

Experiences in Organisation of Breast Cancer Facilities in Rural India

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Health and disease are major socioeconomic issues in many developing countries, including India. India is a large subcontinent, with an estimated population of 1.35 billion based on the recent UN data of 2018. Major cities in India have easy access to modern cancer therapy as obtains in advanced countries; however, 70% of Indian population reside in rural and semi urban areas. Routine day to day medications for common ailments are not a problem; however, access to modern cancer therapy (surgery, chemoradiotherapy etc) is a major issue due to socioeconomic constraints which prevents this large population from having an access to multidisciplinary treatment.

Cancer of the cervix uteri is the commonest female cancer in rural India; However, recent Indian cancer registry data reports that incidence of breast cancer has surpassed cervical cancer, in major metropolitan cities [1]. It is expected that breast cancer will be the commonest cancer in Indian women in the coming decades in urban and rural areas. The increasing incidence is probably due to the changing life styles of women in urban areas. Late marriages, fewer children, minimal breast feeding (due to professional careers), changing dietic habits and obesity are among the important etiological factors. The authors have taken breast cancer as an example and present their experiences in organising breast cancer awareness, early diagnosis and treatment facilities in a rural area, BARSHI in Maharashtra state of India. This is of major importance as patients can now receive treatment in their own environment without having to travel to major cities which is expensive and difficult for majority of villagers in a rural setting.

In order to overcome these procedural difficulties, specially designed mobile vans with facilities for clinical examination, laboratory studies, X-ray's, ultrasound, cytology and pap smear were commissioned by The Tata Memorial Cancer Hospital, Mumbai (capital and large metropolitan city in the state of Maharashtra) (fig 1,2). The mobile vans covered large and distant areas of villages to provide basic amenities. The objective was to "take medicine to the people". The response to this effort, of sending mobile vans to the villages exceeded the expectation of the organisers. The villagers with their native intelligence made the best use of these facilities not only for breast problems, but also for other ailments. A year later, a small outpatient department with basic facilities was built in Barshi (fig 3). Most women with breast cancer presented in stage 111- 1V (70%). Patients requiring multidisciplinary therapy

like surgery, chemotherapy or radiotherapy were referred to higher centres in Mumbai. Majority opted for a mastectomy as facilities for radiation were until then unavailable in Barshi. Over a period of two years, two hundred consecutive women from Barshi, with breast cancer were referred for treatment to a higher centre in Mumbai. We documented, 75% had socioeconomic issues – finances, family problems, difficulty in long distance travel and staying in metropolitan cities, social taboo of hair loss, post chemotherapy, 20% had disease and therapy related physiologic disabilities, 43% could not complete therapy and only 33% returned from Barshi to Mumbai for a long term follow up.



Figure 1: Specially designed mobile vans used for the stated objective for breast cancer. "Taking Medicine to the People"



Figure 2: Interior of the vans with facilities for examination, lab studies X-rays, ultrasound, pap smear and cytology



Figure 4: Distribution of pamphlets for breast cancer awareness

Over three decades the diagnostic and therapeutic facilities have been extended not only for breast cancer but also for other cancers (Table).



Figure 3: Outpatient department with basic amenities established in Barshi. Women enthusiastically awaiting their turn for examination.

Breast cancer awareness was propagated via pamphlets, posters, lectures and one to one talk in their native language (fig 4). The significant success of this venture, ultimately led to the establishment of a community cancer centre which allowed women to be treated in their own village. The Barshi project received government and philanthropic grants, including a five million \$ donation from The Bill and Melinda Gates foundation, USA. A major project on screening and early diagnosis of cervical cancer was also carried out in Barshi with these funds.

Chronological progress of Barshi community cancer centre

YEAR	EVENTS
1980-81	Registration of Trust and Society
1982	Mobile vans commissioned: Tata Memorial Hospital/ Barshi Cancer Centre started
1983	Outpatient Department (OPD)
1984	Indoor Patient Department
1986-87	X-ray and USG unit and Cancer Registry
1992	Radiotherapy unit
1995	Medical Oncology and fibre optic scopes
1999	CT Scan / IARC: Cervical Cancer Prevention Project
2000	Colposcopy, HPV and Cytology laboratories

YEAR	EVENTS
2000	Colposcopy, HPV and Cytology laboratories
2001	Training Program for Govt Medical Officers
2002	Telepathology
2005-06	Mammography & Nuclear Medicine Imaging
2009	Cervical Cancer Vaccination Project
2011	Major Project on Cervical Cancer
2011	MRI: Sponsored by Indo-U5 Health Care, Hyderabad, India
2011	Linear Accelerator: Donation from Firodiya Trust, Pune, India
2012	Ayurveda Department
2012	“Rajiv Gandhi Arogya” Yojana by Govt of Maharashtra

With the establishment of the Barshi community cancer centre, women with breast cancer reported early; most completed treatment in their own environment without the need to travel to distant centres in Mumbai. With the establishment of radiotherapy facilities in Barshi, breast conservation surgery numbers increased significantly. The Barshi centre which began as a humble effort has now grown into a sprawling community cancer centre (fig 5). The Barshi model offers a practical approach towards cancer control in India with a low cost, low technology effort beyond the major cities and towns into the hinterlands of India literally “taking medicine to the people”. Considering the simplicity and effectiveness of the project the WHO recognized this as a reproducible effort. The town and village level

support system provide the basic medical needs for a very large majority of Indian population. Comprehensive cancer centres across India need to act as a catalytic force to disseminate knowledge, experience and expertise, clinical and basic research ethos, to these lower tiers of the cancer control pyramid for developing countries. These low cost, low technology models can slowly and steadily develop into major and effective cancer institutes across the country. The final culmination and success of this effort is proven by actual images and successes in the rural area where such a transformation has been achieved, with the highly dedicated efforts of local professionals from Barshi and also from a large comprehensive cancer centre, The Tata Memorial Hospital in Mumbai.



Figure 5: A sprawling community cancer centre established in Barshi

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Reference

1. Sharma DC (2016) Cancer data in India show new patterns. *The Lancet Oncology* 17: 272.

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