OncoNet
A paradigm for cancer management in developing countries

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Cancer – a global problem

- 30% of all cancers can be prevented
- 40% of all cancers can be cured
- Cancer needs prolonged treatment and regular follow-up
- Principal forms of treatment: surgery, radiotherapy and chemotherapy
- Long periods of hospitalization and regular visits to the hospital
- Cured patients need lifelong follow-up

Through the looking glass

- By 2015, two-thirds of all cancer patients will be in the developing world
- The developing world has only 5% of all health care resources

INDIA
States and Union Territories
N
JAMMU & KASHMIR
Srinagar
HIMACHAL PRADESH
Shimla
PAKISTAN
Chandigarh
PUNJAB
UTTARANCHAL
Dehradun
DELHI
HARYANA
CHINA (TIBET)
ARUNACHAL PRADESH
NEPAL
SIKKIM
Gangtok
BHUTAN
Itanagar
UTTAR PRADESH
RAJASTHAN
Jaipur
Lucknow
Patna
BIHAR
ASSAM
Dispur
NAGALAND
Kohima
Shillong
Imphal
MANIPUR
MEGHALAYA
Agartala
TRIPURA
Aizawl
MIZORAM
MYANMAR
GUJARAT
Gandhinagar
Bhopal
MADHYA PRADESH
Ranchi
JHARKHAND
WEST BENGAL
Calcutta
CHHATTISGARH
Raipur
ORISSA
Bhubaneshwar
BANGLADESH
DIU
DAMAN
DADAR & NAGAR HAVELI
MAHARASHTRA
Mumbai (Bombay)
KARNATAKA
Panaji
GOA
YANAM (Pondicherry)
BAY OF BENGAL
ARABIAN SEA
LAKSHADWEEP
PONDICHERRY (Puduchchery)
KARAIKAL (Pondicherry)
Port Blair
ANDAMAN & NICOBAR ISLANDS
Thiruvanan
THIRUVANANTHAPURAM
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Map not to Scale

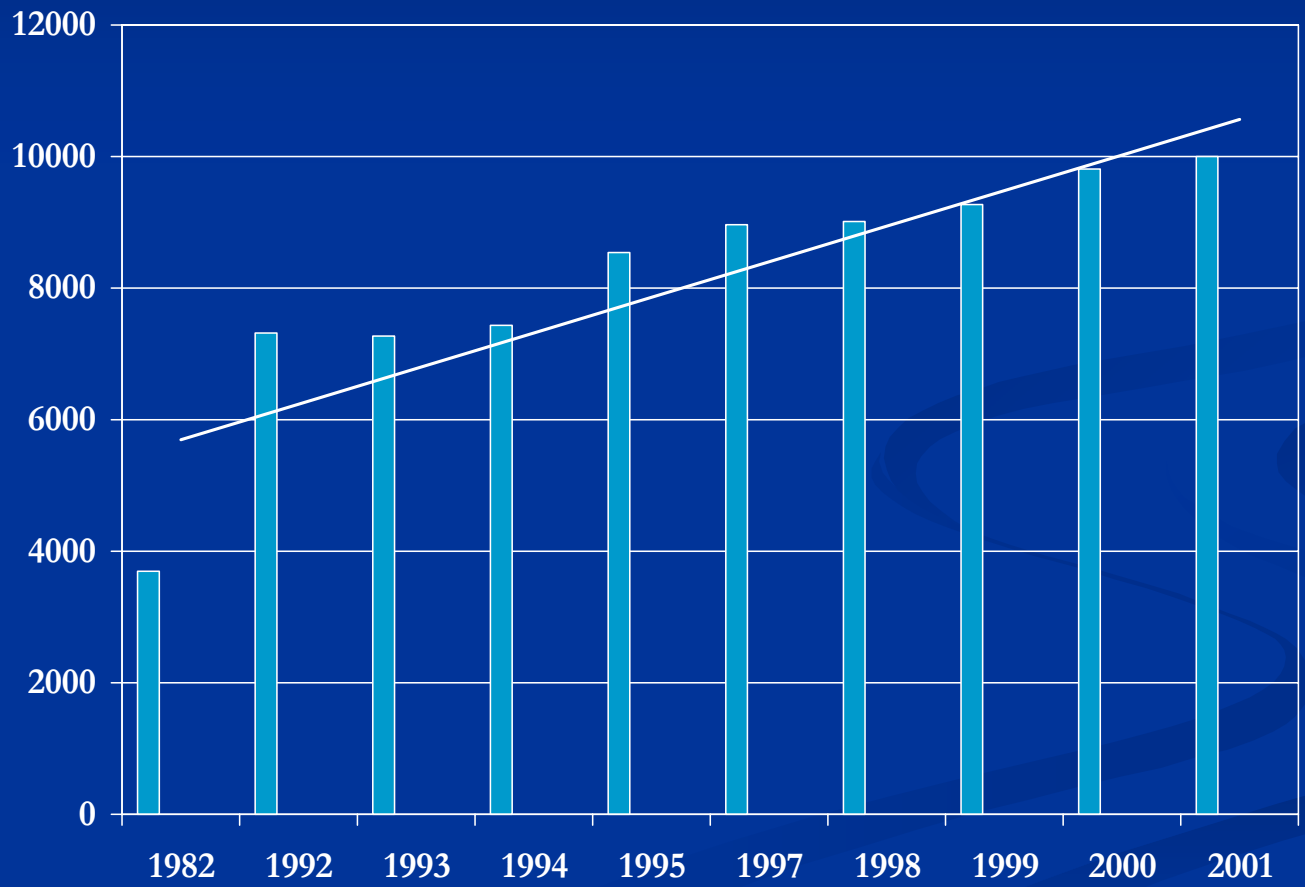
God's Own Country

- Area: 38,863 sq. km
- Population (hundred thousand): 318.41
- Sex ratio: 1036 in favour of women
- Literacy: 90.92%
- Life expectancy: 68
- Birth rate (per 1000): 18.3
- Infant mortality (per 1000): 22

Regional Cancer Centre, Trivandrum

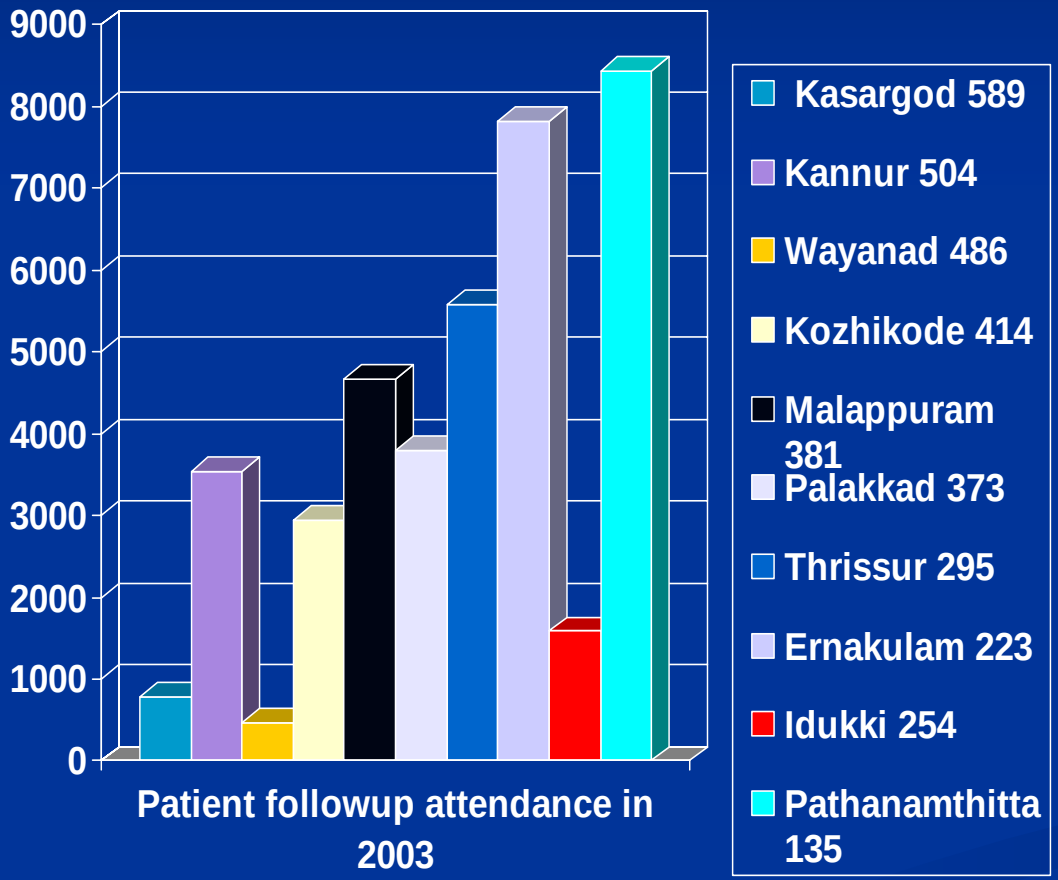
- Tertiary referral cancer hospital with state of the art treatment facilities
- Seven oncology divisions with 75 trained professionals
- Caters to south India
- 12,000 new cases per year
- Annual follow-up: 100,000

Yearly patient attendance at RCC, Trivandrum

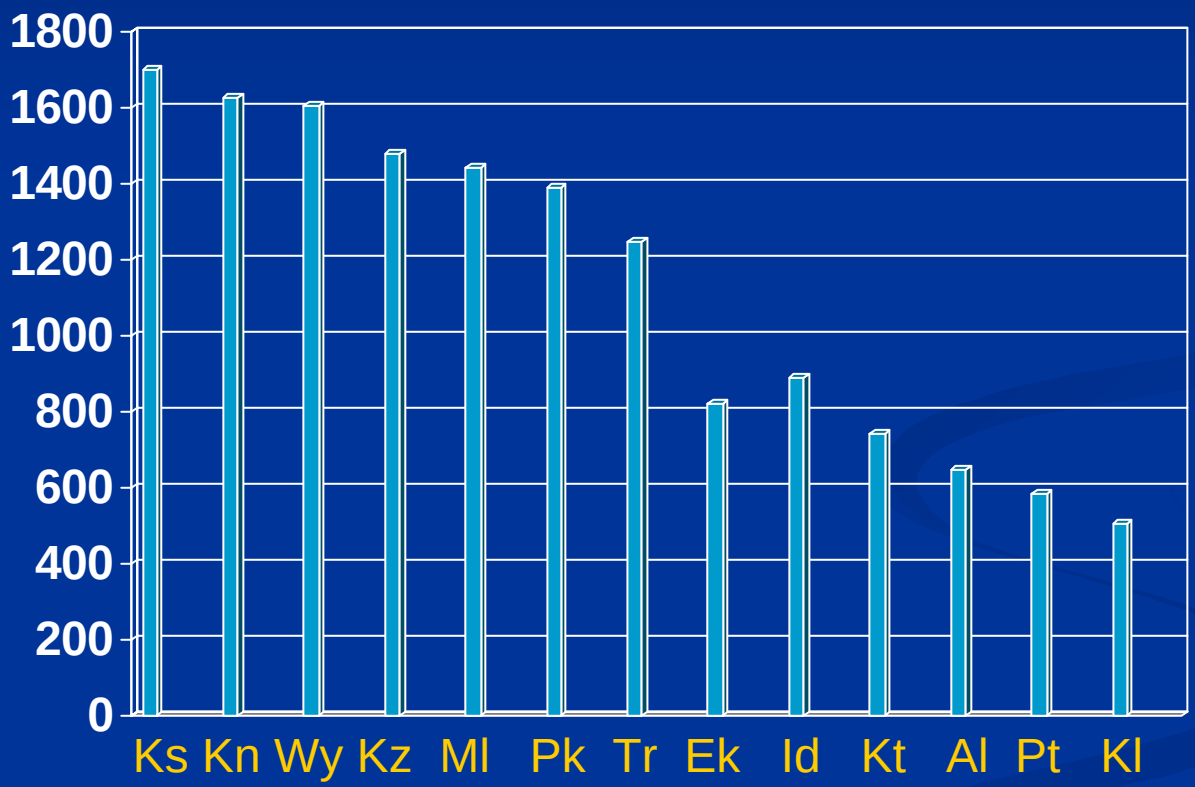


50-60 new patients per day
500 patients on daily follow up

Patient follow-up 2003



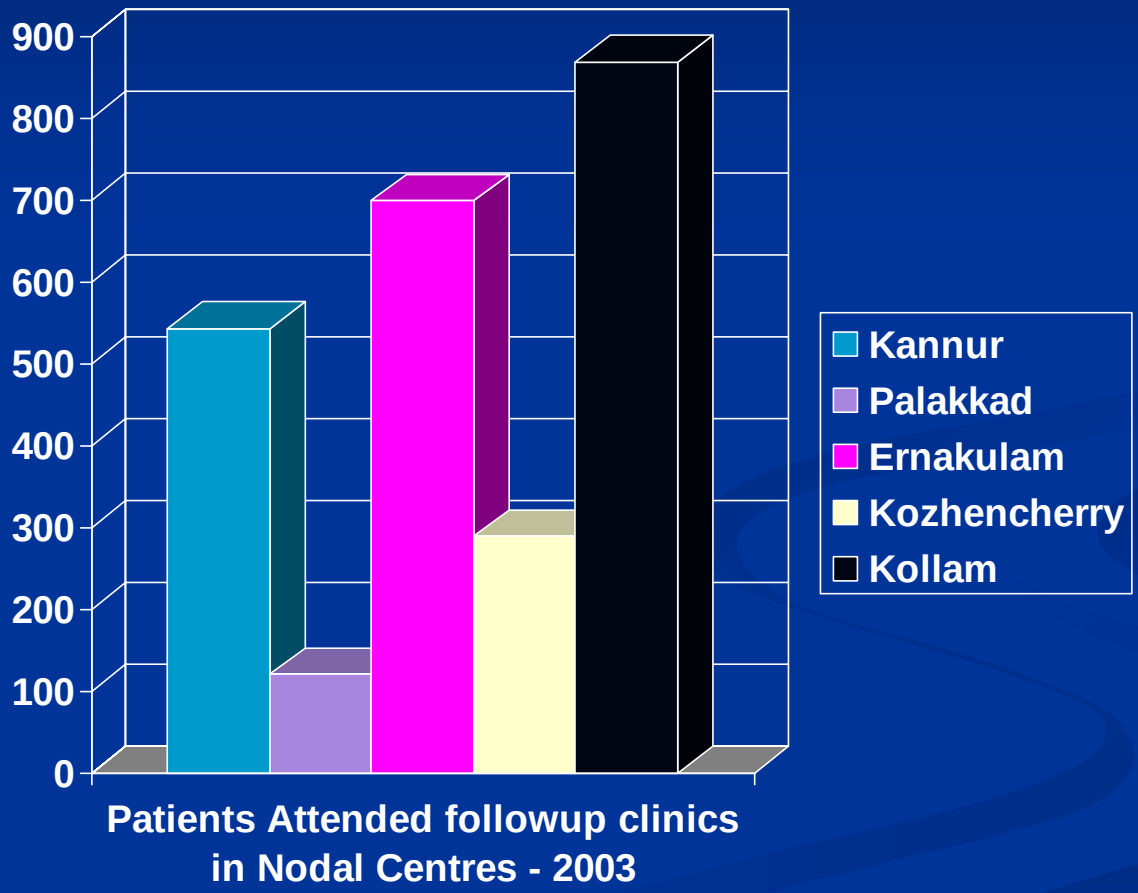
Expense for each visit



In the past

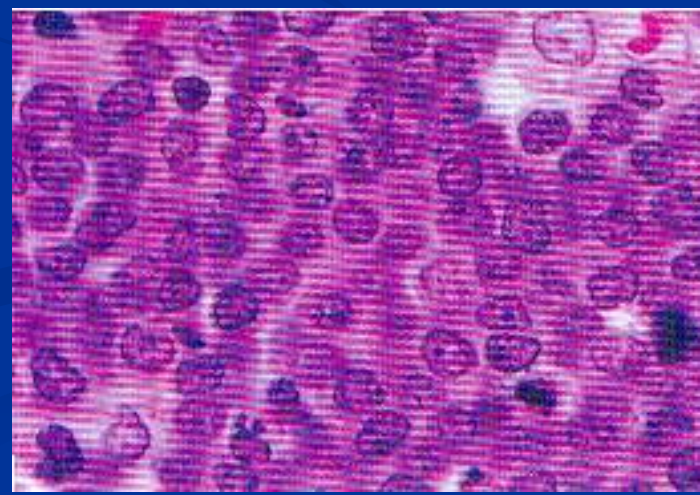
- Monthly follow-up clinics
- Early detection, cancer education, and palliative services
- Specialists travel to these centres with medical records
- Average monthly follow-up: 80

Follow-up attendance at nodal centres



Telemedicine and cancer

- Early intervention
- Avoid unnecessary referrals and admissions
- Waiting period for patients can be reduced
- Telepathology applications
- Teleradiology
- Patient follow-up
- Palliative care
- Continuing medical education



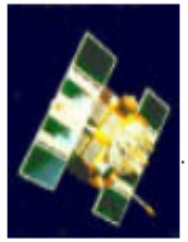
Onconet Kerala

- Launched April 2001
- Technical assistance from C-DAC, Govt. of India
- Broad band network connecting RCC and peripheral nodes
- Video-conferencing, telepathology and teleradiology

  at all centres
- V-SAT from ISRO

Scope of Onconet

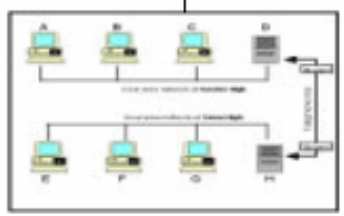
- Establish high bandwidth connectivity between Regional Cancer Centre, Trivandrum and its peripheral centers at Kochi, Kannur, Palakkad, Kozhencherry and Kannur using (VSAT).
- Enhance the Tele-consultation clinic at all peripheral centers with high quality video conferencing, telepathology and teleradiology equipments. This facilitates remote expert consultation, capture, storage, transmission and sharing of pathology and radiology images.
- Develop a Web enabled Hospital Information System at Regional Cancer Centre tightly integrated with telemedicine system
- Development of a Knowledge Enabled Oncology System utilizing the vast amount of cancer related expertise in RCC.
- Setting up a Learning Resource Centre for reference by RCC staff and other oncologists.



Communication Satellite

Video Conferencing

Video Conferencing



RCC HIS - Intranet

Video conferencing, telepathology & teleradilogy systems at nodal centre

Tele-Pathology System

Tele-Radiology System

OncoNETKeralaHomePage - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address http://www.onconetkerala.org/validation.jsp Go Links

OncoNET Kerala

Regional Cancer Centre's Official Tele Consultation

- Patient Information
- TeleConsultation
- Enquiry
- Report
- SignOut

Establishment of OncologyNetwork for providing telemedicine services in cancer detection,treatment, pain-relief,patient followup and continuity of care in nodal hospitals.

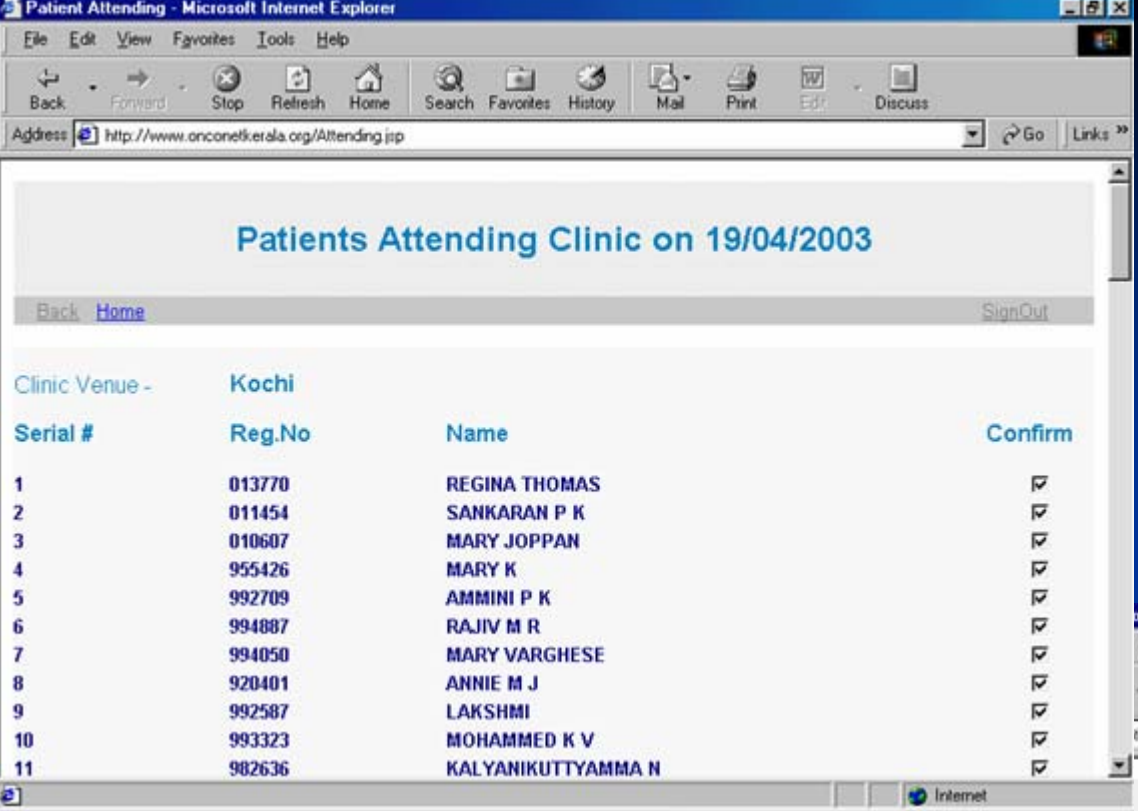
Regional

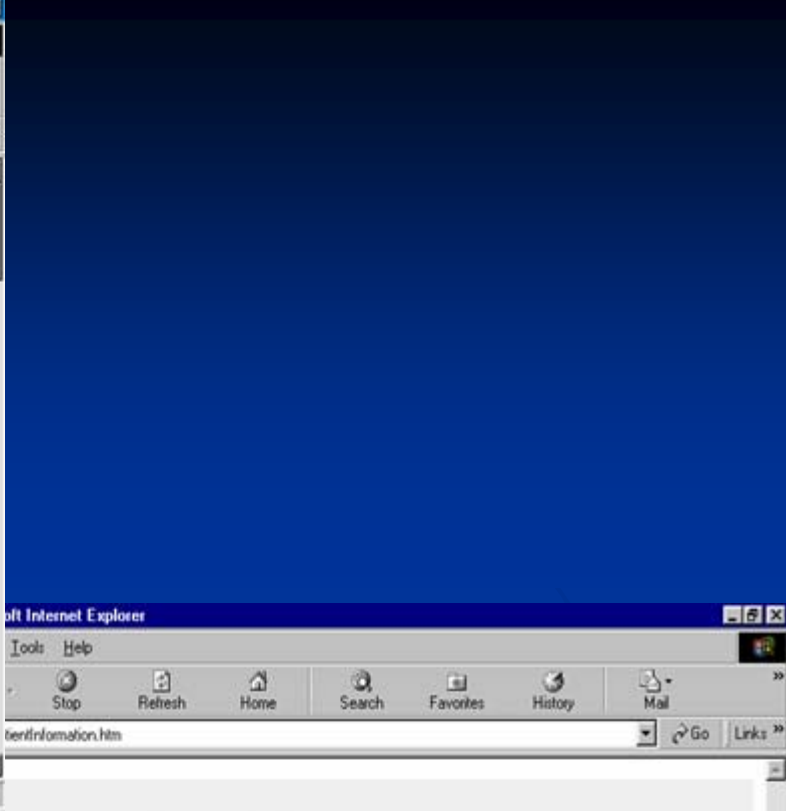
OncoNET Peripheral Centres

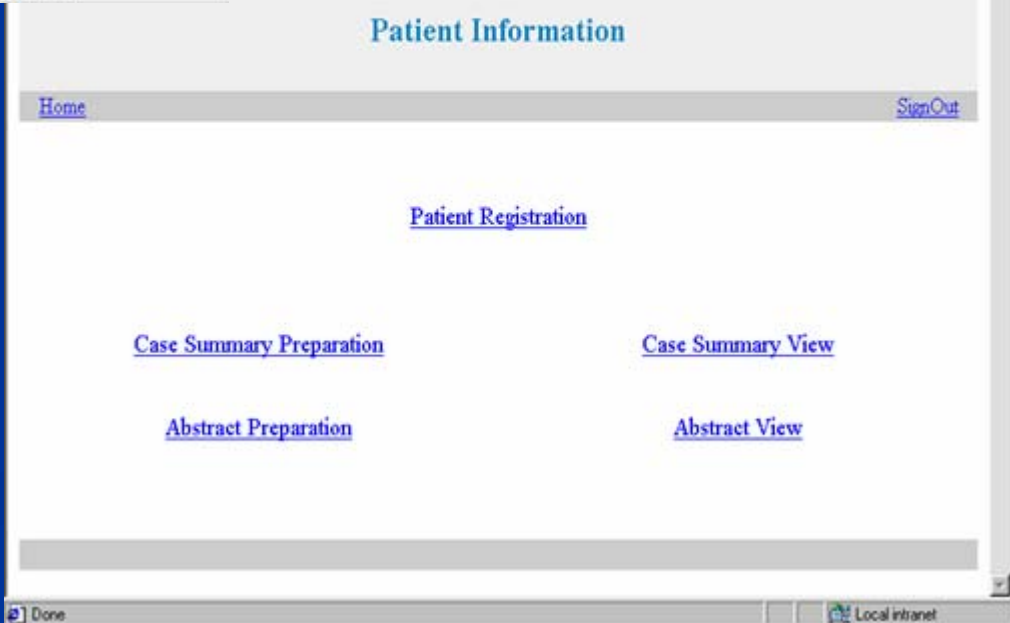
Kochi

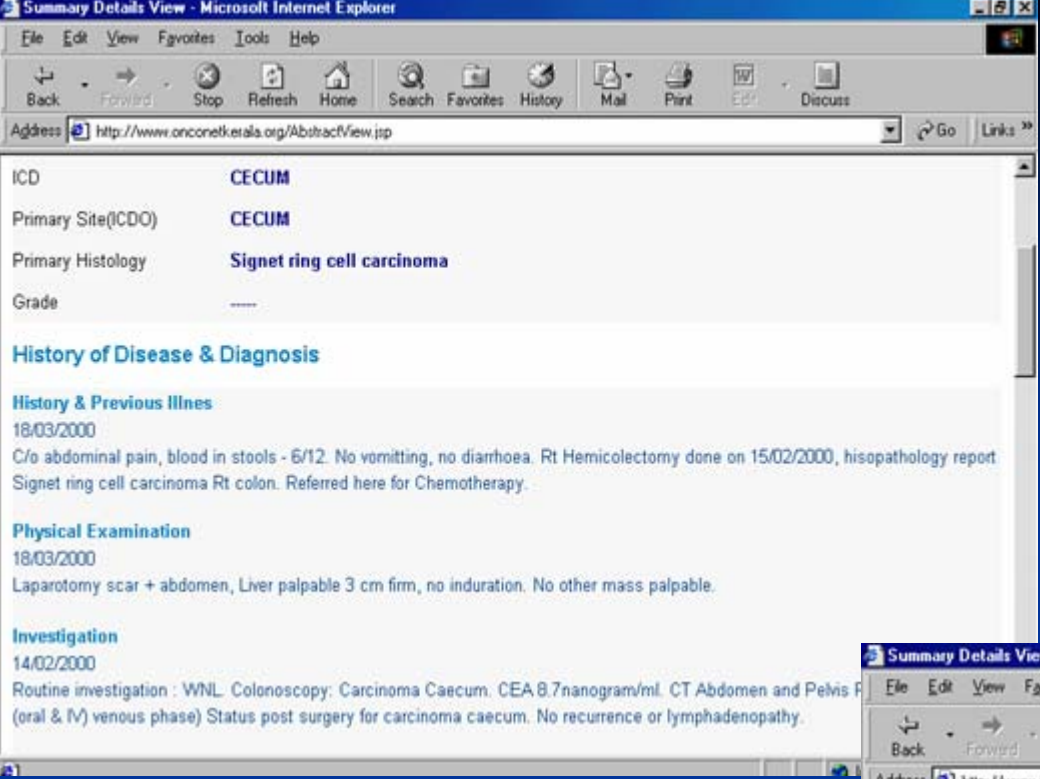
Done Internet

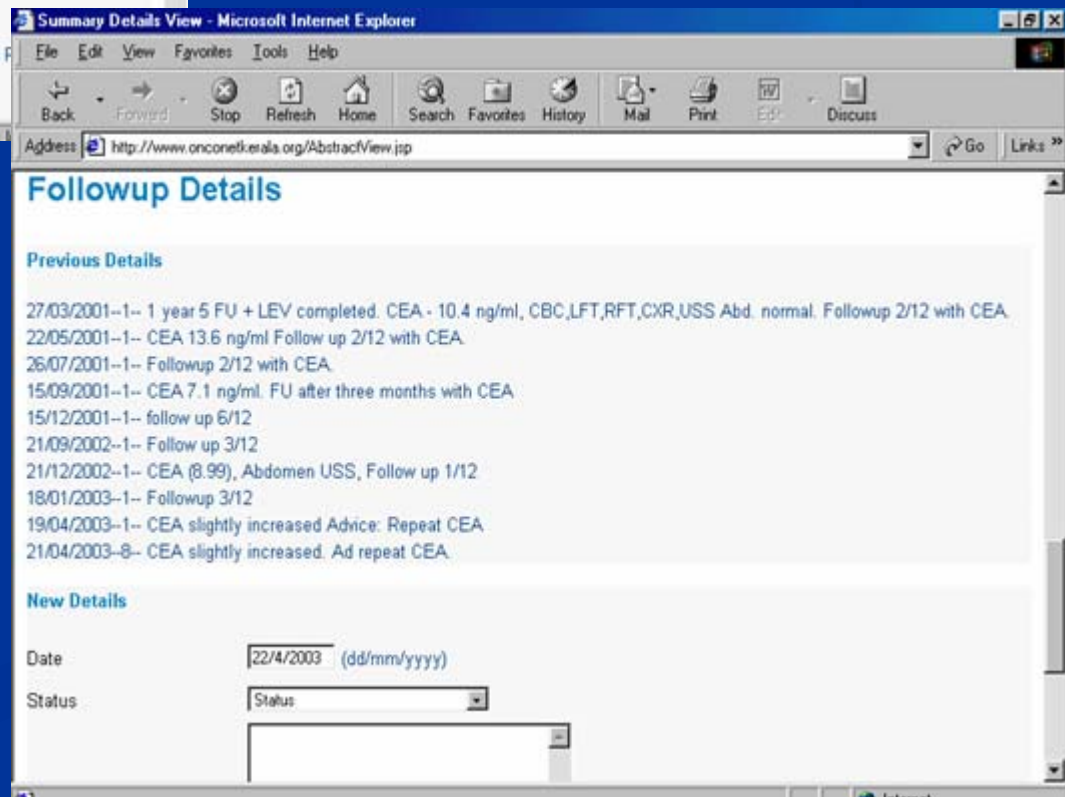
Start telemedicine Microsoft PowerPoi... OncoNET ... Document1 - Micro... 3:56 PM

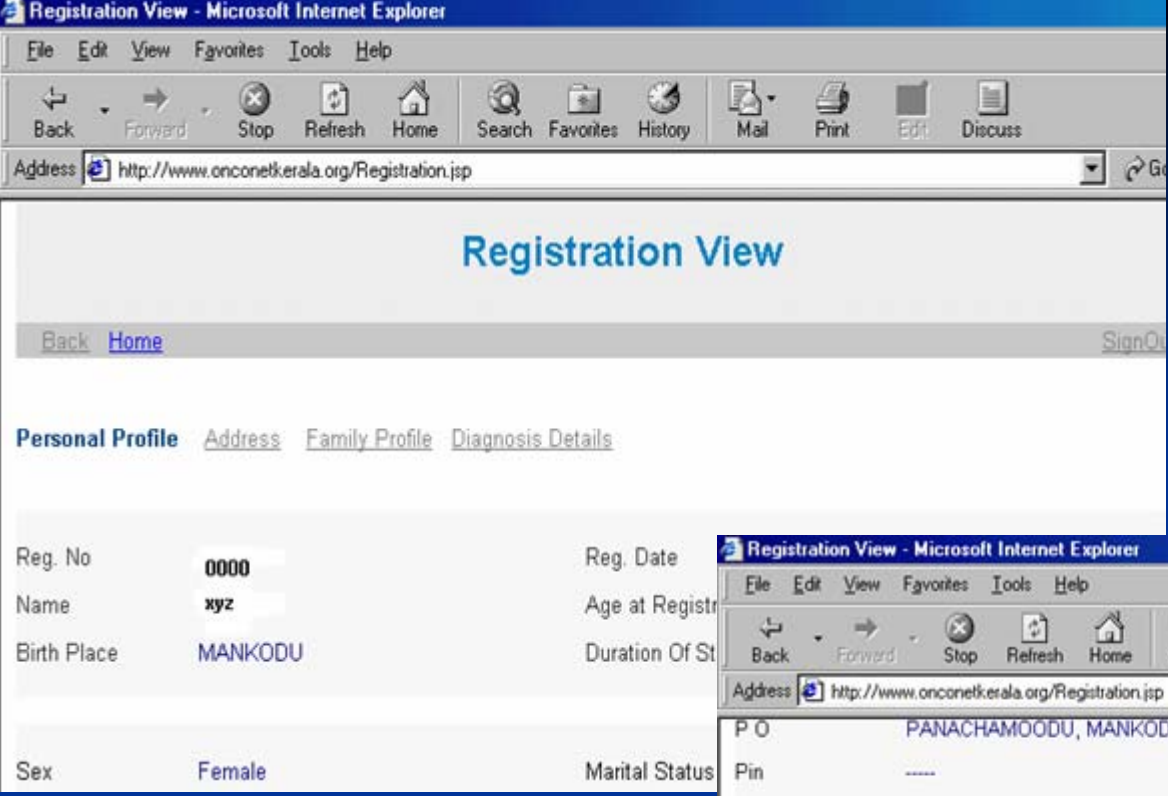

Patient Attending - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://www.onconetkerala.org/Attending.jsp
Go Links
Patients Attending Clinic on 19/04/2003
Back Home SignOut
Clinic Venue - Kochi
Serial # Reg.No Name Confirm
1 013770 REGINA THOMAS
2 011454 SANKARAN P K
3 010607 MARY JOPPAN
4 955426 MARY K
5 992709 AMMINI P K
6 994887 RAJIV M R
7 994050 MARY VARGHESE
8 920401 ANNIE M J
9 992587 LAKSHMI
10 993323 MOHAMMED K V
11 982636 KALYANIKUTTYAMMA N
Internet

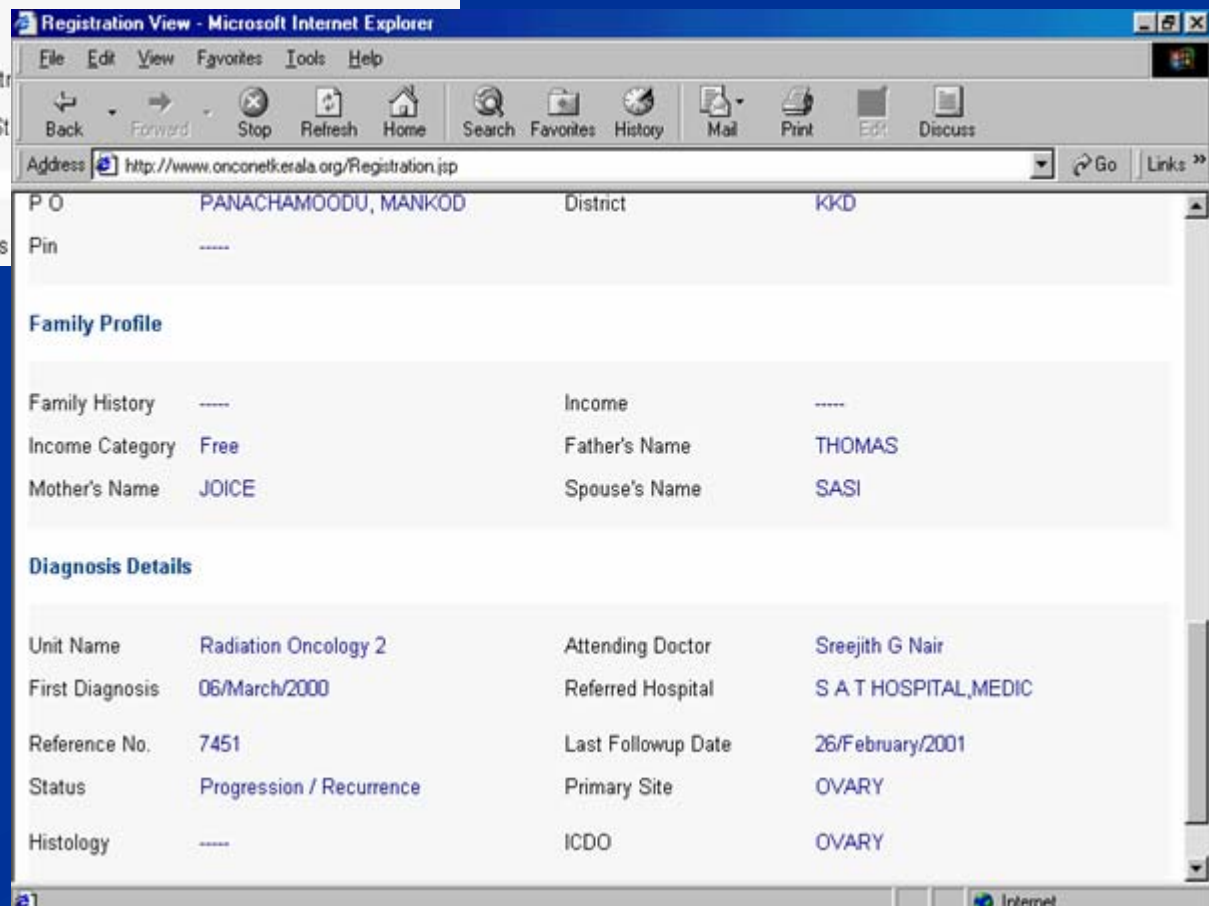

Tools Help
Stop Refresh Home Search Favorites History Mail
Go Links


Patient Information
Home SignOut
Patient Registration
Case Summary Preparation
Case Summary View
Abstract Preparation
Abstract View
Done
Local intranet


Summary Details View - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://www.onconetkerala.org/AbstractView.jsp
Go Links
ICD CECUM
Primary Site(ICDO) CECUM
Primary Histology Signet ring cell carcinoma
Grade -----
History of Disease & Diagnosis
History & Previous Illnes
18/03/2000
C/o abdominal pain, blood in stools - 6/12. No vomitting, no diarrhoea. Rt Hemicolectomy done on 15/02/2000, hisopathology report Signet ring cell carcinoma Rt colon. Referred here for Chemotherapy.
Physical Examination
18/03/2000
Laparotomy scar + abdomen, Liver palpable 3 cm firm, no induration. No other mass palpable.
Investigation
14/02/2000
Routine investigation : WNL. Colonoscopy: Carcinoma Caecum. CEA 8.7nanogram/ml. CT Abdomen and Pelvis
(oral & IV) venous phase) Status post surgery for carcinoma caecum. No recurrence or lymphadenopathy.


Summary Details View - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://www.onconetkerala.org/AbstractView.jsp
Go Links
Followup Details
Previous Details
27/03/2001--1-- 1 year 5 FU + LEV completed. CEA - 10.4 ng/ml, CBC,LFT,RFT,CXR,USS Abd. normal. Followup 2/12 with CEA.
22/05/2001--1-- CEA 13.6 ng/ml Follow up 2/12 with CEA.
26/07/2001--1-- Followup 2/12 with CEA.
15/09/2001--1-- CEA 7.1 ng/ml. FU after three months with CEA.
15/12/2001--1-- follow up 6/12
21/09/2002--1-- Follow up 3/12
21/12/2002--1-- CEA (8.99), Abdomen USS, Follow up 1/12
18/01/2003--1-- Followup 3/12
19/04/2003--1-- CEA slightly increased Advice: Repeat CEA.
21/04/2003--8-- CEA slightly increased. Ad repeat CEA.
New Details
Date 22/4/2003 (dd/mm/yyyy)
Status Status


Registration View - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://www.onconetkerala.org/Registration.jsp
Registration View
Back Home
Personal Profile Address Family Profile Diagnosis Details
Reg. No 0000
Reg. Date
Name xyz
Age at Registr
Birth Place MANKODU
Duration Of St
Sex Female
Marital Status


Registration View - Microsoft Internet Explorer
File Edit View Favorites Tools Help
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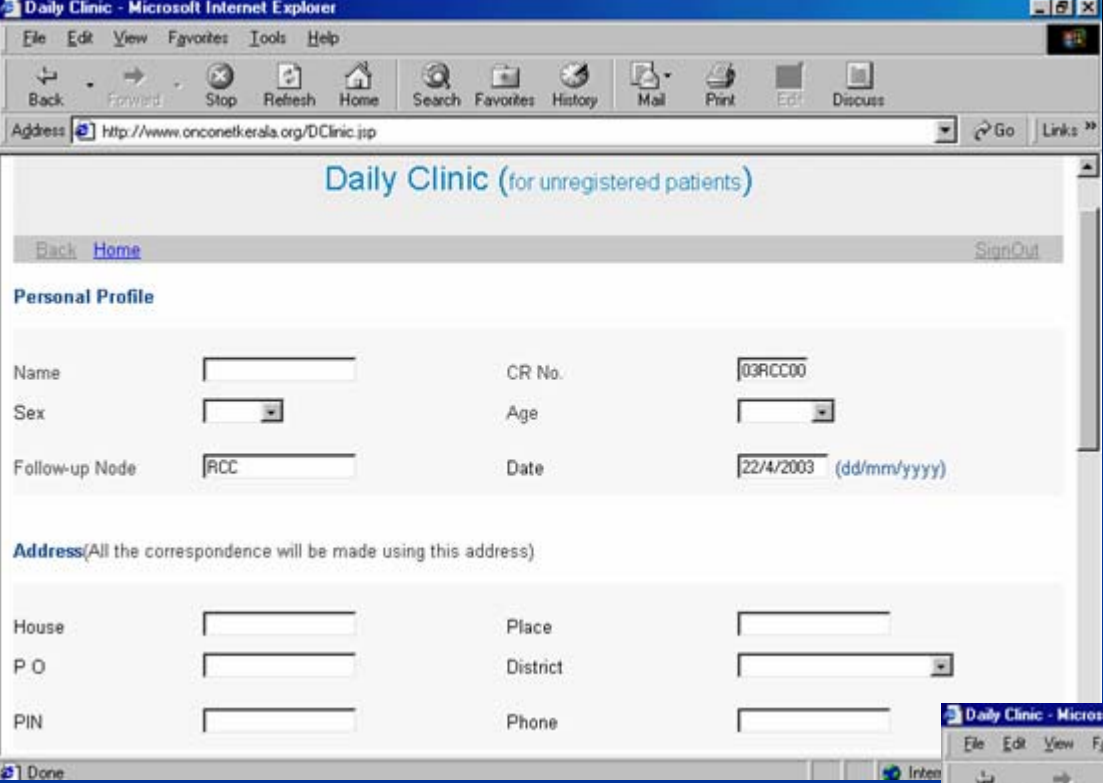
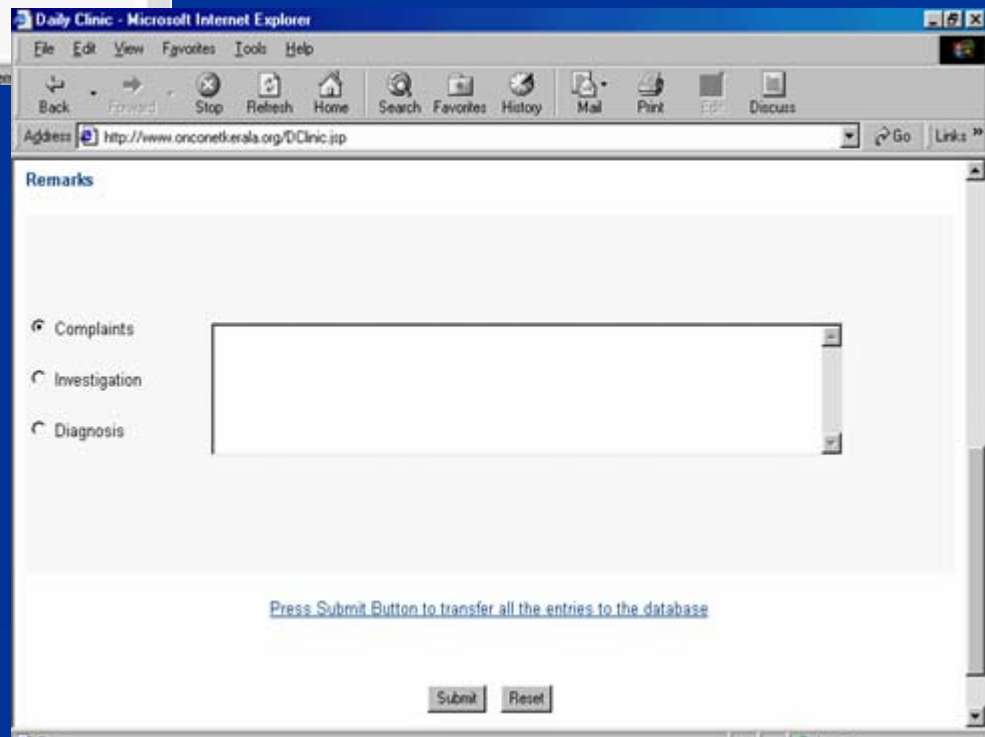
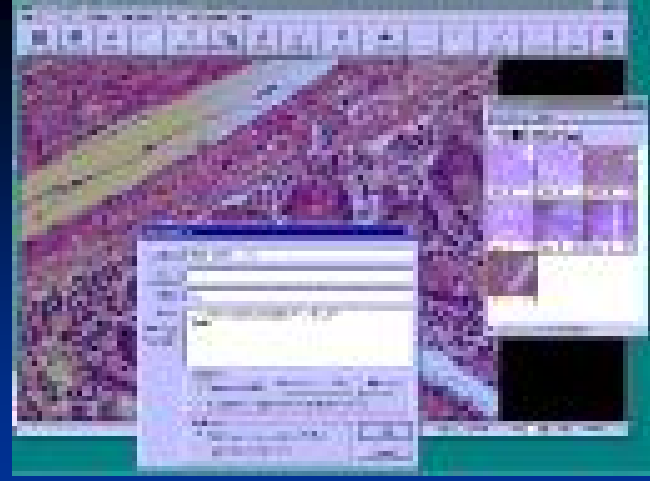
Address http://www.onconetkerala.org/Registration.jsp
Go Links
P O PANACHAMOODU, MANKOD
District KKD
Pin -----
Family Profile
Family History -----
Income -----
Income Category Free
Father's Name THOMAS
Mother's Name JOICE
Spouse's Name SASI
Diagnosis Details
Unit Name Radiation Oncology 2
Attending Doctor Sreejith G Nair
First Diagnosis 06/March/2000
Referred Hospital S A T HOSPITAL,MEDIC
Reference No. 7451
Last Followup Date 26/February/2001
Status Progression / Recurrence
Primary Site OVARY
Histology -----
ICDO OVARY


Daily Clinic - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://www.onconetkerala.org/DClinic.jsp
Go Links
Daily Clinic (for unregistered patients)
Back Home SignOut
Personal Profile
Name
CR No.
03RCC00
Sex
Age
Follow-up Node
RCC
Date
22/4/2003 (dd/mm/yyyy)
Address(All the correspondence will be made using this address)
House
Place
P O
District
PIN
Phone
Done

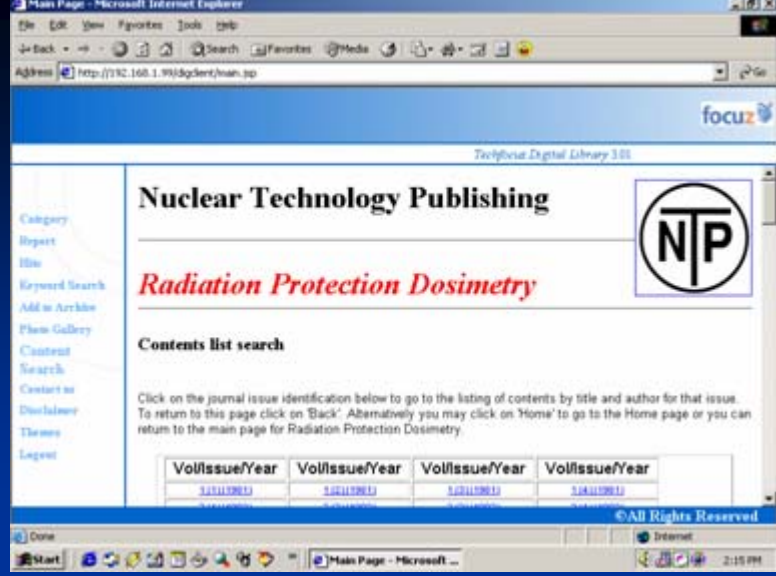

Daily Clinic - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss
Address http://www.onconetkerala.org/DClinic.jsp
Go Links
Remarks
Complaints
Investigation
Diagnosis
Press Submit Button to transfer all the entries to the database
Submit
Reset

Telepathology



- Second opinions and consultations with the Armed Forces Institute of Pathology (AFIP) and UICC
- Preparation of digital images for clinical meetings and presentations

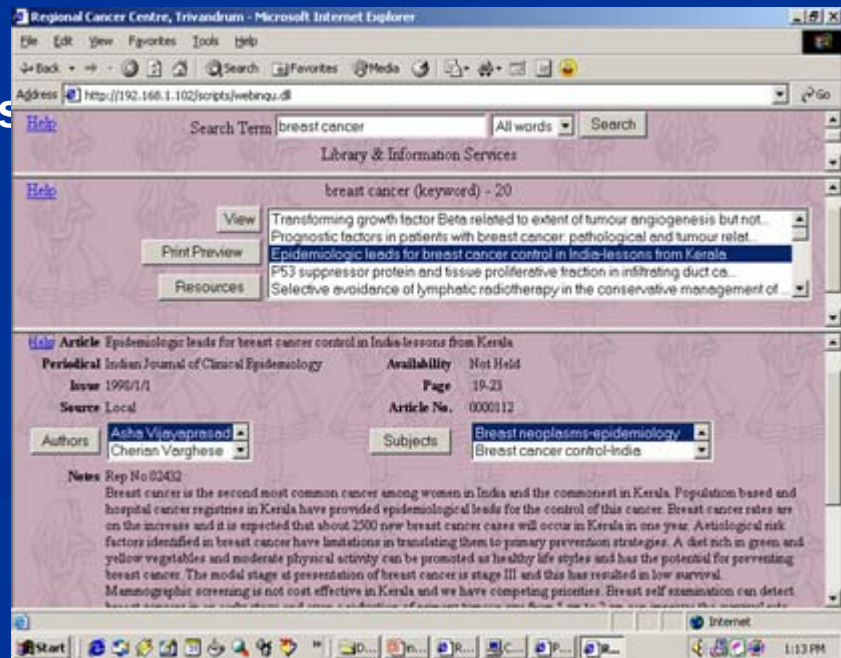
Learning Resource Centre for Oncology



Learning Resource Centre for Oncology provides cancer related information to clinicians, researchers, health planners, health workers, and administrators across ISRO's telemedicine network. This facilitates quick access to all updated oncology information.

Learning Resource Centre for Oncology

- Access various databases mounted on the CD ROM server
- The doctors and researchers can have access to all library in-house databases such as library catalogue, journal holdings, current journals, bibliographies, and resources



Activities

- Monthly clinics at peripheral centres
- Specialist consultations for suburban and rural clinics
- CME programmes with Medical Colleges and other cancer hospitals in India
- Regular telepathology programmes with Tata Memorial Hospital, Mumbai

In conclusion

- Early detection and treatment
- Early, appropriate and timely referral
- Optimization of limited treatment resources
- ?Cost-effective
- Telepathology and teleradiology applications

Thank you