

# **NATIONAL BURNS CENTER**

**Airoli, Navi Mumbai**

**WE BURN  
WITH A DESIRE  
TO HEAL**



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**BURNS HELPLINE\_022 2779 3333**

# NATIONAL BURNS CENTER

Navi Mumbai, India



The **National Burns Center (NBC)** promoted by the **Indian Burns Research Society** is a unique and pioneering project to tackle burns holistically. The Center has a five-fold strategy to tackle burns namely Prevention, Treatment, Training, Rehabilitation and Research. The Center continuously strive forward to upgrade the facilities in order to provide top of the line Burns Care at an affordable cost specially adapted to India's present socio-economic profile characterized by low incomes, unsanitary domestic environment and low resistance to infection. It has been established to focus attention and effort on all aspects of Burns in order to develop expertise in this particular area of specialization to create an Institution, which will set standard of excellence in burn care in the country.

Our primary goal is to evolve simplified methods of treatment to reduce cost-of-treatment & and to give a near normal functional post- burn life to burns survivors

## INDIAN BURNS RESEARCH SOCIETY (IBRS)

IBRS was formed in 1985 and is registered as a charitable institute with the Registrar of Charities, Mumbai. Over the years the society has done path – breaking work in Burns Management.

The hospital was commissioned on 5th October 2001 with 50 beds capacity.

## **The Center has the following facilities –**

### **Facilities :**

- ❖ Outpatient Department attended by experienced consultants.
- ❖ State-of-the-art Intensive Burns Intensive care Unit of 8 beds with separate cubicles having separate hepa filtered air inflow and outflow.
- ❖ State-of-the-art Skin Bank in collaboration with Euro Skin Bank Amsterdam, Netherlands.
- ❖ Skin Regeneration Research Laboratory
- ❖ Exclusive burns dressing room.
- ❖ Kamal Nain Bajaj Operation TheatreComplex(Four operation theatres).
- ❖ MurliChhugani Pathological and Microbiological Laboratory with all sophisticated instruments.
- ❖ Digital X-Ray unit with developing facilities (24x7).
- ❖ Full time Physiotherapy Department.
- ❖ 24 hours Pharmacy.
- ❖ Seminar room accommodating 35-40 participants for Continuous Medical Education (CME) programmes.
- ❖ Dialysis unit
- ❖ Special Burns Ambulance, one of its kinds in the Country.
- ❖ Canteen Facility.
- ❖ Organic farming for patients food
- ❖ Residential Facility for Medical Staff.
- ❖ Dedicated Medical Social Worker department for the burn rehabilitation.
- ❖ Consultant Psychiatristfor post burns counseling and rehabilitation.
- ❖ Two 125 KV Generators for uninterrupted power supply.
- ❖ Nutrition management under the supervision of a dietician.

## **Infrastructural development at National Burns Centre**

### **1. Intensive Burn care Unit (IBCU)**

IBCU was inaugurated on 21<sup>th</sup> Aug 2009

#### **Need of IBCU-**

Burns patients are always susceptible to infection. Hence there was the need to build a state-of-the-art IBCU.

#### **Key features-**

- Separate 8 cubicles with sterile air exchange
- Latest medical equipment to treat critical patients
- Emergency OT inside the IBCU
- Emergency Dialysis facility inside the IBCU



**IBCU**



**IBCU Cubicle**

### **2. Setting-up of State-of-the-art Skin Bank in association with Euro Skin Bank**

Skin bank was inaugurated on 21<sup>th</sup> Aug 2009

There was a great need of establishing a skin bank to collect process and preserve human cadaver skin donated after death. The processed donor skin helps immensely in the treatment of extensive burn. It has been observed that the surgical application donor skin on burn wound has improved the treatment outcome. Many patients who could not have been saved without donor skin are being saved now.

The Skin bank not only caters to NBC requirement but it also caters to the whole nation as there is no other skin bank of such high quality in the country today.



## Basic concept of Skin donation –

The Skin harvesting procedure is simple. Within 6 hours of death, relatives of the person can call the help line and the team of doctor and technician will arrive within 45 minutes of the call depending on the distance. It takes again no more than 45 minutes to take the skin with a special instrument called DERMATIOME which the team brings. The Skin is harvested from both the legs, thighs, and the Back. Only an eighth of the thickness of the skin is removed and there is no bleeding. After Skin is removed, patient is bandaged and no disfigurement is noticed. The Skin is preserved in Glycerol solution and is transported to the RCBN Skin Bank at National Burns Center at Airoli where after processing it is stored in a Special cold room for future use. It can be preserved for five years. In Addition to Skin, a sample of blood is also drawn for further check for HIV infection, Australian antigen and for bacterial infection.



Skin Processing facility of Skin Bank



Skin preservation cold room

## Statistics of Skin Donation from yr.-2010-2013

Sl.No	Year	Number of donations	Number of patients treated at NBC	Number of patients treated in Country
1	Apr2010- Mar 2011	24	06	0
2	Apr2011-Mar 2012	62	11	0
3	Apr2012- Mar 2013	111	25	9
4	Apr 2013- Mar2014	230	95	39
5	Apr 2014- Nov.2014	177	36	25
Total	5 years	604	173	73

### **3.State-of-the-art Skin regeneration Research Laboratory**

Skin Regeneration Lab was inaugurated on 21<sup>th</sup> Aug 2009.

#### **Need of Research in Burns treatment**

At present about 7-8 million burns cases are reported every year in our country. More than 80% of them are young women and children. The treatment of burn injury is very expensive and time taking, without any guaranteed positive outcome, even in the best of the medical facilities of our country. Hence, about 90% of severe burn patients die in our country even today in spite of availability of best of clinicians and surgeons. One of the primary reasons for such high mortality is lack of indigenous research based therapy to make cost effective skin substitutes which can replace the damaged skin and heal the wound.

With this objective Indian Burns Research Society started the Research lab to explore path-breaking research based therapy which can help in saving lives of burn victims. This is the only research lab in the country only dedicated for burns research.

#### **Aims of the Lab-**

- To make cost effective tissue engineered skin for treating extensive deep burns.
- To innovate newer modalities for faster wound healing of superficial to deep burns using various kinds of cell based therapy including stem cells therapy.

#### **Research work carried out so far-**

Developed keratinocyte cells spray for treating partial thickness burns.

Developed acellular dermis from cadaver skin



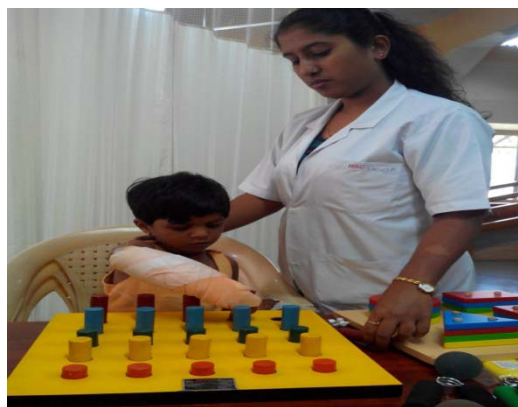
Cell culture facility of Skin Regeneration Research Lab

#### **4. Up-gradation of Department of Physiotherapy and Rehabilitation**

Inaugurated on June 2014

Physiotherapy is an integral of holistic burns care in restoring the functional aspects of burnt limbs and total functional rehabilitation of burn survivors to near normal level. Hence IBRS has always made conscious efforts in continuous upgradation of Physiotherapy department

The existing physiotherapy department was upgraded with latest equipment in the year 2014 to take care of the post-burn functional aspects of the burn care.



#### **5. Central Library Facility with WIFI connectivity**

Inaugurated on 14<sup>th</sup> June 2014

IBRS being a premier training institute for Burns. It trains all types of medical, paramedical and other personnel engaged in the Burn prevention, rescue, treatment and rehabilitation. Hence there was always a need of a good E-library with internet connectivity.



DG.Rtn. LataSubraidu inaugurating the Library





## **6. Up-gradation of patient room**

Burns patients need to be hospitalized for a long time to for treatment and recovery. They need to be kept in isolated and clean environment. So each patient is kept in separate room. In order to provide comfortable stay and ideal treatment, NBC has upgraded 8 rooms with automated beds and all necessary treatment facilities.



## **Organic Farming at NBC campus**

Nutrition plays a very important role in speedy recovery of burns patients. The nutrition requirement of patients is taken care by growing organic vegetables in-house through organic farming.





## **EDUCATIONAL AND TRAINING EVENTS -**

NBC believes that the standard of our burn care in the country cannot improve unless skilled and passionate Burn Care- professional are developed. So training & development of skilled manpower is one of the fivefold objective of NBC to uplift the standard of Burn Care in the Country.

Every year NBC conducts various types of events for the upliftment of burn- care in the country. The names are as follows-

### **1. CME on latest development in burn treatment and Research-**

NBC being a premier burn Centre conduct continuous medical education program to share the latest national and international update on treatment with other medical practitioners (Doctors, nurses, physiotherapist).

The best faculty from India and abroad are invited to make each CME an educational and knowledge sharing session

About 250-300 delegates participate in each CME programs.

### **Details of CME conducted at NBC (Yr. 2009-2014)-**

<b>Month-Year</b>	<b>Theme of CME</b>	<b>Number of faculties</b>	<b>Number of topics discussed</b>	<b>Number of delegates</b>	<b>FULL DAY/HALF DAY</b>
Sept-2009	Burns Update	8	8	150	Full Day
Dec-2009	Plastic and Hand Surgery	7	7	125	Full Day
May-2010	Critical care management of Burns	7	7	250	Full Day
Dec-2010	Organ Donation Seminar	4	4	60	Half Day
Nov.-2011	Burns Update	12	12	300	Full Day
March-2012	Burns Update	10	10	275	Full Day
Feb-2013	Burns Update	6	8	200	Full Day
July-2013	National Symposium on Stem Cell and Regenerative Medicine	6	6	80	Full Day
Aug-2013	Burns Update	8	8	160	Full Day
Nov-2013	Burns Physiotherapy	6	6	180	Full Day
Jan-2014	National Symposium on Stem Cell and Regenerative Medicine	6	6	235	Full Day
Sept-2014	Burns Update	8	8	150	Full Day
<b>TOTAL</b>	<b>12</b>	<b>90</b>	<b>90</b>	<b>2165</b>	

**Summary- In five years, NBC trained more than 2000 medical professionals from across country on 90 different topics related to burns management.**

## **2.Round the year training of nurses and physiotherapist**

- Every year GNM, B.Sc. and M.Sc. nursing students from various nursing colleges of Maharashtra and Gujarat undergo a 2-weeks theory cum hands-on training on Critical care in Burns at NBC.
- Bachelor and Master students of Physiotherapy from about different physiotherapy colleges of Mumbai and Navi Mumbai are posted for 2-4 weeks round the year for hands on training on Burns Physiotherapy

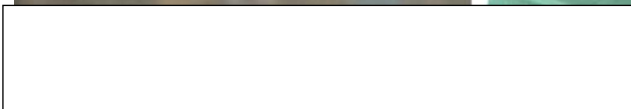
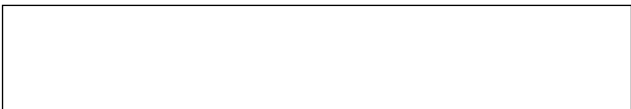
Year	No. of nurses trained (B.Sc + M.Sc)	Number of nursing colleges posting the students at NBC	No. of Physiotherapists trained	Number of colleges participated	Total
2012	157	5	128	5	285
2013	376	10	164	5	540
2014	97	6	71	4	168
<b>TOTAL</b>	<b>630</b>		<b>363</b>		<b>993</b>

**Summary- In the last 3 years, NBC has trained 993 nursing and physiotherapy students**

### **Names of nursing and Physiotherapy colleges posting their nursing student**

SL. No	Name of Nursing college/hospitals
01	Bombay College of Nursing, Mumbai
02	D.Y Patil College of Nursing, Nerul, Navi Mumbai
03	D.Y. Patil College of Nursing, Pune
04	BalabhaiNanavati College of Nursing, Mumbai
05	P.D. Hinduja College of Nursing, Mumbai
06	Hiranandani College of Nursing, Mumbai
07	MGM New Bombay College of Nursing, Navi Mumbai
08	Terna College of Nursing, Navi Mumbai
09	INHSAsvini hospital, Colaba, Mumbai
10	S.N.D.T College of Nursing, Mumbai
11	Excel College of Nursing Bhavnagar, Gujarat
SL. No	Name of Physiotherapy colleges
01	D.Y Patil College of Physiotherapy, Navi Mumbai
02	Terna college of Physiotherapy, Navi Mumbai
03	DPO's Nett College of Physiotherapy

**Representative Photographs of CMEs and Seminars held at NBC**





**Representative Photographs of National Research Symposium held at NBC**



Delegates of Research Symposium





### **3.Awareness programs on Skin Donation-**

Having built a state-of-the-art skin bank one its kind in the country, it was felt that there was almost no awareness about the importance of skin donation in the country. So NBC devoted a great amount of its resources to create awareness about SKIN DONATION over last 5 years.

#### **Statistics Awareness programs done at various levelin last five years. Yr. 2009-2014**

<b>Forum</b>	<b>Awareness method</b>	<b>Language</b>	<b>Approx.No. of programs</b>	<b>Approx. no. participants</b>
School	Audio-visual presentation	English, Hindi, Marathi	400	25000
Colleges	Audio-visual presentation & Skit play	English, Hindi,	70	14000
Professional Institutes	Audio-visual presentation & Skit play	English, Hindi,	50	1000
Housing Societies	Audio-visual presentation	English, Hindi, Marathi	60	4800
NGOs (Rotary, Lions	Audio-visual presentation	English, Hindi,	250	10000
Corporates and banks (Dena bank, Kotak, IDBI)	Audio-visual presentation	English	10	600
Industry(Asian Paints, Reliance, BPCL Ordinance Factory	Audio-visual presentation	English, Hindi	20	2000
Indian railways (Central)- Yr.2014	Audio-visual presentation	Hindi	1	115
Fire Brigade personnel	Audio-visual presentation	Hindi, Marathi	35	1010
Senior citizen clubs	Audio-visual presentation	English, Hindi	5	140
Public Seminar	Talk by Dr. Keswani	English	10	500
Indian medical Association	Talk by Dr. Sunil Keswani	English	15	850
National Conference	Talk by Dr. Sunil Keswani	English	25	5000
<b>TOTAL</b>			<b>1001</b>	<b>65,015</b>

**Summary-** In last five years NBC has organized about 1000 Skin Donation Awareness programs covering 65,000 people. As a result, the number of donation has increased **7** times from **24** in the Yr-2010-11 to **171** in the Yr-2014-15.

**Photographs of Skin Donation awareness programs at various places**



#### **4.School Education Program on Burns Prevention and Burn First-Aid**

Burns is very difficult and expensive to treat but very easy to prevent. Hence the best way to treat burns is to prevent burns. Knowing the importance of BURNS PREVENTION in our country, Dr. Manohar H. Keswani the founding father of IBRS started the School Education Program on Burns Prevention 42 years back. After the formation of IBRS, the NBC team has continued the program

##### **Key points of Program**

- The program involves a 20 minute Audio-visual presentations in English, Hindi & Marathi to class V, Vi& Vii students of Mumbai, Navi Mumbai and Thane area.
- The presentation is followed by an impact test to assess the knowledge gained.
- Each year about 100 schools covering about 10000-12000 students are covered in the program
- Top 250 students based on impact test are given prizes in a Prize distribution ceremony at the end of the year.

<b>Year</b>	<b>No of Schools</b>	<b>No. of students Participated</b>
2009	100	7500
2010	112	8300
2011	105	10000
2012	55	8000
2013	100	12000
2014	105	11500
<b>TOTAL</b>	<b>577</b>	<b>57,300</b>

##### **Photographs of School Education program**





## **OTHER TRAINING PROGRAMMES**

### **1. Burns Workshop for Industrial Safety Officer-**

#### **Key Points-**

- NBC conducts One-Day BURNS WORKSHOP for industrial safety medical officer industries like Reliance Industries on request.
- The topic of workshop includes First-Aid, Primary management, dressing techniques and transfer protocol from site of injury to Tertiary care centers.
- More than 100 safety officers have been trained in last 5 years.

### **2. Burns First-Aid training program for Fire Brigade**

Realizing the need of First- Aid training for Fire Brigade personnel, NBC in 2014 started a training program for all the fire brigade personnel of Mumbai covering around 1000 personnel of all 32 Fire stations in Mumbai.

### **3. Short term internship program for MBBS & plastic surgery students at NBC**

NBC being the one-of-its-kind tertiary-care Burns Centre in the country attracts many medical students interested in Burns training from different parts of India and abroad. All the students are trained free of cost under the guidance of eminent plastic surgeon, Dr. Sunil Keswani.

Sl. No	Name of medical student	Parent Organization	Month Year
	Dr. RanjitBains	University of Birmingham, UK	May-June 2011
	Dr.Thomas Kelly	University of Birmingham, UK	June-July 2011
	Dr. Vishal karki	Kathmandu Model Hospital, Nepal	November-2013
	Dr. Saurabh Sharma	Amrita Inst. Of Medical Science, Kochi	November-2013
	Dr. DayandJairaj	Amrita Inst. Of Medical Science, Kochi	November-2013
	Dr. AbhijitWakure	Amrita Inst. Of Medical Science, Kochi	December-2013
	Dr. Max Reiser	University of Gasgow, UK	June-July2014



### **Research Training Programs at the Skin Regeneration Laboratory-**

Over the last two years, the research laboratory has given opportunity to many bachelors, Masters Students for short –term as well as six month project training.

<b>Sl. No.</b>	<b>Name &amp; qualification</b>	<b>Parent Organization</b>	<b>Duration of training</b>
1.	Abhimanyu Sharma- M.Sc Biotechnology	D.Y Patil University	6-Months project
2	RohanChavan- M.Sc. Biotechnology	Mumbai University	6-Months project
3	Madhvikadam- M.Sc. Biotechnology	Mumbai University	6-Months project
4.	Dr. JovisJohnny- Master- MMST	IIT Kharagpur	2-months internship
5.	Prathanika Nandi- M.Sc- Biotechnology	D.Y Patil University	6-Months project
6.	ApurvaBagwe M.Sc- Biotechnology	Mumbai University	6-Months project
7.	VaishnaUpendran- M.Sc- Biotechnology	Mumbai University	6-Months project
8	PriyankaHastak- MS- Biotechnology	University of Houston, USA	6-Month internship
9	Megha Parikh M.Sc- Biotechnology	Sardar Patel University, Gujarat	6-Month internship
10	Shriya Joshi M.Sc- Biotechnology	Vellore Institute of Technology	1- Month internship
11	NimishaNichane B.Tech- Biotechnology	D.Y Patil University	1- Month internship
12	Nikita Shriyan B.Tech- Biotechnology	D.Y Patil University	1- Month internship
13	Pinky Sharma B.Tech- Biotechnology	D.Y Patil University	1- Month internship
14	ShagunWazir M.Tech- Biotechnology	D.Y Patil University	1- Month internship
15	NayanaNambiar M.Tech- Biotechnology	D.Y Patil University	1- Month internship
16	Shrinkhala Singh B.Tech- Biotechnology	D.Y Patil University	1- Month internship

### **3. Skin Donation Awareness Week celebration in the city of Mumbai**

From Yr-2012, every year, the first week of August month is celebrated as Skin Donation Awareness Week. During the week, mass awareness programs such as public seminar, talk show, art competition, essay competition etc. are organized at various places across the city of Mumbai, Thane, and Navi Mumbai to create awareness in society about Skin Donation

#### **Activities –**

1. Skin donation awareness lectures are organized in schools, colleges and corporates.
2. Standees regarding the same are also put up at 'strategic' locations in these places and elsewhere (hospitals, medical colleges, etc.)
4. Skin donation brochures are distributed at public places.
5. Relatives of skin donors for the previous year are felicitated.



Dr. Sunil Keswani addressing the prize winners of poster and essay competition conducted during the week



Bollywood Actor Vivek Oberoi amongst the audience at a Skin donation awareness seminar during Skin Donation Awareness



Skin & Organ Donation Seminar organized during the week



School students' visit to NBC Skin bank organized during the week

## **Initiative of NBC in creating skin banking facilities in Mumbai and across India.**

NBC has established a successful and replicable model of skin banking and skin donation awareness programs in Mumbai. The skin bank has been successfully running for the last five years, contributing a great deal in the better treatment of burns patients. This is the only state-of-the-art skin bank providing top quality processed donor catering to the need of entire country. NBC has also taken the initiative in actively supporting other hospitals interested in setting-up skinbanks in different parts of India by providing all necessary technical guidance.

**The details of Skin Banks being set-up under the guidance of NBC are given below.**

<b>Sl. No.</b>	<b>Place of Skin Bank</b>	<b>Local Hospital</b>	<b>Support of local NGO</b>	<b>Status-Year</b>
<b>1</b>	Surya Hospital Skin Bank, Pune, Maharashtra	Surya Hospital	Rotary Club of Khadki, Pune	Inaugurated-2012
<b>2</b>	Orange City Hospital Skin bank- Nagpur	Orange City Hospital	Rotary Club of Nagpur	In process-2014
<b>3.</b>	Ganga Hospital Skin Bank- Coimbatore	Ganga Hospital	Self	Inaugurated 2014
<b>4.</b>	St. John Hospital Skin bank- Bangalore	St. John Hospital	Rotary Club of Bangalore Midtown & R.C Brigades	In process-2014
<b>5</b>	Sum Hospital Skin Bank- Bhubaneswar, Orissa	Sum Hospital	Self	In process-2014
<b>6</b>	Kilpauk Medical College Skin Bank- Chennai	Kilpauk Medical College Hospital	Rotary Club of Chennai Galaxy	In process-2014

# **OPERATION RESTORE**

## **Free post-burn deformity corrective surgery**

Since Year 2011, NBC has been conducting free post-burn deformity corrective surgery along with the help of an USA based NGO – “OPERATION SMILE” and Rotary for first two years then with Rotary subsequent years.

### **Key facts :**

- In this camp Burns survivors of economically weaker section having functional deformities are surgically treated to correct functional deformities and contractures, reducing the patients' disabilities and improving their quality of life.
- Complete treatment including pre-operative screening, corrective surgery, and post-operative care are provided absolutely free of cost for poor patients
- Operation Restore has so far benefitted about 200 patients from all over India including from faraway places like Kerala and Chandigarh, Kolkata.
- Extensive burn related deformities which affect the functional abilities of the patient are corrected
- The burn deformity surgeries are conducted by specialized team of doctors including surgeons and anaesthesiologists, and nurses, with extensive experience in the field.
- Every year about 50-60 patients are operated to correct their post-burn functional deformity.
- 11 such camps have been successfully organized in last four years at NBC

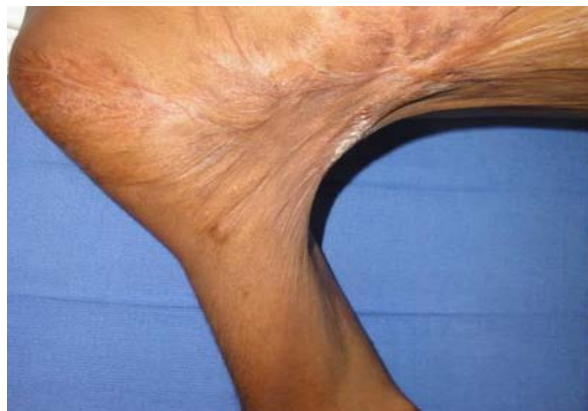
### **Why Operation Restore - The Problem of Burns**

- Hundreds of persons get burnt every day and a number of them die every day in our country
- Treatment of burns in a hospital is very costly - beyond the reach of the underprivileged
- Even if the victim's life is saved, disfigurement or crippling disabilities follow in most cases making their life miserable
- Majority of the most crippling burns cases in India are young housewives where the quality of life is affected severely. Hence the need of such free surgeries.

**NUMBER OF PATIENTS BENIFFITED IN LAST 4 YEARS CAMPS- 200**



**Previous year's cases-**  
**PRE-SURGERY**



**POST- SURGERY**



**Photographs of Previous Camps**



Dr. Sunil Keswani explaining the patient's condition to Rotary Dist. DG Dr. Bal Inamdar



Surgery in progress of Operation Restore



A beneficiary of Camp sharing experience in subsequent camp



## **NBCCollaborations**

NBC has been associated with many philanthropic organizations over the years for helping NBC in different ways to provide quality Burn care at affordable rate to all sections of the society.

### **The list is associates-**

<b>Sl. No</b>	<b>Organization name</b>	<b>Area of collaboration</b>
<b>1</b>	Sir Dorabji Tata Trust	Patient care
<b>2</b>	Sir Ratan Tata Trust	Patient care
	Rotary International District 3140	Patient care
<b>3</b>	Euro Skin Bank	Skin banking
<b>4.</b>	Operation Smile , USA	Free post-burn contracture surgery camp
<b>5.</b>	Indian Institute of Technology, Kharagpur	Research
<b>6</b>	Indian Institute of Technology, Bombay	Research
<b>7</b>	Advance Center for Treatment, Research & Education in Cancer, Navi Mumbai	Research
<b>8.</b>	Institute of Chemical Technology, Mumbai	Research

**END OF REPORT**