came from London. In 1934, the Governor Sir George Stanley renamed it as the Bernard Institute of Radiology (BIR) and inaugurated the 400-kV X-ray unit (Maximar GE), first in the East. Convergent beam therapy and pendulum therapy (moving beam therapy) were practiced. Mr. Arthur Ponnaiah was appointed as the radiation safety officer and was later redesignated as the first physicist. BIR was acclaimed by the Medical and Lay press in the UK and the USA as providing one of the best radiological services in the world (ref. BJR June 1934 issue).

In 1934, Diploma in Medical Radiology (DMR) was started first in Asia (combined radiodiagnosis and therapy). In 1936, the first Certified Radiological Assistant (CRA) course and Dark Room Assistant (DRA) course were started for the first time in Asia.

Premier Radiological Institute and Cancer Hospital was established in 1935 as a private X-ray Institute in Madras by Dr. Kalpathi Rama Iyer Doraiswami.

Christian Medical College (CMC), Vellore commenced its cancer treatment facility in 1939 with the formation of radiation oncology unit by Dr. Ida Belle Scudder, niece of the founder of CMC Vellore Dr. Ida Sophia Scudder (<https://www.cmch-vellore.edu/Sites/Publications/Change%20age%20-%20Ida%20B%20Scudder.pdf>, <https://givecmcv.org/cmch-idab-scudder>). India's first College of Nursing offering degree course was started here in 1946 (<http://home.cmchevellore.ac.in/cmchevellore/milestones.html>).

First 25 Years After Independence (1947–1971)

During this period, few other centres came into existence including Cancer Institute (WIA). In 1948, the Premier Radiological Institute and Cancer Hospital got its 200-kV Deep X-ray unit for treatment followed by Theratron Junior Telecobalt in 1962. Dr. K R Doraiswamy was conferred Padma Shri for his pioneering work.

First DMRD and DMRT courses were introduced in place of DMR in 1962 by BIR. In 1963, MD Radiology (combined radiodiagnosis and radiotherapy) course was started here as the first in Asia.

BIR commissioned the Gammatron-2 telecobalt unit (M/S Siemens) in 1967.

Government Rajaji (Erskines) Hospital, Madurai was established in 1842 and is a major medical facility in Southern Tamil Nadu with a medical college. In 1952, cancer treatment started with Radium 226 radioactive source (http://www.mdm.ac.in/mdmc/content_page.jsp?sql=radiotherapy58&sqf=1007). Deep therapy X-ray unit started functioning here in 1965.

Cancer Institute (WIA) had its foundation stone laid in 1952 by the then Prime Minister Pandit Jawaharlal Nehru and the hospital was inaugurated in 1954 by Shri C D Deshmukh then Union Finance Minister [1]. This was the culmination of several years of very hard work by Dr. Muthulakshmi Reddy, the first woman doctor in India. Dr. Reddy lost her sister to rectal cancer in 1923 as no proper treatment was available in our country at that time. In 1925, during her visit to London she witnessed the result of good surgery by Sir Ernest Miles in curing rectal cancer at Royal Marsden Hospital. She decided then to start a cancer hospital to take care of patients across all socioeconomic strata in our country. When her son Krishnamurthi graduated as a doctor and then a surgeon, she sent him abroad in 1947 for training. He returned in 1949 and headed the cancer unit in Govt. General Hospital and Madras Medical College. Subsequently, he joined his mother in starting the Cancer Institute.

In 1927, Dr. Muthulakshmi Reddy was nominated to the Madras Legislative Council and in a short while was elected as its Vice President. She became the first woman in the world to preside over a legislative body. Social reforms were close to her heart. She brought laws to abolish the Devadasi system, act for immoral traffic control, act to prevent cruelty to children, bill for raising age of consent of girls for marriage, etc. When the news of Mahatma Gandhiji's arrest following Dandi March came, she immediately resigned from the Council. Dr. Muthulakshmi Reddy established the Avvai Home in 1930 for destitute women and children which continues to do the service till date. It is not a wonder that her name found a place on the flag raised from the ramparts of Red Fort on our Independence Day, 15th of August 1947 by

Pandit Jawaharlal Nehru. Her son Dr. Krishnamurthi had also participated in the freedom movement as a medical student and during one of the protest marches was arrested and jailed. He spent time in Gandhiji's Sewagram Ashram in Wardha district of Maharashtra. That is where he met his future wife Miss. Mandakini, who was from Nagpur.

Dr. Krishnamurthi introduced formal cancer surgeries in the institute for the first time including head and neck surgeries, which was a significant milestone. The Institute's radiation treatment was started with a Deep X-ray unit 250 kV Watson XT 1. Asia's first cobalt teletherapy unit was installed at the Institute in 1957, Eldorado – A, a gift from Atomic Energy of Canada Limited. With this, India passed into the super voltage era in radiotherapy. Medical Physics department was started for the first time in India. In the same year, the country's first nuclear medicine department was started. In 1957, railway concession was extended to all cancer patients in India by the concerned Union Ministry on the representation made by Dr. S Krishnamurthi. The Institute realized the importance of combined modality treatment as early as 1958 and introduced the same for the first time in oral cancers. This was declared as 'an innovative approach' in the International Year Book of Cancer (1964). India's first Paediatric Oncology Centre was inaugurated by Mrs. Indira Gandhi in 1960. Two pioneering radiodiagnostic techniques were introduced in the Institute. First is the technique of lymphangiography for lymphoid tumours in 1960 and mammography technique for detecting occult breast tumours in 1965.

In 1961, the second cobalt unit Picker C 5000 was donated by Mr. John McConnel. The third unit Eldorado 6 was also donated by him and installed in 1964.

In 1959, a teletherapy head was designed at the Cancer Institute and the prototype product was approved by Dr. Homi Bhabha. It was aided and fabricated by Atomic Energy Establishment, Trombay after logistic delays. It is the first indigenously built caesium-137 tele-curie-therapy unit. In 1968, the Cancer Institute also designed India's first indigenous therapy simulator with a grant from the Government of India. The International General Electric (IGE) company of India fabricated it in their Poona factory under the guidance of the physicists from the institute and the first unit was successfully installed in the institute in 1969 at one-third the cost of the imported simulator. Subsequently, IGE marketed it in India and across Asia.

Cancer Institute was recognized for Ph.D and D.Sc in Oncological Sciences by Universities of Madras and Kerala in 1965.

Railway concession which was extended to cancer patients in 1957 was very cumbersome to obtain and was of no practical value. It took repeated representations, after which it finally fructified in 1969 during a visit by the then Hon. Railway Minister to the Institute when the Minister

kindly agreed to simplify the whole procedure of concessional travel by cancer patients.

In 1971, the country's first medical oncology unit started functioning along with a blood component unit at the Cancer Institute. In the same year, the then Union Finance Minister Shri Y B Chavan visited the Institute. He was moved by the sight of the bright children in the paediatric ward. An appeal was made by Dr. V Shanta for customs duty exemption for life-saving anti-cancer drugs and the Minister passed necessary orders for the same on his return to New Delhi.

Valavadi Narayanaswamy Cancer Centre (VNCC) in Coimbatore was inaugurated by Smt. Rajkumari Amrit Kaur, then Union Health Minister, in April 1957 (<http://www.gknhospital.org/specialties/oncology/>). It is a part of the G Kuppaswamy Naidu Memorial Hospital (GKNM) which by itself was functioning from 1952. It started as a single cancer ward and soon had a cancer block and in 1970–1971 got its first cobalt treatment unit (Siemens Gammatron).

Dr. Rai Memorial Medical Centre was established in the year 1962 by Dr. K M Rai, retired Professor and HOD of Bernard Institute of Radiology at Madras Medical College (<http://www.drraimemorialcancerinstitute.com/>).

1972 to 1996

During this period, many more new centres came up across the state both in government and private. Government Arignar Anna Memorial Cancer Hospital came up in a campus in Karapettai close to Kancheepuram in 1979 and got affiliated to Dr. MGR Medical University in 1981 (https://www.university.youth4work.com/gamch_government-arignar-anna-memorial-cancer-hospital). Cancer ward was commissioned in 1985 in Govt. Royapettah Hospital, Chennai (<https://www.thehindu.com/news/cities/chennai/cancer-block-at-royapettah-gh-to-open-soon/article4351249.ece>). New cobalt units and TPS systems were added to BIR and VNCC, also brachytherapy facilities in them and in Premier Radiological Institute and Cancer Hospital.

Cancer Institute was declared by the then Union Health Minister Dr. Karan Singh as a 'regional centre of cancer treatment and research for the Southern Region' in December 1974. India's first linear accelerator was installed in 1976 at the Cancer Institute. This was an aid from DANIDA and this was obtained with great difficulty after a period of years taken wading through governmental bureaucracy. The Netherland-India Friendship Association gifted the second accelerator in 1979. During the period of the late 1970s to early 1990s, various pioneering trials using different radiosensitising agents, hyperbaric oxygen, hyperthermia and intraoperative radiotherapy were done at the Institute.

Anna University and Department of Atomic Energy recognized the Institute for the M.Sc (Medical Physics) in 1981, the first in the country and the only one for a long period.

The Cancer Institute's students after graduation were in great demand in various centres across the country. Medical Council of India recognized first super speciality MCh course in Surgical Oncology and DM course in Medical Oncology was started at the Institute in 1984 affiliated to Tamil Nadu Dr. MGR Medical University.

The country's first medical laser treatment in endoscopic and open surgical procedures was started in 1985 (MBB Nd YAG). Limb salvage surgical procedures was started in 1987 for the first time in India and very soon custom-made prosthesis became a standard of care in bone tumours. This pioneering feat in avoiding amputation for adolescent patients gave immense medical and emotional satisfaction both to the patients and doctors at the institute. Cytogenetics unit and molecular oncology department started in the early 1990s at the Cancer Institute.

CMC Vellore radiation facility was augmented with a betatron in 1978 and linear accelerator in 1993 (<http://home.cmcvellore.ac.in/cmweb/milestones.html>). Their cancer surgeries were managed by site-specific surgical specialities. South India's first bone marrow transplant was done in 1986 (<https://www.cmch-vellore.edu/2col.aspx?ptype=CONTENT&pid=P171127016%20&mid=M171127124>). During the same period, diagnostic molecular biology tests for blood disorders were also started.

First corporate cancer hospital in India was started in Chennai as Apollo Speciality Hospital in 1994 (https://www.apollohospitals.com/apollo_pdf/pdf-the-journey-of-apollo-hospitals.pdf).

1997 to 2021

During this period, fast paced developments took place with extension of cancer treatment facilities across the state, more so in the districts away from Chennai. Several centres came up in Tiruchirappalli, Madurai, Coimbatore, etc. both in governmental and nongovernmental sectors. Several tier II and III cities and towns started cancer treatment facility. Some of these offered wholesome care with all three major clinical facilities, whereas some had one or two treatment facilities with mechanism to outsource the remaining. The treatment centres were either a part of a large general hospital/medical college facility or stand-alone cancer centres. The nongovernmental sector included at one end charitable not for profit institutions and at the other end large corporate hospitals. All the major centres discussed earlier like Cancer Institute, VNCC, CMC Vellore and BIR added newer treatment facilities including high-end radiotherapy units. VNCC (GKNM hospital) got NABH Accreditation in 2009 (<http://www.gknmhospital.org/awards-honor-accreditation/>).

Medical council recognized DM haematology course commenced from 1999 in CMC Vellore for the first time in

India (<https://www.cmchaematology.org/dm-haematology.php>).

In 1992, D2 and D3 lymphadenectomy surgical procedures for gastric cancers were started for the first time in our country at the Cancer Institute. The Institute indigenously developed and built a remote after loading brachytherapy unit (CITRON) which was installed and was functional between 1995 and 1998 until the time when the Microselectron unit was obtained. A hereditary cancer OP is regularly functioning for about 15 years now. Tumour bank was established in 2006. In 2007, molecular oncology department was declared as Centre of Excellence by the Department of Science and Technology, Government of India. This department has applied for patent rights for some of the products it has developed.

M Phil in psycho-oncology affiliated to Madras University was started in 2011, for the first time in India at the Institute.

Hyperthermic intraperitoneal chemotherapy (HIPEC) following extensive peritonectomy/cytoreductive surgery was started for certain peritoneal surface malignancies in 2011. In the year 2014, Cancer Institute was recognized as State Cancer Institute (SCI) by both Central and State Governments. A comprehensive bone bank facility has been established in 2019. This will take care of the needs of other hospitals also.

PET scan facility was started in Apollo Speciality Hospital in 2005. This facility was initially started in Hyderabad centre as a first in South East Asia before it was made available in Chennai. Apollo Hospital Chennai got accredited by Joint Commission International (JCI) in 2006 (https://www.apollohospitals.com/apollo_pdf/pdf-the-journey-of-apollo-hospitals.pdf). DNB Surgical Oncology was started as one of the earliest in the country in Apollo Speciality Hospital, Chennai in 2006. Robotic surgery was started for the first time in the state in 2011 in Apollo, Chennai. Apollo Proton Therapy Centre was established as a first in our country in 2018 in Chennai.

Bone marrow transplantation and its various types have become a standard of care in major centres, as well as complicated state-of-the-art oncological surgical procedures including complex reconstructions, advanced diagnostic and therapeutic endoscopic work and interventional radiological procedures. During this period, several excellent liver transplant facilities have come up in the state.

Presently, there are roughly about 100 centres in the state offering various levels of oncological service. It is very difficult to enumerate as there are even centres offering services by visiting consultants and there is a lot of overlapping. In Tamil Nadu state, the number of qualified surgical oncologists may be about 135, medical oncologists about 125 and radiation oncologists about 300.

Tumour Registries, Prevention and Screening

Treatment of cancer is intertwined with a good cancer registry. Cancer is a disease which has a tendency to recur. There are various modalities of treatment and in various degrees of combination called multimodal treatment. With time, goal posts keep changing, so also the standard of care. In the present day, there is an explosion of knowledge available and they are all easily accessible in the digital world. Registries play an important role in helping us to know the impact of our treatment, whether it is useful or not, burden of the disease, trends over a period of time, etc. which helps us to focus and do course corrections. In large cancer centres, they form a part of the epidemiology department. There are different types of registries addressing specific issues. They can broadly be classified as hospital-based cancer registry (HBCR), population-based cancer registry (PBCR) and special registries.

Hospital-based cancer registry is the commonest and it is an essential part of a good cancer treatment centre. Cancer Institute realized this from the beginning and has a HBCR dating back to 1955. It contains all patient-related, disease-related and investigation- and treatment-related information. In addition, probably most important in cancer treatment, it contains follow-up details of the patient. Without good follow-up, our data will be incomplete. At the Institute, there are mechanisms like collecting multiple addresses of close relatives, neighbours, landline phone if available, etc., and our social workers were doing postal card follow-up. This postal card has a self-addressed return card. In present times, the follow-ups have become relatively easy with the advent of mobile phones, emails, etc. All along the follow-up at the Institute has been hovering between 80 and 90% and in comparison with the other registries across the nation this has been consistently the best. In trial or other special circumstances, every effort is made to achieve 100% follow-up. Another important feature of the HBCR in the Cancer Institute is that it has lifetime follow-up data.

Indian Council of Medical Research (ICMR) realized its importance and started the National Cancer Registry Program incorporating all the registries, both HBCR and PBCR. Presently, there are about 12 HBCR functioning in Tamil Nadu and most of them were started in the last decade.

Population-based cancer registry was started at the Cancer Institute in 1982 covering Chennai city, the then Madras and it is called Madras Metropolitan Tumour Registry (MMTR). In 2003, a rural population-based registry was started by the Institute in Dindigul district which gave a good picture of the rural incidence and trends for cancer which were different when compared to the urban MMTR. A special hereditary cancer registry was

functional between 2004 and 2007 and a childhood cancer registry in 2012.

In 2012, the Tamil Nadu Cancer Registry Project was started by the Cancer Institute along with the State Government. This is a landmark achievement in the sense that it covers the entire population of a large state like Tamil Nadu having about 77 million people (https://ncdirindia.org/All_Reports/State_Factsheet_21/Factsheet/FS_Tamil_nadu.pdf). This in all likelihood is the largest population-based registry in the world today. Data on cancer is available from every nook and corner of the state. This also enormously helps in giving the factual position on the incidence of cancer in a particular region or zone when a fear is raised about increasing incidence surrounding an industrial complex, atomic energy plant, etc.

Analytical epidemiology work was done in the 1990s at the Institute followed by molecular epidemiology work around the turn of the century. A unit called preventive oncology (research) was also started in 2013.

Resource Centre for Tobacco Control (RCTC) at the Cancer Institute (WIA), Chennai was inaugurated in December 2001 with the support of the WHO and the Ministry of Health and Family Welfare, Government of India, and has been offering free tobacco cessation services to tobacco users across the country. This centre now has multivariate activities like awareness, advocacy, education, cessation and tobacco survey. It has also spread its activities to Madurai and works along with the State Government by providing psycho oncology manpower. An alternate livelihood program has been started by the RCTC for Beedi rollers in the form of a skill development centre at the Central Beedi Hospital, Tirunelveli in association with the Labour Welfare Department, Government of India, and women are trained in handicrafts, wig making and tailoring. It has also done a survey of tobacco cultivators in Oddanchatram, Dindigul for crop diversification. Sensitization programs and awareness talks have been conducted to create awareness among the farmers to shift to alternate crops.

State Government has a tobacco control cell with members drawn from governmental and NGOs including Cancer Institute. Mary Anne Charitable Trust (MACT) founded by Mr. Cyril Alexander is very active in the field of advocacy. Tamil Nadu Peoples Forum for Tobacco Control started in 2010 is a confederation of various like minded organisations including MACT, Cancer Institute and Indian Dental Association Chennai Chapter.

A dedicated exhibition bus has been created by the Cancer Institute to spread the factual information about cancer care to the general public. This bus will be travelling across the entire state of Tamil Nadu.

Screening for cancers helps in early detection of cancers, downstaged and suitable for better treatment outcomes. More importantly, it also identifies precancerous lesions which can

be effectively tackled by relatively simple means. With this knowledge gained as early as 1961 by large-scale pioneering opportunistic cancer screening program in the then Chengleput district, Cancer Institute has embarked on a series of screening programs. A pioneering WHO program sponsored by NORAD ‘Kanchipuram Pilot Project’ was started in Kanchipuram under the State Government’s purview from 1969. This work was initiated by Dr. Shanta through the Cancer Institute in 1967 following the Chengleput experience. Since WHO programs are all necessarily executed only by the concerned governments, it was passed onto the State Government for conducting the pilot project. Excellent facilities were available. Unfortunately, the compliance was poor. The sponsorship came to an end in 1979.

From 1989 onwards, Cancer Institute embarked on a series of innovative screening programs along with either ICMR or State Government or Central Government until 2002, like a feasibility study, district screening program and a modified district screening program respectively. From 2003 onwards till date, regular cancer screening is being done by the institute in Chennai and three districts surrounding Chennai and about 84,000 people, mostly women in the age group of 30 to 60 years, have been screened totally free. From 2014, a milestone effort in the form of systematic population census-based cancer screening for cervix, breast and oral cavity has been started in Viluppuram taluk, followed by Gummidipoondi taluk in 2016 and Pudukottai and Thiruvannamalai taluks in 2018 and about 86,000 people have been screened till date, again totally free. HPV screening for cervix is being resorted to in most of these programs.

The State Government through its health systems project conducted opportunistic cancer screening across the state by Directorate of Medical and Rural Health Service. Udhavum Ullangal, a charitable NGO, is doing regular awareness campaigns and cancer screening in Tirunelveli and Thoothukudi districts from 2011 onwards. It has to date screened more than 40,000 people. Nellai Cancer Care Centre (NCCC), a unit of Udhavum Ullangal, is arranging treatment for detected precancers and cancers [2]. An IARC-led major cluster randomised study to prove the efficacy of VIA was done in Dindigul district of Tamil Nadu [3]. Ambilikai hamlet in the same district was also a participant in another landmark randomised trial led by IARC to determine the impact of three vs two vs single dose of HPV vaccination [4].

Palliative Care

Jeevodaya is a charitable organisation which started Tamil Nadu’s first and India’s 2nd second hospice in Mathur, Manali near Chennai in the year 1990 [5]. It caters to all cancer patients irrespective of their socioeconomic status. The Sudharshana Pain and Palliative Care Centre also started functioning in Tiruchirappalli from 1991 (<https://in.linkedin.com/in/mohanasundaram-thiagarajan-ab036>

73a. The Dignify and Empower the Ailing and the Need (DEAN) foundation was inaugurated in 1998 both as outpatient and home care program (<https://deanfoundation.org/our-begining.php>). In 2000, Laxmi Pain and Palliative Care started offering outpatient and inpatient services [6]. In the year 2001, VNCC Coimbatore started ‘Raksha’, a hospice cum pain and palliative care centre (<http://www.gknhospital.org/corporate-social-responsibility/raksha-hospice/>). Cancer Institute’s palliative OP services started in 2002. CMC Vellore started its palliative care services from 2003 onwards (<http://home.cmcvellore.ac.in/cmcweb/milestones.html>). Cancer Institute started home care facility in 2014. Its hospice, Mahaveer Ashray, started admitting patients from 2017 (https://bmfawards.org/founder_trustee.php). This is a totally free centre. At present, there are several organisations offering varying grades of palliative care services across the Tamil Nadu State.

Acknowledgements I wish to acknowledge with thanks the following members for their inputs: Dr. K Thayalan (BIR and Madurai GH), Dr. Sanjay Chandrasekar (Premier Radiological Institute and Cancer Hospital), Dr. Raghupathy Velusamy and Dr. Mohanraj (VNCC), Mr. Sankar Mahadevan (NCCC), Dr. Sundaram (independence movement association details) and all my colleagues from the Cancer Institute who patiently addressed my queries. Sincere attempt was made to collect all factual information. If anything has been missed out or is erroneous, it is inadvertent and may be pardoned.

The author declares no competing interests.

References

1. Five Decades of The Cancer Institute (WIA) – book published on the occasion of its Golden Jubilee, February 2004.
2. Vidhubala Elangovan, Shewade Hemant Deepak, Niraimathi Anandan K et al (2019) Call for systematic population-based cervical cancer screening: findings from community-based screening camps in Tamil Nadu. India. *Asian Pac J Cancer Prev* 20(12):3703–3710
3. Rengaswamy Sankaranarayanan, Pulikkottil Okkuru Esmey, Rajamanickam Rajkumar, et al. Effect of visual screening on cervical cancer incidence and mortality in Tamil Nadu, India: a cluster-randomised trial. www.thelancet.com Vol 370 August 4, 2007.
4. Partha Basu, Sylla G Malvi, Smita Joshi, et al. Vaccine efficacy against persistent human papilloma virus (HPV) 16/18 infection at 10 years after one, two, and three doses of quadrivalent HPV vaccine in girls in India: a multicentre, prospective, cohort study. www.thelancet.com/oncology October 8, 2021 [https://doi.org/10.1016/S1470-2045\(21\)00453-8](https://doi.org/10.1016/S1470-2045(21)00453-8).
5. <https://jeevodaya.blogspot.com/2013/08/palliative-and-hospice-care.html>. Accessed: 2021–11–09
6. <https://fundraisers.giveindia.org/nonprofits/lakshmi-pain-and-palliative-care-clinic> Accessed: 2021–11–09

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.