

# Siriraj Cancer Registry Since 1969: History and Current Situations

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Cancer registry is one of the most effective ways to reflect cancer epidemiology and health care management planning worldwide. With the standard format of data report that was established by WHO (World Health Organization) and other cancer associations such as IARC, AJCC etcetera, cancer incidence can be compared among countries and period of times. Hospital-based cancer registry and community-based cancer registry have different benefits for the health care system. The community-based registry will provide incidence and epidemiology information while the hospital-based cancer registry can have treatment outcome and work load statistics. Most of the universities or tertiary care hospitals should have completed standard cancer registry records.

Siriraj Hospital, Mahidol University, which has been established since 1888, functions as a medical school for around 300 graduated medical students a year, and an annual hospital service of 2.5 million OPD cases. As a tertiary hospital, we have one third of our staff taking care of cancer patients. Therefore, academic cancer activities have been merged into our everyday practices. The cancer registry of Siriraj Hospital has had a long history since 1969.

In 1959, the Taskforce Committee of Siriraj Cancer Institute had set up a Tumor Clinic to be the consulting center to diagnose, and treat cancer. The male surgical examination room at the old Out-Patient Building was used as a Tumor Clinic. Later on, with the increasing number of cancer patients, the Tumor Clinic increased the service to two days per week at 1 pm. on Monday and Thursday, whilst the female genital cancer was on Friday afternoon at the PV room of the old Ob&Gyn operating building which Professor Dr. Term Bunnag, Dr. Prasert Nilprapassorn, other staffs and Ob&Gyn residents attended the meeting during the first period.

## At the beginning

In 1969, The Academic Committee of Siriraj Cancer Institute had collected the statistic data of all cancer patients, and published by using the terminology and classification according to WHO-ICD Coding. The Tumor Registry has been published annually and distributed until nowadays.

Siriraj cancer registry contained all essential data of cancer statistics. It has presented the annual number of new cancer cases (incidence), site, age, sex and pathology by using International Classification of Diseases (ICD) standard. At the beginning, data processing was done manually but this has improved in the age of computerization.

With more than 40 years history, we have 2 major changes in data collection and evaluation processes.

## In the middle age

In 1979, cancer patient information was recorded in a data sheet and entered to a FOXPRO database program, written by our staff, Dr. Visut Vuthipruk. This program would recognize duplicate patients by entering hospital number (HN) of the patients to our cancer registry system. Although this system provided more accurate and reliable methods, but it still needed a lot of manual process to col-



**Fig 1.** The first standard cancer registry from Siriraj Hospital in 1969.

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**SIRIRAJ CANCER CENTER**

DATE \_\_\_\_\_ HN \_\_\_\_\_ SN \_\_\_\_\_ RT\_NO \_\_\_\_\_ POSTCODE \_\_\_\_\_

NAME \_\_\_\_\_ SURNAME \_\_\_\_\_

ID \_\_\_\_\_ AGE \_\_\_\_\_ SEX \_\_\_\_\_ SMDW \_\_\_\_\_ RACE \_\_\_\_\_ RELIG \_\_\_\_\_ OCCUP \_\_\_\_\_ BDATE \_\_\_\_\_

ADDRESS \_\_\_\_\_ MOO \_\_\_\_\_

TUMBOL \_\_\_\_\_ AMPUR \_\_\_\_\_ CHANGVAT \_\_\_\_\_ ACODE \_\_\_\_\_

DIAG \_\_\_\_\_ SITE \_\_\_\_\_ DCODE \_\_\_\_\_

PATHO \_\_\_\_\_ GRADE \_\_\_\_\_ GROSS \_\_\_\_\_ SIZE \_\_\_\_\_ PCODE \_\_\_\_\_

INVASION \_\_\_\_\_ NODE \_\_\_\_\_ METAS \_\_\_\_\_ TNM \_\_\_\_\_ STAGE \_\_\_\_\_

TREAT\_SU \_\_\_\_\_ TREAT\_RTIT \_\_\_\_\_ TREAT\_CT \_\_\_\_\_ TREAT\_HD \_\_\_\_\_ TREAT\_JM \_\_\_\_\_ TREAT\_OTHER \_\_\_\_\_ TREAT\_UNK \_\_\_\_\_

LASTSEEN \_\_\_\_\_ STATUS \_\_\_\_\_ COMMENT \_\_\_\_\_

Occupation : 1 = Janitor, 2 = Farmer, 3 = Housewife, 4 = Student, 5 = Official, 6 = Employee, 7 = Guard, 8 = Laborer, 9 = Manager, 0 = unknown  
 Race : 1 = Thai, 2 = Chinese, 3 = other, 4 = unknown  
 Religion : 1 = Buddhist, 2 = Islam, 3 = other, 4 = unknown

**Fig 2.** Data record sheet in the middle age Siriraj cancer registry.

lect the data which was time consuming. Patients' name and diagnosis were collected from the tumor clinic, radiation clinic and oncology clinic as well as Pathology Department. Each step of data entering process, which included patients' data collection from clinics, patients' names listed, OPD card searched, computer entry and selection, was performed by our staff manually. These time consuming processes took a lot of human resources and risks to have human errors. Furthermore, the program could not support our purpose to identify revisiting patients who came with recurrence, metastasis or second primary cancer.

**Current situations**

The CanReg<sup>®</sup> program for cancer registry that has been used worldwide did not support our hospital purpose, due to the complexity and large amount of cancer patient services. Therefore, in 2010, a web-based computer program was created to overcome the disadvantage of the previous version of the Siriraj cancer registry program. The Siriraj web-based computer program has two main breakthroughs. The first is the approval function for cancer specialist,

The screenshot shows a web-based data entry form for a cancer patient. The form includes fields for patient identification (Name, HN, SN, RT\_NO, POSTCODE), demographic information (Age, Sex, SMDW, Race, Religion, Occupation, BDATE), and clinical data (Address, Tumbol, Ampur, Changvat, Acode, Diag, Site, Dcode, Patho, Grade, Gross, Size, Pcode, Invasion, Node, Metas, TNM, Stage). There are also fields for treatment details (Treat\_SU, Treat\_RTIT, Treat\_CT, Treat\_HD, Treat\_JM, Treat\_Other, Treat\_Unk, Lastseen, Status, Comment). A table below the form displays a list of treatment records with columns for 'Treat ID', 'Treat Date', 'Treat Type', 'Treat Status', 'Treat Description', and 'Treat Comment'. The interface is in Thai and includes a header with the Siriraj Cancer Center logo.

**Fig 3.** Current web-based Siriraj cancer registry which provides approval function by specialist and supports multiple cancers, metastasis and recurrence entries.

which can be performed via intranet, after data entering process from coder. The second is the database design that supports multiple cancers records for a patient and metastasis or recurrence for each cancer. Supplementary, graphics scans of essential data in IPD or OPD records by coder and chat panel were designed to help our specialists to have adequate information at the time of approval. In addition, the list of cancer patients was retrieved from the hospital IT system to minimize human data entering errors. With the advanced technology, this new cancer registry program can help us to reduce human resources, time consumption and also can increase productivity in the dimensions of information details, accuracy and coverage.

The cancer registry should be designed to support the purpose and function of each individual institute. The most benefit of the cancer registry will come from the accuracy of data and the method of data collection.