

The Constitution of India ensures equality, freedom, justice and dignity of all individuals and implicitly mandates a comprehensive society for all, including persons with disabilities. Concerned over the government has initiated several welfare measures for their socio-economic empowerment. This Institute, NIOH is such initiative taken in late seventies and was established in 1978 as a registered society under Societies Act'1860, in 1982 only under then Ministry of Welfare (now Social Justice and Empowerment), Government of India. NIOH is a premier and one such institution in the area of locomotor disability (Orthopaedically Handicapped).

OBJECTIVES

- Human Resource Development to develop manpower for providing services to the Orthopaedically Handicapped population, namely training of Physiotherapists, Occupational Therapists, Orthotic & Prosthetic technicians, Employment & Placement Officers and Vocational Counselor etc
- To conduct and sponsor research in all aspects related to the rehabilitation of the orthopaedically handicapped.
- To provide services in the area of rehabilitation, restorative surgery, aids & appliances and vocational training to the persons with disability.
- To standardize aids & appliances and to promote their manufacture & distribution.
- To provide consultancy services to the State Governments and voluntary agencies.
- To serve as an apex documentation & information centre in the area of disability & rehabilitation.

ACTIVITIES AT A GLANCE

1. Human Resource Development:

a. Long term training programs:

- Diplomat National Board (D. N. B) in Physical Medicine & Rehabilitation
- Post Graduate Diploma in Disability Rehabilitation & Management (PGDDRM)
- Bachelor in Physiotherapy
- Bachelor in Occupational Therapy
- Bachelor in Prosthetics & Orthotics
- Diploma in Multipurpose Rehabilitation Work
- Diploma in Tool & Die Making
- Diploma in CAD-CAM
- Certificate in Prosthetics & Orthotics

These courses were undertaken at kolkata campus and outside with total intake capacity 133 All these courses were open all admission made on All India basis, entrance test at degree courses and open interview in others.

b. Short term Training programs:

Twenty one training programs were conducted during the year 2006-2007 to benefit 4403 participants from different parts of the country.

2. Rehabilitation Services:

a. Outreach services

To meet the rehabilitation needs of the persons with disability in a decentralized manner, twenty nine camps were organized countrywide mainly in the areas located in the states of West Bengal, Bihar, Jharkhand, Uttar Pradesh, Assam, Nagaland & Meghalaya etc to benefit 8397 persons directly and more than lakh indirectly by creating awareness. To assist in their comprehensive rehabilitation, Assistive aids/appliances were prescribed, customized, fabricated and fitted wherever needed to 2830 disabled persons. In 431 cases with deformity/contracture requiring surgical intervention before fitment of assistive aid for their mobility were operated through eight camps organized in collaboration with local organizers.

b. Institutional services

The Institute provided rehabilitation services in the following areas:

i. Medical Rehabilitation Services

15183 new and 17404 follow up cases were provided rehabilitation services by a team of professionals consisting of experts from medical, therapy, prosthetics/orthotics and social sciences etc.

ii. Therapy

Physiotherapy and Occupational therapy services were provided to 46164 through 108902 therapy sittings to OPD cases besides regular services to the indoor patients.

iii. Prosthetic & Orthotic services:

The assistive aids/appliances were designed, fabricated, modified and fitted to 4280 disabled persons in the Institute OPD/IPD as per their need after assessment for the individual.

iv. Socio-economic services

Facilitation, counseling & guidance services were provided to 4472 persons for self-reliance & economic empowerment. Technical consultancy services to NGOs were provided to promote integration and to mainstream the persons with disability.

As a nodal agency of National Handicapped Finance Development Corporation, the Institute also extended self employment and entrepreneurship development services to 205 persons with disabilities.

v. Indoor Medical Rehabilitation Services

364 patients were provided comprehensive medical rehabilitation services through indoor ward. 1648 persons were benefited by surgical intervention.

vi. Diagnostic Services

15761 pathological, radiological and electro-diagnostic tests were carried out for OPD/IPD cases.

vii. Facilitation services

Information related to facilities, schemes & programs of Govt/NGOs for disabled persons were made available to 7134 individuals.

Information and guidance were also provided through postal services, internet & through website.

viii. Geriatric Rehabilitation Clinic

To offer rehabilitation services to the senior citizens through single window service bi-weekly 'Geriatric Clinic' being organized.

3. Research and Development:

Under Research and Development activities, the following projects were carried out during the year.

1. Quantitative analysis of gait pattern of AK and BK amputee with different type of Prosthetic Feet, under S & T mission mode, completed.
2. Myo-electric hand in collaboration with CSIO, Chandigarh
3. Robotic Wheel Chair collaborative with CDAC, Trivandrum
4. Development of prefabricated lower limb orthosis.
5. Development of Multi-use Wheel Chair
6. Low cost force plat for Persons with locomotor disability to measure stability- collaboration with Jadavpur University.

Pilot Project

7. Paediatric prosthesis
8. Development of pressure sore preventives device in wheel chair
9. Disability Evaluation –Self Assessment-Tele-rehabilitation.
10. Disability Mapping

4. Community Based Rehabilitation Services:

The projects on ‘Community Based Rehabilitation’ services were undertaken by the Institute under Department of Socioeconomic Rehabilitation in a rural & urban slum area. Over a lakh persons were covered and provided basic rehabilitation services along with medical services using community resources. 437 disabled persons were integrated in the community after identification and appropriate intervention.

5. Information & Documentation:

The Information & Documentation section has collection of 6000 (approx.) subject books and journals, videocassettes, information folders on facilities under Govt./NGO sector, rehabilitation aids/ appliances and legislations relating to PWD. Some information materials were also translated from English to Indian languages.

18007 individuals were provided library services and 4418 availed internet access. Some other services like Selective Dissemination of Information (SDI), Inter-library loan from BCL and AIRC were also introduced in the section during the year.

1. TRAINING PROGRAMMES

a) Long Term Training Programmes

The following long term regular courses are being conducted at the Institute.

| | Course | Duration | Collaboration | Affiliation |
|----|---|-----------------|--|--|
| 1. | Diplomat National Board (PMR) | 2 yrs | - | National Board of Examinations |
| 2. | PGDDRM | 1yr | - | Applied to West Bengal University of Health & Sciences (W.B.U.H & S) |
| 3. | Bachelor in Physiotherapy (BPT) | 4 ½ yrs | | West Bengal University of Health & Sciences (W.B.U.H & S) |
| 4. | Bachelor in Occupational Therapy (BOT) | 4 ½ yrs | - | -do- |
| 5. | Bachelor in Prosthetics & Orthotics (BPO) | 4 ½ yrs | - | -do- |
| 6. | Diploma in MRW | 1 ½ yrs | NGO | - |
| 7. | Diploma in Tool & Die Making | 4 ½ yrs | CTTC, Kolkata | - |
| 8. | Diploma in CAD-CAM- | 1 yr | Tool Rooms at Kolkata, Ludhiana & Ahmedabad | - |
| 9. | Certificate in Prosthetics & Orthotics Technician (CPO) | 1 yr | At RC-Aizwal Dehradon & DDRC Allahabad, Ranchi | Applied to RCI |

Above degree and post graduate diploma courses were affiliated to West Bengal University of Health & Sciences, DNB (PMR) accredited with National Board of Examination, New Delhi. Diploma in Tool and Die Making (collaborative) with Central Tool Room & Training Centre, Kolkata.

The degree courses in PT,OT and P&O affiliated with Calcutta University earlier were also continued.

Degree Courses :

Details of bachelor courses affiliated with West Bengal University of Health & Sciences are given below.

| Sl. No | Name of Course | Duration | Intake |
|--------------|---|----------|-----------|
| 1 | Bachelor of Physiotherapy (BPT) | 4 ½ yrs | 30+1+3=34 |
| 2 | Bachelor of Occupational Therapy(BOT) | 4 ½ yrs | 30+1+2=33 |
| 3 | Bachelor of Prosthetic & Orthotic (BPO) | 4 ½ yrs | 20+1+2=23 |
| Total | | | 90 |

After successful completion of the course duration of four years, a student had to undergo compulsorily six months internship.

In response to our request for increase in intake capacity for the bachelor courses the West Bengal University of Health & Sciences, increased the intake from 20 students to 30 students for the BPT/BOT and from 10 students to 20 students for BPO.

The eligibility for admission to said degree courses was 10+2 pass with 50% marks having five subjects. The candidates were admitted through an all India Common Entrance Examination conducted through different centers throughout India in the month of July.

Three students were admitted against the seven seats reserved for the nominees of the GOI from backward states of North East Region, and three students were admitted against three seats reserved for J&K and Himanchal Pradesh.

To conduct these courses, the core faculties of Institute were supplemented by outsourced faculty from the medical and engineering colleges, Calcutta University, BIT, IIM, AIHH&PH, Kolkata and Bishwa Bharati, Shantiniketan etc.

ii. Diploma in MRW

This diploma course of eighteen months duration was undertaken to train manpower to provide rehabilitation services at middle level to meet the requirement at field level / NGOs. The course capacity was of 20 seats and continued since from 1999-2000 sessions in collaboration with Viklang Kendra, an NGO at Allahabad, U.P, under recognition by the Rehabilitation Council of India.

iii. Post Graduate Diploma in Disability Rehabilitation Management (PGDDRM)

This post-graduate diploma of one academic year duration having capacity of ten seats was introduced from the 1999-2000 session. This program was aimed to impart management skills to the rehabilitation professionals for the purpose of wider exposure and to inculcate a coordinated approach towards rehabilitation. The course was started in collaboration with Department of Family & Child Welfare, Tata Institute of Social Sciences, Mumbai, initially. The RCI, New Delhi affiliated course was requested for recognition under West Bengal University of Health Sciences.

iv. Diploma in Tool & Die Making

To impart job oriented vocational training for disabled, this model course was started in collaboration with 'Centre Tool Room & Training Centre' Ministry of Small Scale Industries, GOI at Kolkata adopting an integrated approach. The duration of course was four years.

v. Certificate in Prosthetics & Orthotics Technician (CPO)

This certificate course of one academic year duration with capacity of 12 students was started at Regional Centre Aizwal & Dehradun and at collaborative centres at Allahabad & Ranchi, during session 2005-2006.

b) Short Term Training Programmes :

One of the major activities of the Institute was manpower development through short term training programs, seminars, workshops, sensitization programs on disability related issues etc.

During the current year, twenty one programs were organized to benefit 4403 participants. The list of programs organized during the year is enclosed as Annexure-I.

2. REHABILITATION SERVICES

The Institute provides comprehensive rehabilitation services to the persons with loco-motor disabilities. A detailed assessment of the individual was made in the OPD clinic followed by a preparation of rehabilitation plan, jointly by a team consisting of Physiatrist / Orthopaedic Surgeon, Physiotherapist, Occupational Therapist, Social Worker, Vocational Counselor and Prosthetist / Orthotist etc. Subsequently, intensive rehabilitation services were provided by respective department, as required.

The beneficiaries of said services were from different parts of country, predominantly from West Bengal, Bihar, North Eastern states and from neighboring countries like Bangladesh, Nepal. The nature of cases seen at the OPD/Assessment clinics include post polio syndrome, residual paralysis, congenital limb deficiencies/deformities, amputees, cerebral palsy, spinal deformities, auto-immune disorders, spastics, neuromuscular disorder and degenerative conditions etc.

Rehabilitation Services: *These involve*

- Disability Assessment
- Medical treatment & restorative surgery
- Physiotherapy
- Occupational Therapy
- Prosthetic & Orthotic aids
- In -patient services.
- Socio-economic rehabilitation
- Facilitation, counseling and guidance.
- Diagnostics services as Radiology, Pathology, Electro-diagnosis, Urodynami.
- Disability prevention clinic.
- Special Clinics-Geriatric, Check out clinic

Quantitative statement of beneficiaries during 2005-06 & preceding years.

| | 2004-2005 | 2005-2006 | 2006-2007 |
|---|------------------|------------------|------------------|
| Assessment Clinic | | | |
| New cases | 13398 | 13595 | 15183 |
| Follow-ups | 17241 | 16060 | 17404 |
| Physiotherapy | | | |
| New cases | 5646 | 4935 | 5459 |
| Follow-ups | 33253 | 29527 | 28049 |
| Services | 72094 | 63980 | 70964 |
| Occupational Therapy | | | |
| New cases | 1293 | 1858 | 1243 |
| Follow-ups | 9811 | 10337 | 11034 |
| Services | 15689 | 14951 | 37938 |
| Restrictive Surgery (No of patients operated) | | | |
| Major Operations | 247 | 140 | 271 |
| Minor Operations | 1162 | 1066 | 1377 |
| Prosthesis & Orthosis | 1501 | 1729 | 1777 |
| Rehabilitation aids | 1705 | 2658 | 2476 |
| No of in- patients | 131 | 116 | 364 |
| Vocational counseling | 700 | 512 | 531 |
| Social counseling | 1492 | 1256 | 2573 |
| Psychological- counseling | 135 | 658 | 720 |
| X- Rays (no of exposures) | 4734 | 4348 | 5037 |
| Pathological tests (no of tests) | 9999 | 7883 | 8573 |
| Electro diagnostic test | | | |
| EMG, NCV etc. (no of cases attended) | 1326 | 1714 | 2151 |

2.1 Department of Physiotherapy

The faculty & staff engaged in services of physiotherapy primarily were grouped under this department. The activities of the department include therapeutic services to indoor and outdoor patients, teaching & training, participation in the outreach program and research activities etc.

During current year, there were students of four batches of degree course in Physiotherapy (BPT), simultaneously.

No. of students in the department during the year

| BPT | Ist year | IIInd year | IIIrd year | IIIrd year(CU) | Internship |
|----------------|----------|------------|------------|----------------|------------|
| No of students | 31 | 20 | 22 | 20 | 23 |

The department was equipped with necessary machines including sophisticated machines like Diapulse, Interferential unit, Mediec MS-60 EMG-EP Unit, Bio-Stim 6040, Phy-Action 787, ISO-Kinetic Dynamometer etc. to provide specialized therapeutic services.

Services by various sub units during the preceding three year were

| Year/ No. of Cases | S W Diathermy | Isokinetic | Ultra Sound Therapy | Electric Stimulation | Traction | Laser Therapy | Advance Electric Stimulation | Infrared | Hydro Therapy |
|--------------------|---------------|------------|---------------------|----------------------|----------|---------------|------------------------------|----------|---------------|
| 06-07 | 10095 | 52 | 11118 | 764 | 9062 | - | 3604 | 452 | 335 |
| 05-06 | 10878 | 9 | 9553 | 773 | 8058 | - | 2695 | - | 33 |
| 04-05 | 12216 | 9 | 10452 | 1446 | 8919 | 366 | 3123 | 932 | 615 |

Comparative statement of Performance of Department of Physiotherapy

| No. of cases /Year | 2004-05 | 2005-06 | 2006-07 |
|--------------------|---------|---------|---------|
| New cases | 5646 | 4935 | 5459 |
| Ongoing Cases | 33253 | 29527 | 28049 |

Academic Activity

There was one academic program, 'Bachelor in Physiotherapy' of four years duration with six months compulsory internship run under department. The said course was affiliated with West Bengal University of Health Sciences, Kolkata. During the academic session, thirty one students were admitted including one nominee from North Eastern Region and one reserved candidate from J & K and Himachal Pradesh. During the year the intake capacity was increased from 20 to 30 students.

In addition to the above, short-term training programs, research projects were also undertaken.

2.2 Department of Occupational Therapy:

The faculty & staff engaged for occupational therapy primarily were grouped under this department. The activities of the department include therapeutic services to patients through indoor, outdoor & outreach, teaching & training and R&D etc. To improve the performance of the persons with disability in activities of daily livings (ADL), customized occupational activities were used. This therapy is community oriented, cost effective and more suitable for developing countries. With the modern gadgets, it has a definitive role in work assessment, modification in work station to improve efficiency and to reduce loss of man-days in the industrial set up.

Developments of adaptive devices are other important areas of occupational therapy. Apart from the services to indoor and outdoor patients, manpower development through long and short term training programs, refresher courses for therapists and research activities were taken up.

There were following sub units under the department.

- Pediatric Rehabilitation
- ADL training
- Splint & adaptive devices
- Hand therapy
- Special Education
- EMG Bio-feedback

Services rendered through sub units. Services rendered through sub units were.

| Year | General Occupational therapy | Paediatric Occupational Therapy | Activities of Daily living | Hand Therapy unit | Counseling/ early intervention (Spl.Ed.) | Biofeedback |
|---------|------------------------------|---------------------------------|----------------------------|-------------------|--|-------------|
| 2006-07 | 12550 | 14286 | 4612 | 5451 | 530 | 509 |
| 2005-06 | 5078 | 5364 | 1992 | 2923 | 698 | 202 |
| 2004-05 | 5432 | 4587 | 2793 | 2743 | 1101 | 184 |

Academic Activity

The Bachelor in Occupational Therapy (BOT) course was conducted in the Department. The course was of four years duration with six months compulsory internship run under affiliation with West Bengal University of Health Sciences, Kolkata. Thirty three students including one nominee from North Eastern region and one reserved candidates from J & K and Himachal Pradesh, were admitted through the All India Joint Entrance Examination during the academic session. During the year the intake capacity was increased from 20 to 30 students, leaving nominee and reserved number intact.

No. of students in the department during the year

| BOT | Ist yr | IInd yr | IIIrd yr | IIIrd yr (CU) | Internship |
|----------------|--------|---------|----------|---------------|------------|
| No of students | 33 | 21 | 17 | 19 | 17 |

The Department also conducted short-term training programs under continued education for the professionals besides services to the persons with disabilities.

Occupational Therapy services during the year were as under.

| No of cases/year | 2004-05 | 2005-06 | 2006-07 |
|------------------|---------|---------|---------|
| New | 1293 | 1858 | 1243 |
| Follow up | 9811 | 10337 | 11034 |

2.3 Department of Prosthetics & Orthotics

Like other department, the faculty & staff engaged in prosthetics & orthotics, primarily were grouped under this department. In addition to human resource development in the area of Prosthetics & Orthotics, to provide assistive aids and appliances, the services of this department were used to design, fabricate, modify and fit required aids/appliance as prescription and individual's need, services of prosthetist cum orthotist were used. The prosthetic/ orthotic appliances were to assist, to improve functions and /or prevent further complications in the affected parts of disabled. The P&O workshop for fabrication of aids/appliances in the department was also used as laboratory for practical training for the students.

Academic Activity

There was one '**Bachelor in Prosthetics and Orthotics**' course under the department. The duration of course was of four year with annual intake of twenty one candidates including one Govt. Nominee from North Eastern state and one reserved candidate from J & K and Himachal Pradesh under affiliation to West Bengal University of Health Sciences, Kolkata. The said degree courses were followed by six months compulsory internship. During the academic session 2006-2007 intake capacity were augmented from 10 to 20 student

To open opportunity for diploma students for their up-gradation, a bridge course (condensed BPO) of one academic year duration run by JR Handicapped University, Chittrakut was undertaken through their constituent college in the campus. The bridge course was through distance mode and contact classes at NIOH. It was approved by RCI, New Delhi. 40 students were admitted.

No. of students in the department during the year

| Year-wise std strength | Ist year | IInd Yr | IIIrd Year | IIIrdYear(CU) | Internship |
|---------------------------------|----------|--|------------|---------------|------------|
| BPO | 22 | 11 | 13 | 11 | 8 |
| Bridge course (condence BPO) | 40 | 35 students of Bridge Course, first batch appeared for examination, only 29 students awarded pass certificate. | | | |

Besides training & teaching, department also provided prosthetic & orthotic services to the disabled through indoor, outdoor and camps.

The break up of Prosthetic & Orthotic services provided during the year.

| Year/Types of Aids | 2004-05 | 2005-06 | 2006-07 |
|--|---------|---------|---------|
| Prosthesis (Upper & Lower) | 311 | 265 | 303 |
| Orthosis (upper, lower Caliper, Spinal braces) | 1190 | 1464 | 1474 |

| | | | |
|--|------|------|------|
| Rehabilitation Aids (Crutch, Wheel Chair, Tri-Wheeler) | 1705 | 2658 | 2476 |
|--|------|------|------|

Institute provided aids and appliances to the disabled through OPD and camps under ADIP scheme. The persons having monthly income less than 6500/pm are being provided 100% subsidy. More than 95% persons were covered under this and provided aids & appliances as given below

| | Aids & Appliances/ year | 2004-05 | 2005-06 | 2006-07 |
|---|-------------------------------------|----------------|----------------|----------------|
| 1 | NIOH OPD Aids & Appliances | 3206 | 4387 | 4253 |
| 2 | Out reach -No. of Aids & Appliances | 2494 | 11900 | 2254 |
| 3 | RC&DDRCs-No. of Aids & Appliances | 2494 | 11900 | 1391 |