



Dow University of Health Sciences

Standardized Annual Report

FY 2015-2016

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Executive Summary

Dow University of Health Sciences is one of the most renowned educational institutions of Pakistan. Since its inception in 2003, this University has been the fastest growing healthcare institution of the country. The University has the distinction of being the largest medical university of the country with more than twenty academic schools/colleges and Institutes, which are providing education to more than 7000 students.

The Dow University of Health Sciences (DUHS) offers a multitude of undergraduate and postgraduate programs that cater to the needs in healthcare sciences by providing quality human resources. The University provides excellent academic facilities through its fully equipped laboratories, museums, information technology including video conferencing facility besides good logistic facilities at departments, hostels and the campuses in general.

At global level, the research creates a demarcation between the curricula of undergraduate and graduate level studies. DUHS also puts much emphasis to integrate research as part of regular curriculum as well as community work. The research when taught to students in the beginning develops their habit of learning and acquiring information through primary data sources.

Students have opportunities to participate in hands on training workshops and professional trainings offered by the Professional Development Centers (PDC) of the university, which are fully equipped with manikins, simulators, simulating I.C.U, and operation theatre, along with providing other equipment and simulations for the training of postgraduates. There is a separate skills lab for the training of undergraduates.

The Dow University of Health Sciences, since its inception has been focusing on community services to provide preventive, diagnostic and treatment facilities for community health care specially to the under privileged class. The students of various undergraduate and postgraduate programs of DUHS are also actively involved with the faculty members in all the civic engagements of DUHS.

ABOUT THE UNIVERSITY

VISION STATEMENT

To be an academic leader by generating creative, collaborative, contextual resources to improve health and education by all possible means.

MISSION STATEMENT

To provide leadership in creating and imparting knowledge through excellence in research and education with the aim to provide cost effective, contextually relevant and quality community services through its faculty, staff and graduates, with continuous efforts for improvement through reflection and learning.

Goals of Dow University of Health Sciences

The defined GOALS of the University are:

- *Development and utilization of contemporary approaches in education and research to nurture future leaders in health professions.*
- *Promote an atmosphere of mutual respect, trust and teamwork to achieve the common goal of health care.*
- *Share and enhance knowledge and expertise through national and international collaborations*
- *Foster research through scientific investigations and capacity building in collaborations with local and global organizations.*
- *Reward scholarship in research, education and services to dedicated & successful persons.*
- *Impart Health Education to the masses for improving health status of the community.*
- *Identify and resolve issues affecting health and well-being of the communities in collaboration with all the stakeholders.*
- *Identify and resolve issues affecting health and well-being of students, faculty, staff and administration.*
- *Promote and practice cost effective, evidence-based service in local context.*
- *Ensure dynamism of the Institution by reflecting, reviewing, and revising the practices.*

Constituent Colleges & Institutes of DUHS

| S No. | Name of Institute |
|-------|--|
| 1 | Dow Medical College (DMC) |
| 2 | Dow Dental College (DDC) |
| 3 | Dow International Dental College (DIDC) |
| 4 | Dow International Medical College (DIMC) |
| 5 | Dr. Ishrat-ul-Ebad Institute of Oral Health Sciences (DIKIOHS) |
| 6 | Dow College of Pharmacy (DCOP) |
| 7 | Institute of Health Management (IHM) |
| 8 | Dow Institute of Health Professionals Education (DIHPE) |
| 9 | Dow Institute of Radiology (DIR) |
| 10 | Institute of Nursing (ION) |
| 11 | Institute of Physical Medicine & Rehabilitation (IPM&R) |
| 12 | Institutes of Medical Technology (IMT) |
| 13 | School of Public Health (SPH) |
| 14 | Dow Research Institute of Bio-Technology & Bio-Medical Sciences (DRIBBS) |
| 15 | Dow College of Bio-Technology (DCOB) |
| 16 | Dow School of Bio-Medical Engineering Technology (DSBMET) |
| 17 | Institute of Basic Medical Sciences (IBMS) |
| 18 | Ojha Institute of Chest Diseases (OICD) |
| 19 | National Institute of Diabetes & Endocrinology (NIDE) |
| 20 | National Institute of Solid Organ & Tissue Transplant (NISOTT) |
| 21 | National Institute of Liver & GI Diseases (NILGID) |

| Departments & Centers of The Dow University of Health Sciences | |
|---|--|
| 1. | Department of Research |
| 2. | Department of Post Graduate Studies (DPGS) |
| 3. | Professional Development Centre (PDC) |
| 4. | Office of Research, Innovation, and Commercialization (ORIC) |
| 5. | Information Technology Department (IT) |
| 6. | Campus Management Solution (CMS) |
| 7. | Quality Enhancement Cell (QEC) |
| 8. | Finance Directorate |
| 9. | Planning and Development Department |
| 10. | Procurement Department |
| 11. | Examination Department |
| 12. | Question Bank (Q Bank) |
| 13. | Admission Department |
| 14. | Clinical Trial Unit (CTU) |
| 15. | Laboratory Animal house |
| 16. | Library |
| 17. | Dow Vocational Technical Training Centre (DVTTC) |
| 18. | Learning Resource Centre (LRC) |
| 19. | Dow Diagnostic Research & Reference Laboratory (DDRRL) |
| 20. | Sleep Lab (Polysomnography) |
| 21. | Thoracic Surgery Department |
| 22. | Bariatric Surgery Department |
| 23. | Day Care Centre |
| 24. | Centre of Cochlear Implant |
| 25. | Serobiological Centre DUHS (for anti-snake venom) |
| 26. | Dow LEJ Campus |
| 27. | Satellite Dow Clinic in Mehran Town, Korangi |
| 28. | Satellite Clinic in Nazimabad |

Brief Profiles of Institutes & College Offering Academic Programs

Dow Medical College (DMC)

Dow Medical College (DMC) is one of the oldest medical college in Sindh and the second oldest in Pakistan. It was established in 1945. It has a highly qualified and experienced faculty who has been involved in the teaching and training of medical students since the establishment of the college. Over more than 60 years, the college has produced around 17 thousands alumni who have been serving with distinction all over the world. It has attached to Civil Hospital Karachi, Pakistan's largest teaching hospital with departments of almost all major specialties with more than 2000 bed occupancy. The students are imparted clinical teaching in this hospital.

Teaching is on semester basis. The five years course has been divided in 10 semesters. A new system of integrated teaching comprises of applied knowledge in which the students are taught basic subjects in the usual manner, which is later on followed by clinically oriented teaching sessions to explain the clinical application of the basic knowledge. The alumni of Dow University of Health Sciences are serving all over the world in different capacities including senior academic positions, research scholars and clinicians.

Dow International Medical College (DIMC)

Dow International Medical College was established in order to facilitate children of overseas Pakistanis as they face various difficulties in entering into medical profession abroad. It is a 150 seat Medical College that has been recognized internationally as it has been included in INTERNATIONAL MEDICAL EDUCATION DIRECTORY (IMED).

The laboratories are fully equipped with the most modern equipment, including power labs, lecture halls, tutorial rooms and other basic laboratories. Classrooms/lecture halls are fully air-conditioned and powerful generators provide electricity around the clock in case of power failure. A state of the art gymnasium and sports and recreational complex also provides extra-curricular activities to the students. Separate hostels for boys and girls are available along within the same campus with a regularly monitored security system. Clinical training for the MBBS program of DIMC is provided in the 800-bedded Dow University Hospital.

Dow College of Pharmacy (DCOP)

Dow College of Pharmacy (DCOP) was established in 2007, and it is recognized and accredited by the Pharmacy Council of Pakistan. Dow College of Pharmacy provides pharmacy education to its students, offering graduate and post-graduate degree programs in the field of pharmacy:

1. Pharm D (Morning and Evening)- A Five years Program for degree of Doctor of Pharmacy
2. Master Philosophy

Dow College of pharmacy is a leading institute in training of the allied healthcare professionals who are able to conduct innovative research, provide quality pharmaceutical care and consultancies, along with being at the forefront in formulating pharmaceutical products.

The college is well equipped with audiovisual enabled lecture halls, fully equipped laboratories for Pharmaceutics, Pharmacology, Pharmaceutical Chemistry, Pharmacognosy, Industrial Pharmacy, Quality Assurance, Instrumentation, Anatomy, Physiology and Pathology, Microbiology.

Institute of Nursing (ION)

Institute of Nursing was established in June, 2006 with the help of Higher Education Commission (HEC) Pakistan. It is envisioned to promote nursing education in Pakistan, preparing the leaders in the nursing and producing a sufficient number of highly skilled and trained nursing professionals who can meet the challenges of modern preventive and curative healthcare.

The Institute of Nursing has a state-of-art building and all the modern facilities of teaching and learning. Both undergraduate and post-graduate programs are offered at Institute of Nursing. For nearly 11 years, the Institute has helped prepare qualified professional nurses to work as highly skilled nursing staff, competent teachers and leaders in public and private health care sectors.

The Institute of Nursing represents a strong and extraordinary community of excellent students, well-prepared faculty, dedicated staff, and supportive alumni

The institute is currently offering following programs:

1. Masters in Nursing (MSN)
2. Post RN BSc Nursing
3. BS Nursing

All programs, which are offered at Institute of Nursing are accredited by Pakistan Nursing Council (PNC) and Higher Education Commission (HEC), Pakistan.

Dr. Ishrat-ul-Ibad Khan Institute of Oral Health Sciences (DIKIOHS)

Dr. Ishrat ul Ebad Khan Institute of Oral Health Sciences (DIKIOHS) is offering the following programs:

- Bachelor in Dental Surgery (BDS)
- Bachelor in Dental Care Professionals (DCP)
- Masters in Dental Surgery (MDS)

This institute currently has:

The Dental College for imparting under-graduate dental education leading to the degree of Bachelor of Dental Surgery (BDS), fulfilling the requirements of the Pakistan Medical & Dental Council (PM&DC). Training in all Basic and Clinical Dental sciences, and Community Dental Health is provided under the Semester System. Currently there are departments of Oral & Maxillofacial Surgery, Prosthodontics, Oral Pathology & Oral Microbiology, Oral Medicine, Periodontology, Oral Biology and Tooth Morphology, Sciences of Dental Materials, and Community Dentistry.

This college is one of the four in the country, which has been permitted to enroll 100 undergraduate dental students every year.

b) The Dental Hospital. With 125 dental chairs, has Nine Out-patient Departments namely Oral Diagnosis, Oral Surgery, Oral Medicine, Oral Radiology, Periodontology, Prosthodontics, Crown & Bridge, Orthodontics and Operative Dentistry, Procedures including extraction of teeth, filling, root canal, capping and emergency oral treatment is offered. The clinical work at the hospital is augmented by best practice, good sterilization protocols and requisite gadgetry. All its departments are provided with material and equipment, which are further provided to patients at minimum cost.

c) Post Graduate Training and Research Centre of DIKIOHS is providing fellowship (FCPS) Part II training at the Departments of Orthodontics, Prosthodontics, and Oral Surgery, after being recognized by College of Physicians & Surgeon (CPSP).

Institute of Health Management (IHM)

Institute of Health Management is a constituent part of Dow University of Health Sciences and was established in 2007 to offer programs in Healthcare Management. The institute was established with the aim of creating an environment that facilitates learning and innovation, to bridge the gap between academia and healthcare industry, and to provide quality graduates to contribute to the healthcare workforce. Institute of Health Management (IHM) is a unique blend of partnerships with pharmaceutical industry, health care providers and hospitals of Pakistan. In order to meet objectives of providing quality health managers, IHM is offering following programs:

- Bachelors of Business Administration- BBA
- Masters of Business Administration - MBA (regular)
- Executive Masters of Business Administration- (EMBA)

Institute of Medical Technology (IMT)

Medical Technologists are recognized globally as important and essential members of the health care team, not only for routine medical and surgical care but also for emergency medicine, critical care and management of disaster victims. The Institute of Medical Technology of Dow University was established for Human resource development in these areas.

It offers a four years degree program in following specialties:

- Clinical Pathology
- Critical Care
- Operation Theatre
- Ophthalmology
- Perfusion Science Technology

It has eight semesters over four years and comprises of a core course where training is imparted in Basic Computer Skills, English proficiency, Behavioral Sciences, Research Methodology and Fundamentals of Basic Medical Sciences. The Institute has its own state of the art Skill Laboratory and a 26 station Digital library with Internet and PERN connectivity. Practical classes are held in well-equipped Science laboratories.

Additional training programs at Institute of Medical Technology include:

- Adult Echocardiography / vascular technician course
- Cardiac technologist training program
- Electrocardiography training program
- Technician courses for ultrasound, radiography, CT scan and MRI

Institute of Physical Medicine and Rehabilitation (IPM&R)

Institute of Physical Medicine and Rehabilitation was established in August 2007 and since then it is making a difference in the lives of people with disabilities through multidisciplinary Rehabilitative care to restore fullest possible, physical, mental, social and economic independence.

IPM&R is committed to provide comprehensive multidisciplinary rehabilitation services and evidence based practice to help the patients return to an active and healthy lifestyle. IPM&R is dedicated to being an internationally significant rehabilitation institute in the promotion, development and dissemination of research and education in the science of Rehabilitation through its activities and partnerships with internal and external communities.

Dow International Dental College (DIDC)

Dow International Dental College (DIDC) has been established at Ojha Campus, to meet deficiency of dental surgeons in Pakistan as well as abroad. It is located on the Top floors of DIMC building and offers admissions mainly to overseas students, however due to acute deficiency of Dental Surgeons; the option for admission is also given to local students.

Pakistan Medical & Dental Council (PM&DC) has recognized this college in 2011 for fifty students. Two batches of BDS are presently studying at DIDC. This college is fully equipped with most modern facilities including regular library having books, journals etc besides the digital library.

Dow Dental College (DDC)

Dow Dental College (DDC) was established in November 2012 at Dow Medical College (DMC). The College is recognized and registered with PMDC for BDS (4 year) program and is authorized to take 50 students per annum.

DDC is working to prepare competent and professional dentists in the existing oral health care educational and patient management system in Pakistan and outside the country with a focus to serve community and research and to develop academic excellence and to deliver the utmost

quality of scientifically proven preventive, educational and therapeutic services to the community.

This college and its dental hospital are fully equipped with most modern equipment in the laboratories along with simulators to teach clinical procedures at pre-clinical & clinical level. It has highly qualified and experienced faculty who carry out all dental procedures ranging from simple diagnostic procedures to extractions and implant placements.

National Institute of Diabetes and Endocrinology (NIDE)

It was established in 2006. It provides consultation and counseling of patients suffering from Diabetes and other Endocrine diseases. This institute is offering a two-year Master's program in Diabetes & Endocrinology. This institute is also conducting public awareness programs regularly as the prevalence of diabetes and endocrine diseases are on the rise in Pakistan, in particular Sindh. This institute also has facilities for management and treatment of eye complications of diabetes through its Eye Care Center, which offers the patients:

- Complete Eye Examinations
- Screening for Diabetic Retinopathy
- Fundus Fluorescein Angiography
- Laser photocoagulation

More than 5000 patients have been registered. A comprehensive facility for diabetic diet consultation, foot care, early diagnosis and treatment based facilities for other endocrine diseases, especially thyroid diseases, growth disorders and obesity, is also offered to the patients.

National Institute of Liver and GI Diseases (NILGID)

The National Institute of Liver & GI Diseases NILGID has been established at Ojha Campus. Approximately 100 patients are seen and managed each day in NILGID OPD that comprise the full spectrum of liver and GI diseases ranging from functional dyspepsia to Hepatitis B and C, other liver diseases and gastrointestinal tumors. The OPD is conducted from 8 am to 8 pm. NILGID has state of the art endoscopic equipment and the faculty has the expertise to perform all the GI endoscopic procedures. Approximately 20 to 25 endoscopic procedures are being done daily that includes both the diagnostic as well as therapeutic procedures; Gastrosopies, colonoscopies, polypectomies, and variceal band ligation are routinely being done. In addition, complex therapeutic procedures that involve fluoroscopy like ERCPs, stenting, dilatations are also increasingly being performed in the unit. The Endoscopy department provides round the clock coverage for all GI emergencies; the coverage also includes all public holidays.

NILGID has a novel facility of FIBROSCAN machine through which liver stiffness and fibrosis is measured noninvasively, first of its kind in Pakistan and presently is also in the process of starting Endoscopic Ultrasound, a unique modality incorporating Ultrasound probe within the endoscope, which would be the first in the huge Cosmopolitan city of Karachi. Even in Pakistan only two centers has this facility.

NILGID has dedicated high dependency bleeding care unit with trained staff to take care of variceal and non-variceal bleeders for prompt pre and post procedure management.

Various researches as well as randomized controlled trials are being done at NILGID; some of them have been presented in the premier conferences of Gastroenterology like American Association for the study of liver diseases (AASLD), and United European Gastroenterology week (UEGW).

Public Awareness program are regularly held to increase the awareness of GI diseases amongst masses particularly viral hepatitis seminars are conducted by our faculty and masses are educated regarding signs, symptoms and care of viral hepatitis.

Similarly free medical camps are also held routinely to screen people for Hepatitis B and C, with a large population taking part both in medical camps and in education programs.

Dr. Ishrat-ul-Ebad Khan Institute of Blood Diseases (DIKIBD)

Dr. Ishrat-Ul-Ebad Khan Institute of Blood Diseases is a center of excellence in Hematology & related Health Care Management, Research and Diagnostics, established by DUHS in 2012. This Institute has emerged with excellence in Technical, under graduate, Postgraduate Teaching, Training & Research program. This institute has following components:

1. Hematology Section
2. Blood Banking
3. Thalassemia Support Program: (for Blood Transfusion Dependent Patients)
4. Dow Thalassemia Assistance Program (Dow-TAP): volunteer program for Awareness, Screening, Diagnosis & Pre-marriage/pre-marriage Counseling services with DNA analysis
5. Research & Development in the field of Hematology
6. Post graduate Teaching / Training Programs

The entire benefits of this Institute include:

- Quality Controlled and Screened Blood products like Packed Red Cells, FFP. Platelets & other blood components on “NO PROFIT NO LOSS BASIS” are provided to the public.
- Reliable resource for Haematology related Diagnostic services at an affordable price.
- Smooth running of Clinics for Thalassemia and Haemophilia.
- To establish a Registry for Leukaemia, lymphomas & other blood disorders.

School of Public Health (SPH)

Public Health is an important component of health services that is often ignored in the developing world and highly emphasized in the developed world. Keeping in view the needs of Pakistani population, the DUHS took this initiative to establish the first public health school in a public sector university in Sindh Province.

Dow University of Health Sciences established the School of Public Health (SPH) at OJHA campus in 2012. The aim of this school is to improve the health of our population by addressing the major health issues. The programs at SPH include Master of Public Health, Master of Sciences (Biostatistics and Epidemiology), Master of Sciences in Public Health (Nutrition Sciences, Health Policy and Management, Social and Behavioral Sciences) and Master of Philosophy (Health Education). Pakistan Medical and Dental Council (PM&DC) has approved all these programs.

The faculty and students of SPH are also conducting community based research and health activities. The SPH has various sections to focus separately such as epidemiology division (examining communicable and non-communicable diseases in Pakistani population), nutrition division (studying the role of nutrition in disease development and prognosis) and economic and policy group (examining the impact of economic indicators on health of Pakistani population and health policy).

Dow Institute of Radiology

The Dow Radiology Complex was established in 2008 to have the highest quality medical imaging, research opportunities, and Radiology educational experiences. Besides providing economic benefits to the patients, the department of Imaging Services is committed to be at the forefront of new developments and clinical applications in the rapidly changing field of medical imaging.

Services include the provision of all modern diagnostic facilities like;

- X-rays
- Ultrasound (09 Nine Machines)
- Fluoroscopy
- DEXA Scan
- Echocardiography
- Mammography
- CT Scan (03 Three Machines)
- MRI (03 Three Machines including one open MRI for claustrophobic patients).
- 2 MRI Machines (including 1.5 Tesla) and 2 CT Machines, which are functioning 24 hours.

Considering the growing demands of patients a City Campus on Stadium Road has been established, named as 'Dow LEJ Campus' and it provides facilities of CT & MRI, 24 hrs. Highly qualified and experienced faculty, staff, and technologists perform all the teachings and services at Dow Institute of Radiology.

Ojha Institute of Chest Diseases (OICD)

The Ojha Institute of Chest Diseases (OICD) is also a constituent institute of the Dow University of Health Sciences, since its inception in Jan 2004. It was established in the early forties, as a TB sanatorium and now recognized as a center of excellence for Tuberculosis by the World Health Organization (WHO).

The diploma course in chest diseases (DTCD) is also conducted at OICD. It is also recognized for fellowship and membership courses in chest diseases.

Four out-patient clinics of OICD in the periphery of the city are also functioning, these are chest clinics of Iqbal Yard, Nazimabad, Lyari and Malir. Each clinic has well-organized DOTS (Directly Observed Treatment), where these patients with TB are provided medicines and health education.

Daily about 600 patients visit these TB clinics for DOTS treatment and follow up.

TB Hospital of 250 beds provides all possible facilities to indoor and outdoor patients for diagnosis and treatment of tuberculosis.

Multi Drug Resistant (MDR) TB is a great problem. In Pakistan about 15,000-20,000 tuberculosis patients presently suffering from Multi-Drug Resistant (MDR TB), each patient

requires approx Rs. 500,000. for management including costly medicines and other logistics but at OICD, their treatment is free.

Vocational training program have specially been designed and introduced to engage regular TB patients, while undergoing treatment for at least 9 months, to engage them mentally and simultaneously help them to earn daily living.

INSTITUTE OF BIOCHEMICAL, BIOLOGICAL AND PHARMACEUTICAL SCIENCES (IBBPS)

Institute of Biochemical, Biological and Pharmaceutical Sciences (IBBPS), established in 2010 and formerly it was named as Institute of Pharmaceutical and Environmental Research (IPER). It is the first interdisciplinary institute of its kind in any medical university of Pakistan, which provides link between academia and industries.

This institute has now also been certified for bioavailability and bioequivalence of drugs. It is the great service to the pharmaceutical companies of Pakistan, who presently acquire services from outside Pakistan to have bioequivalence of their drugs for its microbiological testing, potency and efficacy.

The team of IBBPS is well trained from Germany, USA, Jordan, Pakistan and comprises of Ph.D. scientists, medical doctors, pharmacist, biotechnologist, microbiologist, biochemist,

This institute also provides facility of contract research organization (CRO, Bioequivalence/ bioavailability, clinical trials, survey, method development, trainings, analysis, lab scale pilot production extra.

The laboratories are equipped with high performance liquid chromatography, gas chromatography, spectrophotometer, lyophilizer, flame photometer, polar meter, Tintometer, Dissolution, Disintegrator etc. The Dow University has also signed a memorandum of understanding (MoU) with a local pharmaceutical company, to focus on production of high quality drugs in accordance with the critical health requirements of the country. This will particularly include anti snake venom, frequently required in rural and sub urban parts of Pakistan. Presently its production in short hand thus collaboration efforts will fill up the gap.

Department of Post Graduate Studies (DPGS)

The postgraduate education in Dow University of Health Sciences is conducted under the overall supervision of Department of Post Graduate Studies. The University bodies such as Board of Advanced Studies and Research, Institutional (ethical) Review Board and Scientific Committee facilitates monitors both the research activity and the overall programs.

Dow University conducts 35 Ph.D., Masters, Fellowship, Diploma and Certificate programs. Each year around 150 FCPS students, complete training form Dow University of Health Sciences. To date 140 candidates have passed M.Phil. MDS, MSBE, MS diabetes, MS Physiotherapy and MBA from Dow University.

Institute of Basic Medical Sciences (IBMS)

Institute of Basic Medical Sciences (IBMS) has been established for M.Phil. and PhD courses in Basic Sciences i.e. Anatomy, Physiology, Biochemistry, Pathology, Microbiology and Pharmacology to develop human resources. It is a part of medical research city. The building has spacious air-conditioned lecture halls and seminar rooms having necessary audiovisual multimedia facilities.

The contemporary techniques involved in basic sciences research activities, is conducted in the labs of different departments, which are well equipped with modern equipment for variety of anatomical, physiological, biochemical, hematological, pathological, pharmacological, immunological and molecular biological experiments for specific research. The curriculum has been designed with multidisciplinary approach, focusing at molecular and cellular level. In addition, core and supportive courses provide competencies in research Biostatistics, critical analysis, and interpersonal communication and computer skills. This institute is helping in bridging the deficiency gap of Basic Medical Sciences research in Pakistan.

Dow School of Biomedical Engineering and Technology (DSBMET)

Dow University Department of Biomedical Engineering is a driving force in creating engineering knowledge and novel biomedical technology that improve the human care through the advancement of clinical care and biomedical sciences.

The school closely work with medical researchers to identify important problems that impact human health and solve them using our technical expertise. We engage motivated and talented students in the classroom, laboratory and clinic, imparting to them the spirit of our mission as we prepare them for future careers as effective, knowledgeable, and ethical leaders in corporate, professional, and academic communities.

This program prepares individuals who are interested in technology and health sciences to enter a challenging career in biomedical engineering. The program produces biomedical engineering technologists with the ability to participate in the development and application of technology in medicine and biology. The curriculum provides practical hands-on understanding in the fundamental principles, operations and design of medical diagnostic and therapeutic devices (e.g.: heart monitors, cardiac defibrillators, clinical laboratory analyzers and x-ray equipment). Medical device-related standards and protocols, research and design methodologies, technology life-cycle management strategies, safe clinical practices, problem solving skills, performance assurance-testing procedures, and troubleshooting techniques are all studied in this program. Career Prospects for Biomedical Technologist includes;

- Biomedical Technologist in Hospitals
- Medical Equipment Manufacturers
- Healthcare Management System (HMS)
- Research in Academia, Hospital and Medical Businesses
- Government Health Service Agencies
- Development of new Diagnostic Instrumentation
- Implementing International Electrical Safety & Hazards Standards on Medical Devices
- Healthcare Information System (e-Health) & e-Learning

Chapter 1

Academic Activities

❖ **1.1 Undergraduate and Postgraduate Programs:**

| Institute | Program | DESCRIPTION | Speciality |
|------------------|----------------|--|------------------------------|
| DMC | MBBS | Bachelor of Medicine and Bachelors of Surgery | |
| DIMC | MBBS | Bachelor of Medicine and Bachelors of Surgery | |
| DIKIOHS | BDS | Bachelor of Dental Surgery | |
| DIDC | BDS | Bachelor of Dental Surgery | |
| DIKIOHS | BS-DCP | Dental Care Professional | Dental Technology |
| | | | Dental Hygienist |
| DCOP | PHARM-D | Doctor of Pharmacy (Pharm D) | |
| IMT | BSMT | BS Medical Tecnology In | Clinical Laboratory Sciences |
| | | | Critical Care |
| | | | Operation Theatre |
| | | | Ophthalmology |
| | | | Cardiovascular Perfusionist |
| IPMR | BSPMR | Bs Physical Medicine and Rehabilitation | BS Occupational Therapy |
| | | | BS Prosthetics and Orthotics |
| | DPT | Doctor of Physiotherapy | Rehabilitation |
| IHM | BBA | Bachelor of Business Administration | Health Management |
| | | | Pharmaceutical |
| | | | Marketng |
| | | | Finance+HRM+IT Management |
| ION | BSNUR | BS in Nursing (4 Year) | Nursing |
| | PRNBS | Post Rn BSc Nursing 2 Year Program | |
| | BSCNFT | Diploma in Nursing (One Year Fast Track Program) | |
| DIR | AAS | Associate of Applied Sciences | |

DETAILS OF POSTGRADUATE PROGRAMS

1. Masters in Dental Surgery (MDS-Basic & Clinical) (4-Years Program)

1. Operative Dentistry
2. Oral Surgery
3. Prosthodontics
4. Orthodontics
5. Oral Biology
6. Oral Pathology
7. Dental Material
8. Comm. Dentistry

2. Masters in Science Dental Surgery (M. Sc.) (2-Years Program)

- a. Operative Dentistry
- b. Oral Surgery
- c. Prosthodontics
- d. Orthodontics
- e. Oral Biology
- f. Oral Pathology
- g. Dental Material
- h. Comm. Dentistry
- i. Periodontology
- j. Oral Medicine

3. Masters in Diabetics & Endocrinology (M.Sc. D.E)

4. Masters in Biostatistics and Epidemiology (MSBE)

5. Masters in Health Profession Education (MHPE)

6. Masters in Advanced Physiotherapy (MSAPT)

7. Masters in Nursing (MSN)

8. Masters in Public Health (MPH)

9. Masters in Transfusion Medicine & Tissue Typing (MSTMTT)

10. Masters in Bio-Physics (MS-BPHY)

11. Masters of Business Administration (Mor. / Eve) (MBA)

A. Hospital Management B. Pharmaceutical Management C. Health Services Management

12. Masters in Science (Social & Behavioral Sciences) (MSPH)

13. Masters in Science (Health Policy and Management) (MHPM)

14. Masters of Science in (Nutritional Sciences) (MSNS)

TWO - YEARS CLINICAL DIPLOMA PROGRAMS:

1. Diploma in Family Medicine (DFM)
2. Diploma in Medical Jurisprudence (DMJ)
3. Diploma in Cardiology (Dip-Card)
4. Diploma in Critical Care Medicine (DCCM)
5. Diploma in Tuberculosis & Chest Diseases (DTCD)
6. Diploma in Child Health (DCH)
7. Diploma in Dermatology (D- Derm)
8. Diploma in Radiology (DMRD)
9. Diploma in Anesthesiology (DA)
10. Diploma in Ophthalmology (DO)
11. Diploma in Psychiatric Medicine (DPM)
12. Diploma in Laryngo Otorhinology (DLO)

FCPS-II FELLOWSHIP TRAINING IN THE FOLLOWING SPECIALTIES (4-Years Program)

1. Medicine
2. Surgery
3. Gynae
4. Paeds
5. Cardiology
6. Radiology
7. Forensic Medicine
8. Pulmonology
9. Ophthalmology
10. Anesthesiology
11. Plastic Surgery
12. Neurology
13. ENT
14. Psychiatry
15. Community Medicine
16. Operative Dentistry
17. Oral Surgery
18. Orthodontics
19. Prosthodontics
20. Cardiac Surgery
21. Orthopedic
22. Dermatology
23. Physical Medicine and Rehabilitation

❖ 1.2 MS AND PH D PROGRAMMES

MS/MD- MASTERS OF SURGERY/ DOCTOR OF MEDICINE PROGRAMS (5-Years Program)

MD-PROGRAMS SPECIALITIES

1. Internal Medicine
2. Neurology
3. Cardiology
4. Dermatology
5. Community Medicine
6. Pediatric
7. Critical Care Medicine
8. Family Medicine
9. Pulmonology
10. Anesthesiology
11. Psychiatry
12. Gastroenterology
13. Sports Medicine
14. Radiology

MS-PROGRAMS SPECIALITIES

1. General Surgery
2. Gynae & Obs.
3. Orthopedics Surgery
4. Plastic Surgery
5. Neurosurgery
6. Cardiac Surgery
7. Ophthalmology
8. Pediatric Surgery
9. ENT

M. Phil & Ph. D. PROGRAMS:

M. Phil in Basic Sciences

1. Anatomy
2. Physiology
3. Pharmacology
4. Biochemistry
5. Hematology
6. Medical Genetics
7. Histopathology
8. Medical Microbiology
9. Chemical Pathology
10. Bio-Technology
11. Molecular Pathology.
12. Molecular Biology
13. Molecular Medicine & Bioinformatics.
14. M. Phil Health Education and Promotion

M. Phil in Pharmaceutical Sciences

1. Pharmacology
2. Pharmaceutics
3. Pharmaceutical Chemistry
4. Pharmacognosy

Ph. D. in Dental Sciences, Clinical Sciences, Basic Sciences and Public Health

❖ 1.3 Academic Achievements:

- **Student Passed-out During the Year 2015-16**

In the year 2015-16, 1435 students passed out under various undergraduate and postgraduate program. The details are as follows

Total Pass out Students (Degree Completed) All Campuses during 2015-16.

| Parameter | Bach 14 Yrs of Edu (M) | Bach 14 Yrs of Edu (F) | Bach 16 Yrs of Edu (M) | Bach 16 Yrs of Edu (F) | Bach 17 Yrs of Edu (M) | Bach 17 Yrs of Edu (F) | Master 16 Yrs of Edu (M) | Master 16 Yrs of Edu (F) | Master 17 Yrs of Edu (M) | Master 17 Yrs of Edu (F) | MS/ MPhil 18 Yrs of Edu (M) | MS/ MPhil 18 Yrs of Edu (F) | PhD (M) | PhD (F) | PGD (M) | PGD (F) | Total (M) | Total (F) | |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|-----------------------------|---------|---------|---------|---------|-----------|-----------|------|
| Total Output (Degree Completed) (Pakistani + Foreign + Distance Learning) | 16 | 5 | 112 | 272 | 171 | 591 | 4 | 6 | 32 | 38 | 24 | 21 | 0 | 3 | 31 | 44 | 390 | 980 | 1370 |
| Output (Degree Completed) Foreign Students only | Nil | Nil | Nil | Nil | 37 | 25 | Nil | Nil | 2 | Nil | 1 | Nil | Nil | Nil | Nil | Nil | 40 | 25 | 65 |

Research Achievements

During the years 2015 and 16, total number of projects approved were 170, in which 39 were newly launched. The research publication for the years 2014 and 2015 was 556.

❖ 1.4 Foreign Academic Linkages:

For the year 2015-16 following academic linkages with the foreign medical boards/associations/universities are as;

- Tech4 Life Enterprises Canada Inc.
- International Committee of the Red Cross (ICRC), Geneva, Switzerland
- Universiti Sultan Zainal Abidin, Malaysia
- American Medical Residency Certification Board (AMRCB)
- Educational Commission for Foreign Medical Graduates (ECFMG)
- Foundation for Advancement of International Medical Education and Research (FAIMER).
- Global Health Learning Opportunities (GHLO)
- Medical Board of California
- University of Illinois-Chicago

❖ 1.5 Honors and Awards:

There was no award won by the faculty during 2015-16.

❖ 1.6 Institutional Linkages:

Following are the Institutional linkages:

Academics – for the purpose of post graduate trainings offered:

- Aga Khan University Karachi
- Jinnah Post Graduate Medical Center Karachi
- Patel Hospital Karachi
- Darul-Seht Hospital Karachi
- Karachi Adventist Hospital
- Tabbah Heart Institute Karachi
- Ghulam Muhammad Mehr Medical College Sukkur
- Chandka Medical College Larkana

Educational visits of Medical College students of:

- Karachi Medical and Dental College Karachi
- Hamdard Medical University Karachi
- Sir Syed Medical college Karachi
- Liaquat College of Medicine and Dentistry Karachi

Research work

- Aga Khan University Karachi
- National TB control program Karachi
- Bridge consultant foundation Karachi
- Pakistan Chest Society

Nursing training

- Dr Ziauddin Medical University Karachi
- Karachi Kings College of Nursing Karachi
- Jinnah Medical and Nursing College Karachi
- New life College of Nursing Karachi

Chapter 2

Research and Development

❖ 2.1 R & D – An Overview:

The establishment of Department of Research took place with the inception of Dow University of Health Sciences. Since then, Research Department is providing its services to enhance university position in research, training and consultation areas. The particular activities of the department are briefly highlighted below:

• Postgraduate Synopsis and Thesis Review:

• **Scientific Research Committee:** This committee was formed in November, 2012 with the approval of Board of Advanced Studies and Research of DUHS. The committee consisted of faculty of DUHS from various fields. In this committee, research proposals of postgraduate students are scientifically reviewed and advised the modifications to the students.

• **PhD Advisory Committee:** The purpose of this committee is to evaluate synopses submitted by PhD students. The committee comprises of indigenous experts from different fields. In this committee, research synopses of doctorate students are scientifically reviewed and advised the modifications to the students.

• **Institutional Review Board:** Department also administered and organized Institutional Review Board of DUHS which consists of 14 members from different specialty such as medicines, law, religious scholar, ethics, social work etc. It reviews and approves research proposals conducted by DUHS. Besides, DUHS offers this service to those institutes who have not their own IRB/ERB.

• **Board of Advanced Studies and Research:** All the official works related to this Board are administered and organized under Research Department. The Board consists of 10 members under the Chairmanship of the Vice Chancellor. The functions of this board are:

01. To advise authorities on all matters connected with the promotion of Advanced Studies and Research in university
02. To propose regulations regarding the award of research degrees.
03. To appoint supervisors for research students to determine the subject of their thesis.
04. To recommend panels of names of paper setters and examiners for research examination after considering the proposals of Board of Studies in this behalf; and
05. To perform such other functions as may be prescribed by the statutes.

Furthermore, the Board also gives final approval for the synopsis.

• **Thesis Review and Examination Processes:** To search reviewers and examiners of postgraduate thesis of DUHS is also performed by the departmental members. Sending

abstracts, taking approvals, dispatching theses and arrange examination days stuffs are the major tasks required during the process.

- **Academic Activities:**

- **Undergraduate Students Research Activities:** A research component was also incorporated in MBBS curriculum of DUHS five years ago. Each clinical group works under a faculty member of DUHS.

- **Fourth Year Research Book:** The researches of undergraduate students are published annually under department of research. This book contains reports of all the clinical groups of DUHS.

- **Postgraduate Programs:** Research Department is running a postgraduate level program, Master of Science in Biostatistics and Epidemiology (MSBE). MSBE program was started in October 2008. This is a two years program comprises of four semesters with a research thesis work in second year of the program.

- **Summer Short Courses:** Department has initiated three months summer short courses last year. The courses on Applied Biostatistics, Fundamental Epidemiology, Statistical software in health sciences and Research methodology are taught during June to August. The classes are conducted in weekends.

- **Training on Biostatistics and Research Methodology:** Department also facilitates training on specific topics of biostatistics and research methodology. Several workshops have been conducted by the faculty of Research Department on the same.

- **Foreign Scholarship program:** Foreign Scholarship program is funded by Higher Education Commission (HEC) of Pakistan. Twenty scholars were sent for PhD program at overseas universities. Fifteen scholars enrolled in United Kingdom's universities and one each in Australia, Canada, Sweden, Scotland and Germany. These scholars were selected after through screening by Graduate Assessment Test (GAT), subject and protocol writing tests and then following by two interviews based on candidate's research interest and specialty. Eighteen scholars have successfully completed their PhD program and joined back the DUHS.

- **Research and Bio-statistical Consultation:** The faculty of Research Department also provides research and bio-statistical consultation not only to faculty and students but also to pharmaceutical industries till now. The consultation is classified following three major parts

1. Statistical Consultation:

Department consults all kind of statistical works to different academic and research based organizations including pharmaceutical industries. These services include, but

not limited to, sample size calculation, data entry, data analysis and formatted table & graph of the output of the analysis.

2. Writing Consultation:

Department also provides consultation in writing analysis and result sections of the research project/report. Besides, investigators who want to write by themselves, department guides them how to interpret the statistical results.

3. Research Protocol Review Guides:

The faculty also assists research student and faculty about the processes of research work and writing including questionnaire formatting, structure of protocol, literature review and consent form etc.

4. Other Related Activities:

- **Research Posters Competition:** Each year, research department celebrates Faculty and Student Research Days. On these days, researches of faculty and students are displayed through posters. The best three researches present their works orally are awarded.

- **Journal of Dow University of Health Sciences:** Department of Research, DUHS administered and published Journal of Dow University of Health Sciences (JDUHS) 3 times a year. This journal is approved by PMRC and indexed in IMEMR, Pak MediNet and CABI. The journal is also recognized by Higher Education Commission (HEC), Pakistan. The journal is available online and submission and processes of manuscript can be made while emailing to jduhs@duhs.edu.pk.

- **Abstract Book:** Each year Research Department compiles and publishes 'Abstract Book' which contains abstracts of research works published by DUHS faculty. The first book was published in 2010. Six issues have been published till now.

- **Research Loan Funding:** DUHS provides a loan fund up to Rs.100, 000 for the research projects of faculty and postgraduate students of DUHS. The administration work of the same is handled by Research Department. More than one hundred researches have been approved up till now.

- **Registration of Research Projects:** All the faculty and students of DUHS have to register their intended research project at the Research Department, so that the projects should not be duplicated by other faculty members and candidates.

2.2 Projects:

2.2.1

| | |
|----------------------------------|----|
| Total number of Approved in 2015 | 90 |
| Total number of Approved in 2016 | 89 |

2.2.2

| | |
|--|----|
| Total number of Newly Launched in 2016 | 39 |
|--|----|

2.3 Publications by DUHS

| | |
|-----------------------------------|-----|
| Total number of Abstracts in 2015 | 295 |
| Total number of Abstracts in 2016 | 261 |

2.4: Conferences, Seminars and Workshops, etc. (attended by Faculty)

| S.no | Faculty Name | Event | Topic | Date/Time | Venue |
|------|---|--|--|--|---|
| 1 | Dr. Mehwish Hussain Senior Lecturer, Biostatistics) | 3 rd National PAME Conference | Pakistan Medical Editors Biennial Meeting | March 31 to April 2, 2016 | University of Health Sciences, Lahore |
| | | 14 th ISSOS International Conference on Statistical Sciences" 2016 | Predicted factors reducing risk of coronary artery disease among patients with chest pain | 14 to 16 March, 2016 Timing (09:00am to 05:00pm) | Jinnah Sindh Medical University, Karachi |
| 2 | Ms. Saba Mughal (Lecturer Biostatistics) | 6th ANNUAL PUBLIC HEALTH SCIENTIFIC CONFERENCE 2015 | “Fragile Health System: Issues & Challenges in Pakistan – Harnessing Opportunities” | 11 to 12 December, 2015 | Islamabad |
| 3 | Ms. Hira Fatima Wassem (Lecturer Biostatistics) | 14 th ISSOS International Conference on Statistical Sciences" 2016 | None | 14 to 16 March, 2016 Timing (09:00am to 05:00pm) | Jinnah Sindh Medical University Karachi |
| | | 7 th Fertility Conference 2016 | Medical Statistics | 20 to 21 February 2016 | Sindh Institute of Reproductive Medicine |

| | | | | | |
|---|---|--|--|---|--|
| | | | | | Karachi |
| 4 | Mr. Syed Arif Ali (Senior Lecturer Biostatistics) | 14 th ISSOS International Conference on Statistical Sciences" 2016 | None | 14 to 16 March, 2016 Timing (09:00am to 05:00pm | Jinnah Sindh Medical University Karachi |
| 5 | Mr. Syed Omair Adil (Lecturer Biostatistics) | Pakistan Society of Hematology (PSH) Annual Conference | None | 27 th Feb to 1st March 2015 | Islamabad |
| | | Pakistan Association of Pathologist (PAP) Annual Conference | None | 06 th to 08 th November | Lahore |
| | | Workshop | Cochrane systematic reviews workshop | 24 th to 26 th August 2016 | Karachi |
| 6 | Mr. Abdur Rasheed (Deputy Director & Senior Lecturer Biostatistics) | None | None | None | None |
| 7 | Mr. Waqas Ahmed | None | None | None | None |

Workshops conducted by Research Department during 2015-2016:

2015

| No. | Topic | Facilitator | Timings | Venue |
|-----|----------------------|---|-----------------------|---|
| 4 | Article writing | 01. Mr. Masood Hussain Rao 02. Mr. Syed Arif Ali | 09:00am to 01:00pm | Professional Development Center (PDC) Dow Medical College (DMC) |
| 4 | Introduction to SPSS | 01. Mr. Masood Hussain Rao 02. Mr. Syed Arif Ali | 09:00am to 01:00pm | Professional Development Center (PDC) Dow Medical College (DMC) |
| 4. | Basic Biostatistics | 01. Mr. Masood Hussain Rao 02. Mr. Syed Arif Ali | 09:00am to 01:00pm | Professional Development Center (PDC) Dow Medical College (DMC) |

| | | | | |
|---|---------------------------|---|--------------------|---|
| 1 | Advance Biostatistics | 01. Mr. Masood Hussain Rao 02. Mr. Syed Arif Ali | 09:00am to 01:00pm | Professional Development Center (PDC) Dow Medical College (DMC) |
| 4 | Synopsis/Proposal writing | 01. Mr. Masood Hussain Rao 02. Mr. Syed Arif Ali | 09:00am to 01:00pm | Professional Development Center (PDC) Dow Medical College (DMC) |

Workshops conducted by Research Department during 2015-2016:

Pre-Research Day Workshops FOR DEVELOPING RESEARCH SKILLS

Venue:

| Workshops titles | 2015* | 2016* | Facilitators | Venue |
|--|---------------------------|---------------------------|--|--------------------------|
| Data entry and basic analysis through SPSS | 25 th Feb 2015 | 24 th Feb 2016 | Ms. Sidra Zaheer Ms. Sumera Inam | Digital Library (SPH) |
| Data entry and basic analysis through SPSS | 25 th Feb 2015 | 25 th Feb 2016 | Ms. Mehwish Hussain Ms. Saba Mughal | DVTC (DIMC) |
| Data entry and basic analysis through SAS | 25 th Feb 2015 | 25 th Feb 2016 | Mr. Abdur Rasheed | Digital Library (MAIN) |
| Developing Questionnaire | 25 th Feb 2015 | 24 th Feb 2016 | Dr. Mahjabeen Khan | Tutorial Room # 03 (SPH) |
| EndNote for Referencing | 25 th Feb 2015 | 24 th Feb 2016 | Ms. Mehwish Hussain | Digital Library (SPH) |
| EndNote for Referencing | - | 25 th Feb 2016 | Ms. Mehwish Hussain | Digital Library (SPH) |
| Plagiarism-Ways to Avoid it | 25 th Feb 2015 | 24 th Feb 2016 | Dr. Sameer Qureshi | Tutorial Room # 02 (SPH) |
| Designing Research Poster | 25 th Feb 2015 | 24 th Feb 2016 | Mr. Syed Arif Ali Mr. Muhammad Farhan | DVTC (DIMC) |

| | | | | |
|---|---------------------------------|---------------------------------|--------------------------|--------------------------|
| Sample Size Calculation through NCSS PASS software | 25th Feb 2015 | 24th Feb 2016 | Mr. Waqas Ahmed Farooqui | DVTC (DIMC) |
| Sample Size Calculation through NCSS PASS software | - | 25th Feb 2016 | Mr. Waqas Ahmed Farooqui | DVTC (DIMC) |
| Data analysis and basic analysis through Epidata | 25th Feb 2015 | 24th Feb 2016 | Mr. Syed Arif Ali | Digital Library (SPH) |
| Data entry and basic analysis through Minitab | 25th Feb 2015 | - | Mr. Waqas Ahmed Farooqui | Digital Library (SPH) |
| Epidemiological Study Designs | 25th Feb 2015 | 25th Feb 2016 | Dr. Kashif Shafique | Tutorial Room # 02 (SPH) |

2.5: Research Journals

Journal name: Journal of Dow University of Health Sciences (JDUHS)

Year 2015:

| | | |
|---|----------|------------------------------|
| Volume- 09 | Issue- 1 | January to April - 2015 |
| Volume- 09 | Issue- 2 | May to August - 2015 |
| Volume- 09 | Issue- 3 | September to December - 2015 |
| Total Issues of Journals in the month of January to December 2015 | | |
| | | 03 Issues |

Year 2016:

| | | |
|---|----------|------------------------------|
| Volume- 10 | Issue- 1 | January to April - 2016 |
| Volume- 10 | Issue- 2 | May to August - 2016 |
| Volume- 10 | Issue- 3 | September to December - 2016 |
| Total Issues of Journals in the month of January to December 2016 | | |
| | | 03 Issues |

2.6: Research Collaboration

2.6.3 Funding Grants for R&D

| S.no | Principal Investigator (PI) | Co – PI | Project Name | Total Fund | Different Agencies | Starting and Ending Year | Date |
|------|-----------------------------|----------------------------|--|---------------|--------------------|--------------------------|--|
| 1 | Prof. Dr. Zeba Haque | Prof. Dr. Muhammad Masroor | “Non-Alcoholic Fatty Liver Disease: Association with Risk Factors and Co-Morbidities and Potential Genetic Predisposition in Adult Population of Karachi”. | Rs. 3,625,413 | HEC | 2/6/2015 | In Process and will end in 36 months (June/2018) |
| 2 | Dr. Talat Roome, | | “Single Nucleotide Polymorphism in Osteopontin Gene: In relevance to Hepatitis C Virus infection and associated Hepatocellular Carcinoma in Pakistan Population” | Rs. 7,933,042 | HEC | 23/11/2015 | In Process and will end in 24 months (November/2017) |
| 3 | Dr. Sumbul Shamim, | | “Antitubercular Activity and Safety Evaluation of Various Synthesized new Derivatives of Flouroquinolones.” | Rs. 2,082,946 | HEC | 13/1/2016 | In Process and will end in 24 months (January/2018) |

| | | | | | | | |
|---|---------------------------|--|--|---------------|-----|-----------|--|
| 4 | Dr. M. Nouman Mughal, | | “Association of hTERT Expression and Promote Mutation in Patient with Head and Neck Cancer in Pakistan.” | Rs. 2,550,315 | HEC | 13/1/2016 | In Process and will end in 12 months (January/2017) |
| 5 | Dr. Mushtaq Hussain, | | “Investigating the molecular interactions of cancer associated Ubiquitin Specific Peptidase (USPs)” | Rs. 6,769,613 | HEC | 12/2/2016 | In Process and will end in 36 months (February/2019) |
| 6 | Dr. Nilofer Fatimi Safdar | | “Association between Micronutrient’s Levels and Cardiovascular Risk Factors Among Pakistani Adolescents” | Rs. 3,390,985 | HEC | 15/2/2016 | In Process and will end in 24 months (February/2018) |

2.6.4 Operation of Office of Research, Innovation and Commercialization (ORIC)

Office of Research, Innovation and Commercialization, DUHS:

With the establishment of Dow University of Health Sciences (DUHS), Directorate of Research incepted with the aim of growing quality research culture in the institute. Many sections were introduced to strengthen advancement of research culture in DUHS. These included registration and approval research proposals by Institutional Review Boards (IRB) and publishing Journal of Dow University of Health Sciences (JDUHS). Faculty research profile and research poster competition were the other stones for growing research culture in DUHS. Besides, introducing graded courses, degree program and occasional trainings assisted to increase the knowledge of research based courses among faculty and students.

In 2011, under the directives of Higher Education Commission (HEC) of Pakistan, DUHS developed Office of Research, Innovation and Commercialization (ORIC) while incorporate the latter two more sections. The ORIC then, adapted policies for augmenting activities related

to innovation and commercialization in DUHS. The core elements of ORIC for faculty and students of DUHS are mentioned below:

Segment 1: **Research**

Research Related Activities

- Journal of the DUHS (JDUHS)
- Institutional Review Board (IRB)
- Funding of Research Projects
- Undergraduate Research
- Registration of Research Projects
- Abstract Book
- Annual Research Day
- Bio statistical consultation
- Research writing consultation

Segment 2: **Academic Activities:**

- Master of Science in Biostatistics and Epidemiology (MSBE)
- PhD Program I
- Foreign Scholarships Program
- Teaching Biostatistics courses in many institutions/departments of DUHS
- Conducting Workshops
- Statistical consultations to undergraduate and postgraduate students & faculty member
- Summer Short Courses

Segment 3: **Innovation**

- Water Filter Plant
- Hand Sanitizer
- Artificial limbs

Segment 4: **Commercialization**

- Riva Drinking Water Distribution
- Artificial Limbs
- Daily Life Activities (ADL) Devices
- Dil and Health Project
- Executive Clinical Setup at Dow OPD
- Bioavailability and bioequivalence (BA/BE) studies of drugs
- Dow Radiology Complex
- Sarwar Zuberi Liver Center
- Dow Vocational Technical and Training Center
- National Institute of Diabetes and Endocrinology
- Anti-Venom Vaccine

Chapter 3

Quality Assurance

3.1 Impact of Quality Assurance in the University:

Worldwide, universities rely on quality assurance procedures to achieve excellence in their academic programs, as well as to sustain it in future. In 2006, as per the directives of Higher Education Commission (HEC) Pakistan, the Quality Enhancement Cell (QEC) at Dow University of Health Sciences was established.

Dow University of Health Sciences has a well-developed Quality Assurance system that monitors the academic and clinical services. In this regard, number of measures for quality enhancement and assurance has introduced to have an effective quality assurance setup with standardized procedures and practices in health education, which includes:

- Preparation of Program Assessment Reports
- ISO certification of all academic and support departments
- Faculty assessment through student feedback
-

3.2 Quality Enhancement Cell:

The Quality Enhancement Cell (QEC) established at DUHS in 2006, as per the directives of HEC.

Since its establishment, QEC is continuously involved in monitoring and measurement of Quality Management System (QMS) processes and the academic services throughout the DUHS.

Score of QEC-DUHS in 2015-16 by HEC

In 2015-16, the QEC-DUHS has scored 93.76% and placed in W-category by HEC.

Responsibilities of QEC

The responsibilities of QEC include:

- Preparing and reviewing the program evaluation through Self- Assessment.
- Reviewing the Quality of teaching and learning in each subjected area through HEC prescribed feedback forms as per the guidelines given for each form in coordination with QMS coordinators and SAR Program Teams.
- Ensuring that the University's Quality Management System is designed to fit with the requirements of HEC.
- Reviewing the quality standards and procedures used in quality assurance in terms of ISO certification 9001:2008, internal and surveillance quality audit.

Major Achievements of QEC-DUHS in 2015-16

The major achievement of QEC DUHS in 2015-16 includes:

➤ Self-Assessment Reports:

QEC-DUHS from its establishment until 2015-16, has completed Self-Assessment Reports in 46 various undergraduate and postgraduate programs of Dow University.

➤ **HEC prescribed feedback forms:**

QEC-DUHS successfully conducted the following online proformas for feedback evaluation in all the degree-awarding programs of DUHS:

1. Teacher Evaluation by students
2. Course Evaluation by students
3. Faculty Course Review Report
- 4.

➤ **Internal Quality Audit at DUHS:**

Completion of Internal Quality Audit (IQA) in ten institutes and support departments of DUHS with the help of Internal Auditors of DUHS, PIQC Consultants and QEC officials, to monitor the physical implementation of Quality Management System (QMS) of ISO 9001:2008 in DUHS.

➤ **ISO Certification:**

In August 2013, DUHS declared ISO Certified with ISO 9001-2008 standard, by Third (3rd) Party Evaluation of ten academic and administrative departments of DUHS by the Audit Team of Vincotte International, Brussels.

3.3 Membership of Association/ Networks

Following are the memberships of different association/ networks;

1. Member of Tallories Network since 2009.
2. Member of Learning Innovation Division, HEC Pakistan since 2005.
3. Global Health Learning Opportunities (GHLO) Collaborative.
4. Prospective member of Asia Pacific Quality Network (APQN).
5. Corporate and Associate Member of Association of National and International Universities, Research and Educational centers.

3.4 Accreditation of programs from relevant councils.

Following programs are accredited by their respective accreditation council/s:

1. MBBS program at Dow Medical College (DMC) - Accredited by Pakistan Medical & Dental Council (PM&DC).
2. MBBS program at Dow International Medical College (DIMC) - Accredited by Pakistan Medical & Dental Council (PM&DC).
3. Bachelor of Dental Surgery (BDS) program at Dr. Ishrat ul Ebad Khan Institute of Oral Health Sciences (DIKIOHS) – Accredited by Pakistan Medical and Dental Council (PM&DC)
4. Bachelor of Dental Surgery (BDS) program at Dow International Dental College (DIDC) – Accredited by Pakistan Medical and Dental Council (PM&DC)
5. Pharm D program at Dow College of Pharmacy (DCOP) - Accredited by Pakistan Pharmacy Council (PPC).
6. Post RN Nursing program at Institute of Nursing (ION) - Accredited by Pakistan Nursing Council (PNC).

7. BS Generic Nursing program - Accredited by Pakistan Nursing Council (PNC).
8. Master of Nursing (MSN) program- Accredited by Pakistan Nursing Council (PNC).
9. MPhil (Basic Medical Sciences) at Institute of Basic Medical Sciences- Accredited by Pakistan Medical & Dental Council (PM&DC).
10. Master of Dental Surgery (MDS) program at Dr. Ishrat ul Ebad Khan Institute of Oral Health Sciences (DIKIOHS) - Accredited by Pakistan Medical & Dental Council (PM&DC).
11. Master of Public Health (MPH) at School of Public Health- Accredited by Pakistan Medical & Dental Council (PM&DC).
12. MS in Epidemiology and Biostatistics (MSBE) at School of Public Health- Accredited by Pakistan Medical & Dental Council (PM&DC).
13. MS in Public Health (MSPH) at School of Public Health- Accredited by Pakistan Medical & Dental Council (PM&DC).
14. Master in Health Professional Education (MHPE) at Dow Institute of Health Professionals Education- Accredited by Pakistan Medical & Dental Council (PM&DC).
15. Master of Surgery (MS) at Department of Postgraduate Studies- Accredited by Pakistan Medical & Dental Council (PM&DC).
16. Doctor of Medicine (MD) program at Department of Postgraduate Studies- Accredited by Pakistan Medical & Dental Council (PM&DC).
17. BBA & MBA Programs are in the process of accreditation from National Business Education Accreditation Council (NBEAC).

Chapter 4

Faculty Development

Professional Development Center (PDC) DUHS

Professional Development Centre is the Centre for Human Resource Development of DUHS with state-of-the art equipment, models, electronic simulators, & manikins. Through needs based continuing education and hands-on workshops, it aims to provide technically sound and up-to-date workforce in the field of health sciences. These programs cater to the needs of several levels of health professionals such as Undergraduates, Postgraduates, Faculty members, Paramedics, Nurses, other health professionals, and public.

PDC has its head office at DMC with its branch at Dow International Medical College (DIMC), Ojha with similar facilities, equipment, and instructors. It additionally, has a dedicated Undergraduate Skills Lab.

All activities of PDC are organized and supervised by two Directors (Director Medical & Allied, Director Surgical & Allied).

PDC consists of five major divisions;

1. Continuing Medical Education (which deals with Seminar, lectures, symposia and conferences).
2. Continuing Professional Development (that deals with long duration & short duration training courses and hands-on workshops).
3. Undergraduate Skills Lab (which deals with the training of undergraduate students).
4. Medical Education Cell (which deals with the construction and formulation of undergraduate curriculum & Faculty training programs).
5. Miscellaneous programs (that include programs like visiting faculty, reproductive health and alumni affairs).

Since its inception in October, 2005 Professional Development Centre has conducted CME & Miscellaneous Programs in collaboration with National & International Organizations like PTC Foundation UK, American Heart Association, North Middlesex University Hospital, London, IMPACT Nepal, Amber Institute of California, INTER BURNS, INFORM, EMAME & EmONC, FALAH, US AID, UNFPA & WHO etc.

❖ 4.1 Faculty Development Programs (MS/Ph.D local +Foreign):

Foreign Scholarship program is funded by Higher Education Commission (HEC) of Pakistan. Twenty scholars were sent for PhD program at overseas universities. Fifteen scholars enrolled in United Kingdom's universities and one each in Australia, Canada, Sweden, and Germany. These scholars were selected after through screening by Graduate Assessment Test (GAT), subject and protocol writing tests and then following by two interviews based on candidate's research interest and specialty.

Twelve scholars have successfully completed their PhD program and joined the DUHS back from 2013 to date. The University is trying to strengthen its faculty under the following Faculty Development Program.

❖ **4.2 Returned scholars :**

From 2014 to 2015, the details are as below;
TOTAL CANDIDATES SENT = 20 (Five Phases)
Total Successful Candidates Returned = 12
Total Unsuccessful Candidates Returned = 1

Chapter 5

Access

❖ **5.1 Basic enrolment**

Total Enrolment during 2015-16 was 7206.

The details of undergraduate and postgraduate basic enrollment are attached as Annex-D.

❖ **5.2 Equity**

In Dow University of Health Sciences, admissions are granted on transparent open merit basis for all applicants either male or female.

❖ **5.3 Gender-Wise Detail**

The gender wise detail is already provided in Annex-B.

❖ **5.4 Employability**

The graduates of Dow University of Health Sciences are serving in almost all prominent health care institutions of Pakistan as well as at international level. List of some major employers of DUHS graduates is following:

- College of Physicians and Surgeons Pakistan
- Sindh Institute of Urology and Transplantation (SIUT)
- National and Multinational Pharmaceutical Companies
- Private Hospitals
- Public & Private Sector Medical Colleges & Universities
- Multinational and Private Limited companies
-

5.5 Faculty-student ratio

In the year 2015-2016, the faculty-student ratio is as under:

- Total No. of Faculty: 794
- Total No. of Enrolled Students: 7206
- Ratio: 1:9

Chapter 6

University Building Economies

❖ **6.1 University- Industry Linkage**

Dow University of Health Sciences, Karachi, builds up various linkages with national and international industries and still engaged in the process of enhancing strong linkages.

- ❖ Dow University of Health Sciences has developed university industry linkage with M/S Mactor International Ltd, and signed MOU, for establishment of Department of Serobiology for anti-snake venom regarding Research and development as well as for production purpose, to serve humanity.
- ❖ The University enhanced its industry linkage by signing MOU with the international organization, DICE Foundation. It will act as a pragmatic platform for health related innovation & for collaboration among academia, industry, government, entrepreneurs and expatriate community on all matters pertaining to the growth of health sector in Pakistan.

❖ **6.2 New initiatives**

- **DOW CLUB CARD**

Dow Club Card has been introduced as an innovative way for source of comfort to providers as well as users of health services. Dow Club Card had been launched at Dow University of Health Sciences since two years to provide maximum possible facilities to the students, faculty members, and alumni of DUHS. Multiple alliances were taken on board and variable discounts can be availed at various places including restaurants, hotels, saloons and number of other outlets. The donors of Dow Endowment Fund who join hands with Dow University to provide enjoyable lifestyle for health care services to under-privileged people of the community, free of charge or at meager cost. Member will get double satisfaction by holding Dow Club Card, one for caring others and the other by saving on discounts at multiple places along-with enhanced life style. The Dow Club Card has to be carried by the member to avail variety of massive benefits at various places. The Club Card holders can also inspire others to become club members to help under-privileged people as well as enjoy discounts on their own.

- **PROJECT OF RIVA PREMIUM DRINKING WATER PLANT**

The Dow University of Health Sciences established state-of-art Reverse Osmosis Double Pass Premium Drinking Water Plant for the provision of Safe Drinking Water by name of 'RIVA' packed in 19 liters bottles. The premium drinking water plant aim for the benefit of patients and the general public, 1000 Gallons/day are produced to be sealed in 19 liter bottles. Riva drinking water is purified through 11 steps of Hydration, starting from chlorination and ending with UV sterilization. The manufacturing facilities are of international standards.

- In line with the excellent image of Dow University of Health Sciences a Quality Healthcare Organization want to establish RIVA water as Premium Drinking Water which could be recognized as the Purest, Safest, and Healthiest water in Pakistan, with surety

that our RIVA water process of Sourcing Processing Packaging, Distribution and Customer Satisfaction is truly in line with established international standards. The University has a world class GMP compliant manufacturing facility having State of Art machinery which ensure that our water produced is of the highest quality standard and also approved by PSQCA Standards. This manufacturing facilities is of international standards and can prepare premium quality drinking water up to one thousand gallon per day, the water is filled/sealed in a 19litre bottles (FD approved poly carbonate) which can be mounted on ceramic and electric dispensers. Our quality in line with PSQCA (Pakistan Standards and Quality Control Authority) certification.

- University started its production of 19 liter Riva water bottle in the month of December 2014, and after satisfactory QC report University started its initial supplies to few departments for testing purposes.
- From January 2015 onwards University producing around 1500 bottles of Riva premium drinking water and is being consumed by approximately 112 departments/ out reached labs/Offices of 4 campuses of Dow University. In 2015 the commercialization of Riva premium drinker water was initiated. More than 7000 bottles per month of 19liter is being supplied to household and corporate customers across Karachi as of 2015.
- Future perspective is to get Trademark Registration by the Government of Pakistan, the trade mark registry, Karachi.
- In order to fitful its CRS responsibility, Dow will supply its water to natural calamity hit areas, and those areas deprived of drinking water.
- To produce High Quality Premium Drinking water by using state of art water treatment technologies and supplying at competitive prices to general masses while keeping professionalism dedication and excellence to meet the international standards.

- **ANTI SNAKE VENOM**

- Establishment of Department of Sero-biology was approved by the Sindh Government in the 2011. The Sero-biology lab started its work on pre-clinical animal studies in 2011 and after successfully completion of lab scale studies on anti-snake venom the research data of Anti snake venom was submitted to Drug Regulatory Agency of Pakistan for evaluation and approval to conduct human clinical trials and pilot production subsequently anti snake venom production required GMP facility for large scale and pilot scale production
- Currently 60 liters of hyper immunized Horse sera have been stored for pilot production purpose. More over Dow University of Health sciences is also trying to collaborate with various biological institutes of china for technology transfer and technology incubation center.

- **ARTIFICIAL LIMB CENTRE**

- Department of Prosthetics & Orthotics successfully delivered prosthetics & orthotics appliances and follow-up 1580 patients in the year 2014
- Currently facilitates Jinnah Post Graduate Medical Centre, Department of Orthopedics Club Foot Clinic by providing 300 Dennis brown splints for their congenital equi-varus

patients, and orthopedic association of Pakistan by providing Hands on training to Post-graduate fellows.

- **AQUEOUS GEL HAND SANITIZER**
- Formulation of water based gel hand sanitizer for commercial use at Dow University of Health sciences, in collaboration with Institute of Biological Biochemical and Pharmaceutical Sciences (IBBPS) for better application of the subject. The major goal of this project is to serve society a natural anti-bacterial product.

❖ **6.3 Technology Incubation Centre**

The Dow University of Health Sciences, Karachi, is still in process of the development of Technology Incubation Centre. As far as current innovations are concerned, there are various technologies, infrastructure etc. are used which may vary product-to-product.

❖ **6.4 Patents/ Trademark**

Dow University of Health Sciences is engaged in process of trademark registration by University Legal Consultant. There are various applications are under process for the registration.

As desired, please find below status of your trademark applications, which we are handling:

| S. # | App. # | Class | Trademark | F. Date | Status |
|------|--------|-------|--|----------|------------|
| 1 | 308949 | 44 | DOW | 21/10/14 | REGISTERED |
| 2 | 344473 | 5 | Shaffaf (Logo) | 05/08/13 | IN PROCESS |
| 3 | 344474 | 32 | Riva (Label mark) | 05/08/13 | ADVERTISED |
| 4 | 368710 | 41 | DR ISHRAT UL EBAD KHAN INSTITUTE OF ORAL HEALTH SCIENCES (DIKIOHS) | 21/08/14 | IN PROCESS |
| 5 | 368711 | 44 | DR ISHRAT UL EBAD KHAN INSTITUTE OF ORAL HEALTH SCIENCES (DIKIOHS) | 21/08/14 | IN PROCESS |
| 6 | 368712 | 42 | DR ISHRAT UL EBAD KHAN INSTITUTE OF ORAL HEALTH SCIENCES (DIKIOHS) | 21/08/14 | IN PROCESS |

| | | | | | |
|----|---|----|----------------------------------|-----------|------------|
| 7 | - | 35 | DOW UNIVERSITY HEALTH CARE(Logo) | 18/11/14 | IN PROCESS |
| 8 | - | 32 | DOW UNIVERSITY HEALTH CARE(Logo) | 18/11/14 | IN PROCESS |
| 9 | - | 32 | Dow Riva | 22/9/2015 | IN PROCESS |
| 10 | - | 35 | Dow Riva | 22/9/2015 | IN PROCESS |
| 11 | - | 32 | Cherish Your Life | 22/9/2015 | IN PROCESS |
| 12 | - | 35 | Cherish Your Life | 22/9/2015 | IN PROCESS |

❖ **6.5 Internship and Placement Office:**

• **ELECTIVES:**

In the recent years, there is an increasing interest of the final year students of Medicine for doing electives in different medical schools/hospitals in the United States/UK. The Quality Enhancement Cell, QEC-DUHS is also responsible for developing collaboration and linkages with other universities and colleges around the globe in different areas of interest. DUHS has developed a Memorandum of Agreement with some of the prestigious foreign Medical Schools for clinical electives namely:

- University of Illinois-Chicago
- University of Louisville

Moreover, DUHS has also attained the membership of American Association of Medical Colleges, AAMC's GHLO (Global Health Learning Opportunities) collaborative, in addition to expand student mobility opportunities through this global network.

• **INTERNSHIPS:**

“Placement Office” ensures the student secures a placement that will support their learning requirements and nurture their professional development.

All work placements must be officially approved by the Placement Office and primarily involves the process of CV selection and competitive interview (if necessary), but can also be secured by

direct matching. The selection process is determined by the host organization. Placement Officer and coordinator provide both group and one-to-one support to the student in the researching, sourcing, securing placement and ongoing support of student whilst on placement.

At Institute of Health Management (IHM), we are fully conscious of the utility of earning practical experience for students by undergoing internship(s) during their studies and after completion their studies. Interning in a field of choice will stand out on students' resume and help them with their job search after graduation. Students/interns should endeavor to gain on-the-job training that integrates education and career development; while organizations and companies hosting interns also benefit from the contributions of creative and innovative students. People/Students meet during the course of their internship become subsequently professional "contacts" who can help guide their career path as they make their way into professional world.

Establishment Students Placement Department

Placement department was established in 2015. This office is made responsible to interact with different organizations including Dow University Health Sciences (internally), offices and industries for placement of IHM students for internship during their studies and subsequently for their employment after their graduation.

Benefits of Internship to Students

In spring & fall -2011, IHM selected 24 students for the BBA program 2011. The placement department offered paid internship for 6 months to 15 Graduates of 2015-2016 who have applied for the internship and selected by the placement committee. They benefited from the internship and were placed in different departments of DUHS after the approval of the Registrar vide letter Ref., DUHS/Reg.2016/-1411 dated on 9th April, 2016(enclosed).

The duration of internship was from April-Sep 2016, according to the duty roster which was designed on rotational basis (1 month), was handed over the interns, before going to their relevant departments such as Registrar Head office, hospital, OPD, Radiology, IHM and DDRL. The purpose of offering them internship was to increase their career related knowledge and provide them valuable work experience.

❖ 6.6 Student Counseling and Career Guidance

Professional Development Centre (PDC) officials provide counseling services to students in DMC and Ojha Campuses regarding their future ambitions. In addition to that, "Student Facilitation Centre" has also been established under the supervision of a Professor to guide students about their academic problems and other issues regarding support departments affairs.

Chapter 7

Strengthening Physical Infrastructure

PLANNING AND DEVELOPMENT DEPARTMENT

The Department of Planning and Development of Dow University planned renovations and refurbishments of old Dow Medical College, and a number of old buildings at Ojha campus. All plans have been executed amicably.

It also planned & constructed various new buildings, which have been designed and constructed by reputable and renowned architects and construction companies.

❖ 7.1 Development Projects (Laboratories, Libraries, etc.)

- Establishment of National Institute of Liver and Gastro Intestinal Diseases (NILGID).
- Establishment of Postgraduate Medical Sciences Research Centre.
- Establishment of Faculties of Oral Health Sciences and Medical Technology.
- Renovation, Rehabilitation and Addition in T.B. Hospital (Institute of Chest Diseases).
- Strengthening of Institute of Physical Medicine and Rehabilitation of Disabled.
- Establishment of Department of Serobiology and Providing Power Generation by Gas along with Heat Recovery System.
- Establishment of Trauma Centre, BSL-3 Lab. and Provision of Support Services at Institute of Chest Diseases.
- Construction of Boys Hostel.
- Addition of 4th Floor in Dow University Hospital.

❖ 7.2 Research Equipment

- Establishment of BSL-III Laboratory.
- Establishment of Serobiological Laboratory.
- Establishment of new Endoscope Suite at NILGID.
- Establishment of 9 ORs and 40 Bedded ICU.
- Strengthen the Radiology Department.
- Strengthen the Diagnostic Research & Reference Laboratory.

❖ **7.3 Construction Projects**

COMPLETED PROJECTS

- Boys Hostel

ONGOING PROJECTS

- Postgraduate Medical Sciences Research Centre.
- Renovation, Rehabilitation and Addition in T.B. Hospital (Institute of Chest Diseases).
- Building for Strengthening of Institute of Physical Medicine and Rehabilitation of Disabled.
- Establishment of Department of Serobiology and Providing Power Generation by Gas along with Heat Recovery System.
- Establishment of Trauma Centre, BSL-3 Lab. and Provision of Support Services at Institute of Chest Diseases.
- Addition of 4th Floor in Dow University Hospital.
- Construction of OT complex.
- Dow Filtration Plant.
- Renovation of Moin Auditorium in DMC Campus.
- Renovation of finance Directorate.

Some other renovated and refurbished projects are mentioned below:

- Old boys' hostel of DMC Campus was shifted into new IPM&R building.

Chapter 8

Strengthening Technological Infrastructure

8.1 Digital Library

Digital Library program was propelled by HEC to help researchers and mentor at public sector universities. Digital Libraries developed by Dow University of Health Sciences in their various campuses and institutes give access to global insightful writing in view of online delivery, peer-reviewed journals, databases, articles and e-books crosswise over extensive variety of controls. Through HEC's digital library which is available from all computerized libraries built up in DUHS, clients can get to more than 75,000 electronic substances. Taking after are the rundown of digital libraries at various campuses of Dow University of Health Sciences alongside the quantity of accessible systems.

- Main Digital Library (Ojha Campus) – 150 Systems
- Digital Library (DMC Campus) –102 Systems
- Digital Library (Institute of Nursing) – 46 Systems
- Digital Library (Institute of Health Management) – 28 Systems
- Digital Library (Dow College of Pharmacy) – 15 Systems
- Digital Library (Institute of Physical Medicine and Rehabilitation) – 27 Systems
- Digital Library (Institute of Dow International Dental College) – (Proposed)

8.2 PERN (Pakistan Education and Research Network)

PERN was initially launched in year 2002 as a part of IT action plan providing Internet facility and interconnectivity between universities for data bank integration, research collaboration and upgrade learning and teaching skills. Dow University of Health Sciences receive a total of 92 MBPS in DMC and Ojha Campus, DUHS is acquiring the services of PERN-II Network. Said bandwidth is further distributed to all other campuses. Now due to expansions we are planning to upgrade up to 100%.

- Dow Medical College Campus – 46 MBPS
MBPS Internet Bandwidth Backup link is provided by NTC DSL.
- Ojha Campus – 46 MBPS
10 MBPS Internet Bandwidth Backup link is provided by Cyber Net Pakistan.

8.3 Video Conferencing

Video conferencing facility is provided by the information technology in all campuses. Clary Icon (PC based web conferencing) setup is installed in Ojha Campus for advance conferencing. Tandberg 990 MXP (Multiple unit supporting up to 4 sites) is deployed in DMC campus. Polygon PVX software is utilized in Ojha Campus for seamless video conferencing and web conferencing experience; which works on H-323 protocol. Cisco WebEx is deployed in DMC campus for conferencing – DUHS currently own license of Cisco WebEx for 25 simultaneous nodes and planning to expend up to 100 users.

APNA training, CTU (CRCP and CRC) classes, HEC workshops, interviews and official meeting are usually conducted through video conferencing facility of DUHS.

8.4 Campus Management Solution

Dow University has been aiming for provision of facilities to students, faculty, and staff with immediate access to real-time information which connects that information to specific action. Campus Management System CMS is logically divided into several modules, each of which maps to a university function/department. DUHS worked closely with the HEC (Higher Education Commission) and “Campus Management Solution” project was initiated at Dow University first time in any university of Pakistan. Higher Education Commission selected six public sector universities for the implementation of Oracle People Soft Campus Solutions, Dow University did the pilot. The Campus Management software is an integrated solution which takes care of the various activities of an educational institution like institution management, student management, administrative functions, etc. The solution is available as a basic integrated application upgradeable to an Intranet / Internet system.

Oracle Corporation has a customized ERP Solution for academic institutions i.e. Campus Management or Student Information System. The solution is a combination of software and hardware. It helps to manage the business processes of an academic institute in an efficient and professional manner.

The integration between various processes and departments i.e. admissions (electronic and manual), enrolment, examination, fees etc. helps in automating the manual and traditional methods of functioning of a campus.

SALIENT FEATURES

- User Interface.
- Easy to Customize.
- Hot Access keys.
- Multi-level Password protection.
- Full featured backup and restoration.
- Unlimited number of users.
- Customized reports.

GAINS and BENEFITS

- The web based features enables the faculty, students as well as the management to interact.
- Student’s services are enhanced by allocating user name and password whereby they can view their mark lists, attendance, syllabus, important notes and other information related to their course on the browser.

- The application generates various reports useful to the management, to the faculty and to the end user separately, for each module.
- The security levels can be administered at three levels.
- The management has the option to set user's right of the end user, depending on the role and job responsibility.
- CMS make easier to prepare and generate reports from different required aspects.

CMS MODULES

- **Students Admission:** This module can automate the admission process of the university; it generates merit lists as per admission criteria and score of the admission test results.
- **Records and Enrolment:** This Module is can enroll different Batches Individually, with Term Activation and individual Process.
- **Student's Financial Matters:** Student Financial module keeps the record of each student's financials including the tuition fees, other Charges and Payments made.
- **Curriculum Management:** This Module is a set of business processes which can maintain Course Catalog, maintain Schedule of Classes, and define Repeat Checking Rules, Maintain Course Requisites, permissions, term activations and other term related activities.
- **Campus Community:** It is the foundation of PeopleSoft Campus Solutions package which provides the 3C's concept i.e. Communications, Checklists and Comments. It enables to maintain People Biographical Data, Service Indicators and Organizations data.
- **Student's Grade Book:** The Students' Grade book helps to monitor class assignments and grades acquired.
- **Student Self-Service:** They can access of Biographical Information, Fee Vouchers and Examination Forms, with their own password.
- **Enterprise Portal:** It is a world class portal solution with many robust content and collaborative features, which is in use at DUHS also.

8.5 Web Portal

Web portal of Dow University of Health Sciences assist in timely update of news, events, information on the official website of the university which is managed by IT department. It provides al l the information regarding admissions, curriculum, examination and events planned in the university. Following facility are provided through web portal

- Accessibility to DUHS official email
- Faculty profile
- Professional Development Center Website
- Quality Enhancement Cell Website
- ORIC Website
- DUHS Career Opportunities / Jobs
- Admissions Cell Area

- Picture Gallery of the latest news & events
- Microsoft for all
- Convocation data
- Dow Club Card
- Alumni Data
- Dow Executive Clinic
- Tenders and Advertisement
- DUHS CME (Continuous Medical Education)
- JDUHS (Journal of Dow University of Health Sciences)
- Curriculum and Course outline of MBBS
- Computer base online QEC forms and analysis.
- Online Degree Application Tracking System.
- Information of All the Colleges and Departments of DUHS
- Social Media Links

8.6 Online Admission System

Online admission assist in reducing work load, avoid data entry mistakes and of course in keeping up to date record by electronic means. DUHS announces admissions in different programs; online admission assist in form filling over the website, provision of electronic copy of prospectus along with related information, eligibility criteria & fee structure of the courses, day to day updates and news alerts about admissions, entry test & interview dates announcements, display of online Merit list.

- Following are the server configurations of the Dow University Website
- Operating System: Linux
- Web server: Apache/PHP
- Database: MySQL
- VPS based hosting is acquired from Hostmonster.com

Chapter 9

University Building Communities

❖ **9.1 University-Community Interaction**

Description of Dow University Hospital

Dow University Hospital located at Ojha campus, Suparco Road, Karachi. It is a tertiary care teaching University Hospital attached to Dow International medical college (DIMC). This hospital also serves as a teaching unit for Institute of Nursing & Clinical Pharmacology rotation for students of college of pharmacy, housed adjacent to university hospital at Ojha campus of Dow University.

This university hospital is supported with the diagnostic facilities from Dow Diagnostic & Research laboratories (DDRRL) & Dow Radiology, both of them are equipped with cutting edge technology & well trained technologists & faculty.

This hospital has 500 beds to serve for teaching & training of undergraduate students of DIMC & postgraduate students. This hospital has Operation theater complex, Intensive Care Unit (ICU), Neonatal Care Unit (NICU) to support all kind of operations & care for critically ill patients respectively. It has 6 labor rooms & a well-baby nursery.

The hospital has private rooms, semi private & general ward type of accommodation to cater for each class of patient. The emergency room facility is available round the clock with backup portable ventilators & other resuscitation equipment's. The OPD block of the hospital is providing ambulatory care to 14,000 - 15,000 patients per month. The executive OPD is from 2pm till 9pm. Here our own faculty is providing the consultations at this nominal rate as a service to community, irrespective of their actual private consultation fee.

This general hospital has Resident Medical officers, nurses and paramedical staff who are available round the clock with day and night shifts. All types of major & minor surgeries are being performed by expert consultant. Labor room is also functional round the clock along with intensive care unit, which is fully equipped

Out Patient Department (OPD):

It is providing the health care facilities in the following categories.

1. Nephrology
2. Medicine
3. Hematology
4. Physiotherapy & Occupational Therapy services
5. Oncology
6. Treatment area (Plaster of Paris, stitching, bandage of "8")
7. Cardiology
8. Dermatology
9. Gynaecology
10. Pulmonology

11. Psychiatry
12. Speech therapy
13. Paeds
14. Paeds surgery
15. General Surgery (all minor surgery)
16. ENT
17. Neurosurgery
18. Urology
19. Orthopedic
20. Obesity Clinic
21. Gastro Intestinal Diseases
22. Breast Surgery
23. Hepatobiliary disease
24. Plastic Surgery

FEE STRUCTURE

There are two times and types of OPD. Fee structure is as follows:

- | | | |
|---|---------------------|-------------------------------|
| • | from 08:30 to 12:30 | Fee Rs.100/- General Clinic |
| • | from 02:00 to 09:00 | Fee Rs.300/- Executive Clinic |
| • | Medical Checkup | Fee RS 500/- |
| • | Penal Consultation | Fee RS 500/- |

Pharmacy Services:

Pharmacy provides 6 days a week services to its customer. All prescription drugs and over the counter drugs are stocked by pharmacy to cater the needs of our patients as well as patients from outside.

Vaccination Services:

Vaccination services are available as per provided by National Expanded Programme of Immunization (EPI).

Physiotherapy Services:

The Department of Physiotherapy provides comprehensive inpatient and outpatient. All Physiotherapists are here to assess and treat patients of all ages and ailments and provide an important support service for our inpatients and out patients

In Patient Departments:

- Surgical
- Medical
- Gynae / Obs
- Orthopedic
- Paeds

- Psychiatry
- E.N.T
- Dialysis
- Ultrasound
-

Critical Care Unit

- Medical ICU (11 Bed)
 - Surgical ICU (06 Bed)
 - Neonatal ICU (06 Incubators)
 - Operation Theater (04 O.T Tables)
 - Labor Room
 - Emergency Department (15 monitored Bed)
- Fully equipped 24 hours running ER including separate minor O.T, Ultrasound & X-Ray.
- Sleep Lab (Polysomnography)
 - Pulmonary Function Test
 - EMG / NCV
 - EEG
 - CTG
 - VEP
 - G.A Fitness

❖ 9.2 University Role In Building Community

The Dow University of Health Sciences, since its inception has been focusing on community services to provide preventive, diagnostic and treatment facilities for community health care specially to the under privileged class. The students of various undergraduate and postgraduate programs of DUHS are also actively involved with the faculty members in all the Civic Engagements of DUHS.

Civic Engagements of DUHS

• DISASTER MANAGEMENT IN NATURAL CALAMITIES

➤ Earth Quake in 2005

- DUHS arranged a workshop for handling mass casualties with disaster management cell.
- Groups of doctors, students and Allied Health Workers were send to different affected areas of Kashmir and NWFP.
- These teams provided medical & surgical treatment to the victims.

➤ **FLOOD RELIEF WORK in 2010 & 2011**

- A huge fund raising campaign was launched by Dow University of Health Sciences with the help of students and faculty to provide food, shelter and items of daily need to the large number of homeless flood victims.
- Food items and other essential products were packed and distributed personally by students in affected areas of interior Sindh.
- 19 Truckloads of medicine, food & articles were distributed.

• **SOCIAL ENTREPRENEURS**
PROVISION OF SAFE DRINKING WATER

- There is a dearth of safe drinking water especially in slum areas of Karachi. Dow University designed a filter plant, which can operate with solar light and provide clean & safe drinking water to a larger community.
- Presently three filter plants are installed at three slum areas one in Karachi and two in the interior of Sindh, which are helping the community. Further, Installations will take place soon.

• **SERVICES FOR IMPROVING QUALITY OF LIFE**
CORRECTION OF FUNCTIONAL DISABILITIES

- The incidence of congenital physical and functional disorders is on the rise in Pakistan. Therefore Dow University has established Institute of Physical Medicine & Rehabilitation, a part of which is the child development center which deals with 'Autism' a common problem, recognized quite late by the parents.
- This Centre also conducts awareness programs for the community with the help of students for early recognition of this functional disorder and the required management.

• **TOOLS TO MAKE DEPENDENT PATIENTS INDEPENDENT**
PROVISION OF PHYSICAL AIDS TO DISABLE PERSONS

- The Dow University artificial limb Centre (DUAL), provides artificial limbs, almost free of cost to limbless people so as to make them independent for their daily activities.
- More than 3500 people have been provided artificial limbs free of cost until now.

• **CREATING AWARENESS FOR PREVENTIVE STRATEGIES**
HEALTH EXPO

Dow Health Expo was held at a very large scale on a span of three days at the Expo Centre Karachi, where public was attracted with light entertainment and then checkups of all specialties were offered by specialists free of cost. Blood tests and dental checkups were also done free of cost.

- **HELPING FOR CORRECTIONS**
COSMETIC REPAIR FOR SEVERE BURNS

Dow University in collaboration with Ms Hashmat Affendi from House of Charity (Texas USA) got two reconstructive surgery sessions performed by experienced Plastic Surgeons of Houston. About 70-80 severely disable patients were benefitted.

- **AWARENESS PROGRAMS**
COMMUNITY HEALTH WORK (for Dentistry)

Students of Dow International Dental College along with their faculty members also performed the Community work regarding free dental checkups.

COMMUNITY HEALTH WORK (for Medical Checkups)

Students of Dow International Medical College (DIMC) along with the faculty and an NGO have been holding camps at frequent intervals for general screening and counseling of the public.

GOOD PRACTICES IN NURSING

The profession of Nursing in Pakistan's lacks in depth of knowledge and skills in clinical practice which is a great hindrance in quality of health care practices as Nurses are the back bone of Health Professions along with other paramedical staff. Therefore, students of nursing at Dow University conducted various seminars not only in various hospitals but also in the community to attract students in this dynamic profession.

- **HELPING PATIENTS OF CHRONIC DISEASES**
TREATMENT THROUGH CAMPS AND STUDENT'S MOTIVATION FOR PUBLIC SERVICES

Dow University of Health Sciences organized several eye camps at various peripheral areas of the city to provide free consultation and treatment to the under privileged class of the community.

- **PROMOTING SENSE OF WELL BEING**

FREE PLASTIC SURGERY FOR BIRTH DEFECTS (OUTREACH PROGRAM)

- In Pakistan, there are increasing incidences of congenital birth defects eg cleft lip & Palate, specially seen in under privileged class of the society due to various reasons including malnourishment. Dow University conducted several camps in this connection mainly in the interior of Sindh.

- Students took keen interest in motivating the patient's relatives for operation and maintaining record for further follow-up.

- **TRAINING OF HEALTH VOLUNTEERS**

FOR FIRST AID TREATMENTS by Professional Development Centre

Professional Development Centre of DUHS is not only training undergraduates, postgraduates and the faculty members but also the Allied health related workers eg Nurses, Paramedics, general students and laymen for first aid procedures.

- **REHABILITATION**

CHRONICALLY ILL PATIENTS

- The Institute of Physical Medicine & Rehabilitation (IPM&R) provides physiotherapy manually and with machines for wide variety of disorders.
- **TB PATIENTS TO BE MADE SELF EARNER**

TECHNICAL TRAINING OF TB PATIENTSDURING TREATMENT PHASE

Patients of TB require long term treatment for about 9 months to 1 year, during this period they even lose jobs, therefore the Dow University not only provides free medicines, food and others sorts of treatment but also provides technical training so that they can acquire skills and become self-earner. These skills include candle making, block printing, stitching and computer training etc.

- **BLOOD DONATION CAMPAIGN**

-

- Dr. Ishrat ul Ebad Khan Institute of Blood Diseases has been established for clinical research in blood diseases and for MPhil & PhD courses besides blood transfusion services to the community.
- It will also meet increasing demands of blood needed in diseases, road traffic accidents, gunshot wounds and other conditions.
- **HELPING SNAKE BITE PATIENTS**

INDUSTRIAL LINKAGE OF DOW UNIVERSITY DEVELOPED FOR ANTISNAKE VENOM PRODUCTION

Thousands of Pakistanis die every year due to non-availability of anti-snake venom, which is usually imported. Considering this problem the Dow University has developed anti-snake venom after nurturing all available species of snakes in its animal house as per required protocol. Twenty horses are hyper immunized against the snake poison. The serum of these horses will now be processed by Macter International (Pvt. Ltd) for commercial production of anti-snake venom.

❖ **9.3 Alumni Affairs: Outstanding Achievement etc**

Huge counts of alumni from Dow University of Health Sciences are serving in various medical and allied health sciences of national as well international repute.

- **International Alumni Outstanding Achievements**

Above 3000 graduates of Dow University of Health Sciences are practicing in various medical institutions of USA, UK, KSA and other countries. Majority of them are supervising the different medical departments, contributing in the medical researches etc.

- **National Alumni Outstanding Achievements**

A large number of graduates of Dow University of Health Sciences are serving humanity throughout the country and hold key posts. Majority of them are the heads of various health care institutions.

Chapter 10

Sports

❖ **10.1 Inter-departmental sports**

The Dow University of Health Sciences regularly organizes Annual Sports Week every year. Every 4th year the student week is held under the name of Dow Olympics. The students of all the constituents 'colleges/institutes of DUHS actively participate in the event. Sports facilities including gymnasium and fitness club has been developed at Ojha Campus which is free for all students, faculty and staff.

Different types of sports events keep them physically fit and active, whereas debates and other intellectual activities enhance their soul and heart. Not only now, but these activities also groom them for their future practical lives. These activities instills in them good communication skills, leadership qualities, team work, ability to gracefully accept their failures and elegantly celebrate their success.

During the week, various events like Naat, Qirat, English and Urdu Debates, Bait Bazi and cooking competitions are arranged. Outdoor events like cricket (for both boys and girls), Football, Races, Shot put, Javelin Throw etc. are held.

Indoor events like Basket Ball, Throwball, Netball, Badminton, Table Tennis etc are held in the state of art Gymnasium at Ojha Campus. All the events are supervised and scrutinized by Judges and referees of respected fields for transparency and professionalism.

Finally, this week long event ends with Talent Show in which students show their talents in Drama, Songs etc. followed by a grand prize distribution ceremony in which medals/shields and certificates are given.

❖ **10.2 Participation in national championships**

The students of DUHS participate in various local and regional competitions and have brought laurels for the university. The details include as;

- HEC All Pakistan Inter-University Basketball Tournament of boys 2014-15.
- Allama Iqbal Shield Declamation Contest 2014-15.
- DUHS team (girls) for Volley Ball participated in Volley Ball Competition at SZABIST Olympiad 2015.
- DUHS team for Throw Ball participated in throw ball Competition at SZABIST Olympiad 2015.
- DUHS team (girls) for Table tennis participated in table tennis competition at SZABIST Olympiad 2015.
- DUHS team (boys) for badminton participated in badminton competition at SZABIST Olympiad 2015.
- DUHS team (girls) for Throw Ball participated in throw ball Competition at Bahria University.
- DUHS team (boys) for Volley Ball participated in Volley ball Competition at Bahria University.
- DUHS team (girls) for Volley Ball participated in Volley ball Competition at Bahria University.

- DUHS team (boys) for Volley Ball participated in Volley ball Competition at NED University Sports Fiesta.
- Participated in AKU Inter-University Cricket Tournament (Boys) in 2014-15.
- Participated in Urdu debate at Liaquat University of Health Sciences Trilingual Declamation Contest.

❖ **10.3 Achievement at Regional /National level**

- Inshal Javed secured 1st position in Urdu debate at Regional level.
- Won Allama Iqbal shield declamation contest 2014-15.
- Inshal Javed secured 1st position in Urdu debate at Liaquat University of Health Sciences Trilingual Declamation Contest.
- Inshal Javed & Rida Majeed was the runners up in All Pakistan Declamation Contest at PAF Academy Risalpur.
- DUHS team (girls) for Volley Ball was the runners up for the Volley Ball Competition at SZABIST Olympiad 2015.
- DUHS team for Throw Ball was the winner for the throw ball Competition at SZABIST Olympiad 2015.
- DUHS team (girls) for Table tennis won the table tennis competition at SZABIST Olympiad 2015.
- DUHS team (boys) for badminton was the runners up for the badminton competition at SZABIST Olympiad 2015.
- DUHS team (girls) for Throw Ball was the winner for the throw ball Competition at Bahria University.
- DUHS team (boys) for Volley Ball was the winner for the Volley ball Competition at Bahria University.
- DUHS team (girls) for Volley Ball was the runners up for the Volley ball Competition at Bahria University.
- DUHS team (boys) for Volley Ball was the runners up for the Volley ball Competition at NED University Sports Fiesta.
- Won AKU Inter-University Cricket Tournament (Boys) in 2014-15.

❖ **10.4 Incentives and honors/ awards for sports persons.**

DUHS awards special shields and certificates of appreciation to the winners of different sports and co-curricular / extra-curricular activities contests held at regional and / or national level.

Medallions and shields are also awarded to the winners of inter departmental sports/ contest winners.

Chapter 11

University Building Leadership

❖ **11.1 Faculty Leadership (Awards and representation in Govt policy making committees, memberships on various councils etc.)**

Faculty Leadership Awards of faculty members are mentioned below:

| Name of Faculty Member | Title of Award | Year | Name of Org. |
|-------------------------------|----------------------------------|-------------|--|
| Prof. Dr. Sumbul Shamim | Productive Scientist of Pakistan | 2016 | Pakistan Council for Science and Technology, Ministry of Science and Technology-Pakistan |
| Prof. Dr. Sumbul Shamim | NRPU-Research Grant Awarded | 2015 | Higher Education Commission |
| Prof. Dr. Sumbul Shamim | NRPU-Research Grant Awarded | 2016 | Higher Education Commission |
| Dr. Saeed Khan | DOGANA Annual Award | 2015 | Dow Graduate Association of North America, DUHS. |
| Dr. TalatRoome | Annual Research Award 2015. | 2015 | Dow Graduate Association of North America (DOGANA) |
| | Best Research Award | 2015 | DUHS |
| | Gold Medal Award | 2014 | Pakistan Society of Immunology, in Pathology Congress, December 2013, delivered on 26 th April, 2014. |

2- Representation in Govt. Policy Making Committee (FY 2014-15)

| Name of Faculty Member | Name of Committee / Representation | Year | Name of Org. |
|--------------------------|---|-----------|--|
| Prof. Dr. Sumbul Shamim | Syndicate | 2015-2016 | Dow University of Health Sciences |
| Prof. Dr. Sumbul Shamim | Board of Studies, Department of Pharmacology | 2015-2016 | Faculty of Pharmacy, University of Karachi |
| Prof. Dr. Sumbul Shamim | Board of Faculty | 2015-2016 | Faculty of Pharmacy, Federal Urdu University of Arts, science and Technology |
| Prof. Muhammad Masroor | Departmental Tenure Review Committee | 2015 | DUHS |
| Muhammad Khan | Member | 2015-16 | DPT National Curriculum Review Committee (NCRC) HEC |
| Saeed Akhtar | Member | 2015-16 | DPT National Curriculum Review Committee (NCRC) HEC |
| Dr Nilofer Fatimi Safdar | Member, Development of Dietary Guidelines (DG) for Pakistan | 2015 | Ministry of Planning, Development & Reform/ Planning Commission Nutrition Section Islamabad |
| Masood Anwar Qureshi | Technical Research Advisory Committee (TRAC) | 2014-15 | Ministry of National Health Services, Regulation & Coordination (Population Program Wing), Islamabad, Govt of Pakistan |
| Masood Anwar Qureshi | National Curriculum Revision Committee | 2015 | Higher Education Commission, Islamabad, Pakistan |

| | | | |
|----------------------|---|---------|--|
| Masood Anwar Qureshi | As member of Panel of Experts in Physiology for inspection of Medical & Dental colleges | 2014-15 | PMDC, Islamabad, Govt. of Pakistan |
| Masood Anwar Qureshi | As Inspector to inspection Post-graduate program in Medical and Health universities | 2014-15 | PMDC, Islamabad, Govt. of Pakistan |
| Masood Anwar Qureshi | Board of Studies in Physiology | 2014-15 | University of Karachi |
| Masood Anwar Qureshi | Board of Studies in Health & Physical Education | 2014-15 | University of Karachi |
| Masood Anwar Qureshi | Board of Governors | 2014-15 | National Center for Proteomics, University of Karachi |
| Masood Anwar Qureshi | As an External Examiner for M.Phil&Ph.D for review & viva voce | 2014 | Lahore University of Health Sciences |

3- Membership in Various Councils (FY 2014-15)

| Name of Faculty Member | Status | Year | Name of Council. |
|-------------------------|--|----------------|---|
| Dr. Shumaila Aman | Member | 2005 onwards | Pharmacy Council of Sindh |
| Prof. Dr. Sumbul Shamim | Inspector (name accepted and letter awaited) | 2016 | Pharmacy Council of Pakistan (PCP) |
| M. Saeed Quraishy | President , PSG + GIE | 2015 – 2017 | Pakistan Society of Gastroenterology + GI Endoscopy |
| M. Saeed Quraishy | President, Pakistan Chapter | 2014 – 2016 | International Hepato-Pancreato-Biliary Association |
| Prof. Muhammad Masroor | Ex-Elected member | 2015 | CPSP, Faculty of Medicine, College of Physicians and Surgeons of Pakistan |
| Prof. Muhammad Masroor | Member | 2014 | European Association of Liver Diseases (EASL) |
| Prof. Muhammad Masroor | Member | 2014 | Asian Pacific Association for the Study of Liver (APSL) |
| Prof. Dr. Sumbul Shamim | Member | 2005 till date | Member Pakistan Pharmacist Association |
| Dr. Fakhshsheena Anjum | Member | 2008 till date | Pakistan Pharmacist Association |
| Dr. Hina Yasin | Member | 2015 | Pharmacy Council |
| Dr. Munawar Hussain | Member | 2015 | PMDC, Radiology society of Pakistan |
| Dr. Mahreen Rasool | Member | 2015 | PMDC, Radiology society of Pakistan |
| Dr. Nauman Al-Qamari | Member | 2015 | International Radiology Society |
| Prof. Dr. Nabila Soomro | Member | 2014-15 | Pakistan Society of Neuro-rehabilitation |
| Madeeha Latif | Member | 2015 | Pakistan Psychological Association |
| Madeeha Latif | Member | 2015 | Pakistan Society of Neuro-rehabilitation |
| Atiq ur Rehman | Board of Director | 2015-17 | Pakistan Society Therapy Association (PPTA) |
| Umesh Kumar | Information Secretary | 2015-17 | PPTA (Sindh Chapter) |

| | | | |
|--------------------------|-------------------|------------------|--|
| Dr Nilofer Fatimi Safdar | Member | 2014-15 | Asian Federation of Dietetic Association(AFDA) |
| Prof. Dr. Arshad Hasan | Finance Secretary | 2015 | (PDA) |
| | Member | 2015 | International Association for Dental Research |
| | President | 2015 | Pakistan Association for Dental research |
| | Vice President | 2015 | Pakistan Association of Restorative Dentistry |
| | Member | 2015 | Pakistan Association of Medical Editors (PAME) |
| Sahar Iqbal | Member | 2014 Lifetime | PMA Pakistan Society of Chemical Pathology |
| Mushtaq Hussain | Associate member | 2012-2015 | Royal Society for protection of birds |
| | Associate member | 2013-2015 | Society for General Microbiology |
| | Associate member | 2015 | International Association of Pathologist |
| Dr. Sambreen Zameer | Member | 2015 Lifetime | Medical Microbiology & Infectious Diseases Society of Pakistan |
| Dr. Saeed Khan | Member | 2014-15 | American Society for Microbiology |
| Dr. Saeed Khan | Member | 2015 | European Biosafety Association |
| Dr. Saeed Khan | Member | 2014-15 | Pakistan Society for Microbiology |
| Dr. Saeed Khan | Member | 2014-15 | American Society for Microbiology |

| | | | |
|----------------|--------|------|---|
| Dr. TalatRoome | Member | 2015 | International Academy of Pathology, USA |
| | Member | 2015 | Society of Ethno biology, USA |
| | Member | 2014 | Pakistan Academy of Pathology |
| | Member | 2014 | Pakistan Society of Immunology |

❖ **11.2 Student leadership (Co-curricular Activities: University dramas, exhibition, expos, competitions debates at national and international levels)**

- **Sarim Ahmed**- (Dow College of Pharmacy) winner of National & Regional English Debate Contests
- **InshalJaved**–Member of the Youth Parliament, Sindh, Pakistan.
- **AdilHanif, MehreenSohail, Umber Saeed, &UnaizaShafiq** Presented Poster in World Extreme Medicine Conference, in 2015 at United Kingdom

Chapter 12

Finance

| DOW UNIVERSITY OF HEALTH SCIENCES, KARACHI | | | |
|---|-----------------------------|---|--------------------------|
| FINANCE DIRECTORATE | | | |
| | | | Amount in Million |
| Chapter 12 Finance | Particular | Approved Budget 2015-16 | Actual 2015-16 |
| 12.1 | Annual Statement of Account | Annexure: I | |
| 12.2 | Financial Year at a Glance | | |
| 12.3 | Audit Report | Conduct by AG Audit Report is in Process | |
| 12.4 | Development Budget HEC | HEC Rs. 150.000 GOS Rs. 200.000 UDWP Rs. 1008.227 | |
| 12.5 | Recurring Budget | 1977.661 | 1965.323 (Annex: II) |
| 12.6 | Self - Generated Income | 1196.000 | 1203.327 (Annex: III) |
| 12.7 | SAP related activities | Not Applicable | |
| 12.8 | Trend Per Student Spending | Actual Exp. 1965.323/ 7095 Students (Annex: IV) | 2015-16 |
| | | | 0.277 |

| DOW UNIVERSITY OF HEALTH SCIENCES, KARACHI | | |
|---|---|-----------------------------|
| ANNUAL STATEMENT OF ACCOUNTS (2015-16) (Annex-I) | | |
| | | [Million Rs.] |
| | Particulars | 2015-16 (Actual) |
| | 1. Opening Balance: | |
| | 2. Total Grants & Donations [a - f] | 648.828 |
| a. | Federal Government (Annual) | 491.650 |
| b. | Supplementary / Additional Grant | 43.845 |
| c. | Grant for Tenure Track Faculty | 12.866 |
| d. | Provincial Govt. Grant | 100.000 |
| e. | Donations | 0.467 |
| f. | Any Other Grant | |
| | 3 (i) Students Related Income [3(i) a - 3(i) e] | 1,144.991 |
| | <i>Tuition Fees</i> | 942.575 |
| | <i>All Other Fees</i> | 170.715 |
| | <i>Hostel / User Charges, etc.</i> | 28.105 |
| a. | On Campus Students (sub-total) | 1,141.40 |
| b. | Affiliated College/institutions' Students | - |
| c. | External (Private) Students | |
| d. | Income from Continuing Professional Development Courses for Business & Community | 3.596 |
| e. | Income from Continuing Education [CE] Courses for Business & Community | |
| | 3 (ii) Other Venues of Income [3(ii) a - 3(ii) f] | 44.673 |

| | | |
|--|---|------------------|
| a. | Income from Collaborative and Contract Research | |
| b. | Income from Consultancy & Testing | |
| c. | Income from Intellectual Property | |
| d. | Income from Regeneration & Development Programs | |
| e. | Alumini | |
| f. | Any Other Income | 44.673 |
| 3 (iii) Receipts from Endowment Fund (if any) | | 13.66 |
| 3. Total Own Resources | | 1,203.327 |
| A. Total Available Resources [1+2+3] | | 1,852.155 |
| 4. Expenditure Break-up: | | 1,965.323 |
| a. | Faculty Salary | 698.130 |
| b. | TTS Faculty Salary/ Gratuity | 18.852 |
| c. | Salary of Officers & Staff -Teaching Departments | 28.210 |
| d. | Salary of Officers & staff -All Non-Teaching Departt: | 217.584 |
| e. | Other Establishment Charges | 52.887 |
| f. | Non Salary Expenses / Other Charges | 930.676 |
| g. | Research | 11.079 |
| h. | Library Expenses | 7.905 |
| 5. Total Establishment Charges [4 a to e] | | 1,015.663 |
| 6. Total Non Salary Expenses [4 f to h] | | 949.661 |
| B. Total Expenditures [5 + 6] | | 1,965.323 |
| C. Surplus / Deficit [A - B] | | (113.168) |

| DOW UNIVERSITY OF HEALTH SCIENCES, KARACHI | | |
|---|---|-----------------------|
| RECURRING EXPENDITURE (Annex- II) | | |
| | | Million Rs. |
| Code No. | Budget Heads | 2015-16 Actual |
| A012 | Pay & Allowances | 1,015.663 |
| A031 | Fees (Total) | 2.833 |
| A03101 | Bank Fees | 2.833 |
| A032 | Communication (Total) | 6.251 |
| A03201 | Postage and Telegraph | 0.003 |
| A03202 | Telephone & Trunk Calls | 2.182 |
| A0320402 | PERN | 2.218 |
| A0320403 | Internet Charges | 0.801 |
| A03205 | Courier and Pilot Services | 1.047 |
| A033 | Utilities (Total) | 77.867 |
| A03301 | Gas | 8.422 |
| A03302 | Water | 6.968 |
| A03303 | Electricity | 62.478 |
| A034 | Occupancy Costs (Total) | 44.053 |
| A03410 | Security Charges | 15.580 |
| A03470 | Other Occupancy Cost | 28.473 |
| A036 | Motor Vehicles (Total) | 4.807 |
| A03602 | Insurance | 4.652 |
| A03603 | Registration | 0.155 |
| A037 | Consultancy & Contractual Work (Total) | 5.757 |
| A03702 | Management | 5.757 |
| A038 | Travel & Transportation [Total] | 58.590 |

| | | |
|-----------------|--|----------------|
| A03801 | Training - Domestic | 0.005 |
| A03805 | Travelling Allowance - TA/DA | 2.784 |
| A03806 | Transportation of Goods | 0.578 |
| A03807 | P.O.L. Charges | 9.934 |
| A03820 | Others-Transport Exp. | 45.289 |
| A039 | General Operating Expenses (Total) | 418.568 |
| A03901 | Stationery | 5.706 |
| A03902 | Printing and publications | 9.592 |
| A03903 | Conferences / Seminars / Workshops / Symposia | 4.906 |
| A03905 | Newspapers Periodicals and Books | 7.905 |
| A03907 | Advertising & Publicity | 10.424 |
| A03915 | Payment to Govt. Department for Services Rendered | 0.232 |
| A03917 | Law Charges | 5.871 |
| A03918 | Exhibitions Fairs & Other National Celebrations | 0.959 |
| A03919 | Payments to Other services rendered- Audit Fee etc. | 0.043 |
| A03927 | Purchase of Drugs and Medicines | 1.854 |
| A03933 | Service Charges | 3.916 |
| A03940 | Unforeseen Expenditure / Contingencies | 1.662 |
| A0394202 | Chemicals / Glassware | 3.426 |
| A0394204 | Consumable | 12.500 |
| A03959 | Stipends Incentives to PG's/Stipent to MDS/ etc. | 299.706 |
| A03970 | Others | 16.184 |
| A0397002 | i. Operational Cost- Office of Research Innovation & Commercialization (ORIC) | 10.570 |
| A0397003 | ii. Operational Cost of Quality Enhancement Cell (QEC) | 1.050 |
| A0397005 | iv. Conduct of Examinations | 11.699 |

| | | |
|-----------------|---|----------------|
| A0397006 | v. Sports Activities | 0.889 |
| A0397008 | vii. Remuneration to Part-time Teachers / Visiting Faculty | 9.473 |
| A03 | Total Operating Expenses | 618.726 |
| A04 | | |
| A04 | Employees Retirement Benefits (Total) | 57.198 |
| A04102 | Commuted Value of Pension/ GP Fund (University Share) | 50.382 |
| A04114 | Superannuation Encashment of LPR | 6.517 |
| A04170 | Others - Assistance Package for Families of Emps | 0.300 |
| A13 | Repair and Maintenance (Total) | 89.088 |
| A13001 | Transport | 16.141 |
| A13101 | Machinery & Equipment | 22.432 |
| A13201 | Furniture & Fixture | 1.501 |
| A13301 | Office Buildings | 34.638 |
| A13302 | Residential Buildings | 7.808 |
| A13703 | I.T. Equipment | 2.263 |
| A13801 | Maintenance of Gardens | 2.514 |
| A13901 | Lines & Wires - Repair | 0.859 |
| A13920 | Others - Repair | 0.931 |
| A022 | Research Survey & Exploratory Operations (Total) | 11.079 |
| A02201 | Research and Survey | 11.079 |
| A061 | Financial Assistance/ Scholarships (Total) | 62.194 |
| A0610102 | Need Based Scholarships | 62.194 |
| A063 | Entertainments and Gifts (Total) | 3.618 |
| A06301 | Entertainments | 3.618 |
| A064 | Other Transfer Payments (Total) | 2.188 |

| | | |
|-----------------|--|------------------|
| A0640204 | Contribution / Transfers to Benevolent Fund | 2.188 |
| A09 | Expenditure on Acquiring of Physical Assets (Total) | 98.183 |
| A09201 | Hardware | 56.198 |
| A09202 | Software | 8.902 |
| A09203 | Purchase of I.T. Equipment | 2.301 |
| A09501 | Purchase of Transport | 0.099 |
| A09601 | Purchase of Plant & Machinery | 12.579 |
| A09701 | Purchase of Furniture & Fixture | 14.532 |
| A09470 | Others | 3.571 |
| A124 | Civil Works - Buildings & Structures (Total) | 7.385 |
| A12405 | Electrification Plumbing and Other Infrastructure | .385 |
| | Total Expenses | 1,965,323 |

| DOW UNIVERSITY OF HEALTH SCIENCES, KARACHI | | |
|---|--|-----------------------------|
| ANNUAL STATEMENT OF ACCOUNTS (2015-16) | | |
| | | [Million Rs.] |
| | Particulars | 2015-16 (Actual) |
| | 1. Opening Balance: | |
| | 2. Total Grants & Donations [a - f] | 648.828 |
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| b. | Supplementary / Additional Grant | 43.845 |
| c. | Grant for Tenure Track Faculty | 12.866 |
| d. | Provincial Govt. Grant | 100.000 |
| e. | Donations | 0.467 |
| f. | Any Other Grant | |

| | | |
|--|---|------------------|
| 3 (i) Students Related Income [3(i) a - 3(i) e] | | 1,144.991 |
| <i>Tuition Fees</i> | | 942.575 |
| <i>All Other Fees</i> | | 170.715 |
| <i>Hostel / User Charges, etc.</i> | | 28.105 |
| a. | On Campus Students (sub-total) | 1,141.40 |
| b. | Affiliated College/Institution's Students | - |
| c. | External (Private) Students | |
| d. | Income from Continuing Professional Development Courses for Business & Community | 3.596 |
| e. | Income from Continuing Education [CE] Courses for Business & Community | |
| 3 (ii) Other Venues of Income [3(ii) a - 3(ii) f] | | 44.673 |
| a. | Income from Collaborative and Contract Research | |
| b. | Income from Consultancy & Testing | |
| c. | Income from Intellectual Property | |
| d. | Income from Regeneration & Development Programs | |
| e. | Alumni | |
| f. | Any Other Income | 44.673 |
| 3 (iii) Receipts from Endowment Fund (if any) | | 13.66 |
| 3. Total Own Resources | | 1,203.327 |
| A. Total Available Resources [1+2+3] | | 1,852.155 |
| 4. Expenditure Break-up: | | 1,965.323 |
| a. | Faculty Salary | 698.130 |
| b. | TTS Faculty Salary/ Gratuity | 18.852 |
| c. | Salary of Officers & Staff -Teaching Departments | 28.210 |
| d. | Salary of Officers & staff -All Non-Teaching Depart: | 217.584 |
| e. | Other Establishment Charges | 52.887 |
| f. | Non Salary Expenses / Other Charges | 930.676 |

| | | |
|---|-------------------------|------------------|
| g. | Research | 11.079 |
| h. | Library Expenses | 7.905 |
| 5. Total Establishment Charges [4 a to e] | | 1,015.663 |
| 6. Total Non Salary Expenses [4 f to h] | | 949.661 |
| B. Total Expenditures [5 + 6] | | 1,965.323 |
| C. Surplus / Deficit [A - B] | | (113.168) |

STUDENT STRENGTH 2015-16 (ACTUALS) (Annex IV)

| | Course Name | Bachelor | Master | MS/ M.Phil. | PhD | Total |
|----------|--|-----------------|---------------|------------------------|------------|--------------|
| 1 | MBBS | 2,583 | | | | 2,583 |
| 2 | BDS | 831 | | | | 831 |
| 3 | BS-Dental Care Professional | 54 | | | | 54 |
| 4 | Pharm-D | 547 | | | | 547 |
| 5 | BS Medical Technology | 463 | | | | 463 |
| 6 | BS Physical Medicine & Rehabilitation | 95 | | | | 95 |
| 7 | BBA | 144 | | | | 144 |
| 8 | BS Nursing | 114 | | | | 114 |

| | | | | | | |
|-----------|-----------------------------------|------------|------------|--|--|------------|
| 9 | BSC Nursing | 145 | | | | 145 |
| 10 | Doctor of Physiotherapy | 607 | | | | 607 |
| 11 | Associate Applied Sciences | 64 | | | | 64 |
| 12 | ABME | 16 | | | | 16 |
| 13 | BS Nutrition | 26 | | | | 26 |
| 14 | FCPS | | 663 | | | 663 |
| 15 | MDS | | 92 | | | 92 |
| 16 | MHPE | | 13 | | | 13 |
| 17 | MSBE | | 7 | | | 7 |
| 18 | MScDS | | 86 | | | 86 |
| 19 | MScDE | | 23 | | | 23 |
| 20 | MD | | 49 | | | 49 |
| 21 | MS | | 29 | | | 29 |
| 23 | MBA | | 84 | | | 84 |

| | | | | | | |
|--------------|-------------------|--------------|--------------|-----------|------------|--------------|
| 24 | EMBA | | 54 | | | 54 |
| 25 | MS NURSING | | 36 | | | 36 |
| 26 | MPH | | 31 | | | 31 |
| 27 | MSPH | | 9 | | | 9 |
| 30 | MPHIL | | | 51 | | 51 |
| 31 | PhD | | | | 179 | 179 |
| Total | | 5,689 | 1,176 | 51 | 179 | 7,095 |

Chapter 13

University Governance

13.1 SYNDICATE MEETINGS

2015 (02 meetings)

63rd meeting of Syndicate held on Wednesday, the 12th August, 2015

64th meeting of Syndicate held on Wednesday, the 9th September, 2015

2016 (0 meeting)

NIL

13.2 ACADEMIC COUNCIL MEETINGS

2015 (0 meeting)

NIL

2016 (0 meeting)

NIL

13.3 BOARD OF ADVANCED STUDIES AND RESEARCH MEETINGS

I. 2015 (4 meetings)

42nd meeting of the Board of Advanced Studies and Research held on 9th February, 2015

43rd meeting of the Board of Advanced Studies and Research held on 18th May, 2015

44th meeting of the Board of Advanced Studies and Research held on 10th August, 2015

45th meeting of the Board of Advanced Studies and Research held on 23rd November, 2015

II. 2016 (5 meetings)

46th meeting of the Board of Advanced Studies and Research held on 8th February, 2016

47th meeting of the Board of Advanced Studies and Research held on 9th May, 2016

48th meeting of the Board of Advanced Studies and Research held on 12th May, 2016

49th meeting of the Board of Advanced Studies and Research held on 17th August, 2016

50th meeting of the Board of Advanced Studies and Research held on 9th November, 2016

Chapter 14

Office of Resource Generation Development

The Vice Chancellor of Dow University of Health Sciences heads the office of Resource Generation / Development. The office is responsible to organize, administrate and manage projects for University Development and control the general activities of the University. The main function of this office is to generate resources for University Development Programs and provide better health service to the community. The office is also working on National or International collaboration with Universities and industrial linkages with organizations to enhance the various activities of the University.

❖ **14.1 New Initiatives & Implementations**

Project of RIVA Drinking Water

The Dow University of Health Sciences established state-of-art Reverse Osmosis Double Pass Premium Drinking Water Plant for the provision of Safe Drinking Water by name of 'RIVA' packed in 19 liters bottles. The premium drinking water plant aim for the benefit of patients and the public, 1000 Gallons/day are produced to be sealed in 19-liter bottles. Riva drinking water is purified through 11 steps of Hydration, starting from chlorination and ending with UV sterilization. The manufacturing facilities are of international standards.

❖ **14.2 Future Plans**

A- New DUHS Projects

1. Dow Research Institute of Bio technical & Bio Medical Sciences
2. Dow Institute of Cardiology.
3. Institute of Mental Health
4. Institute of Neuro-Sciences
5. Tele Medicine Centre
6. Trauma & Emergency Centre
7. New Spacious OPD Block of DUH
8. Mother & Child Care Centre.
9. OPD block (diabetes)
10. Dental College (DHA Campus)

C- New Campus of Dow University to Be Opened At DHA City Karachi:

Pakistan Defense Housing Society shall give its 10.6 acres of land located at Super Highway, Karachi to Dow University of Health Sciences to establish a setup like Ojha Campus. The Agreement between Pakistan Defense Housing Society and Dow University of Health Sciences has been signed. The Dow University of Health Sciences will establish a Medical Complex as specified below for 500-bedded tertiary care Teaching Hospital with College of Medicine & Allied Medical Fields for Liver Transplant unit including the Housing Facilities for staff and students along with all required allied amenities.

There will be four phases of Development

- i- Phase-1 (Medical Dispensary)
- ii- Phase-2 (Medical Centre)
- iii- Phase-3 (Secondary Care Hospital)
- iv- Phase-4 (Tertiary care Hospital)

The Establishment of Hospital and Medical College will be very first Magnet project to attract public attention. This project will also prove to be catalyst for the future interventions in healthcare, education & entertainment.

D- Mehran Town Project:

The Dow University of Health Sciences plan to establish satellite clinic/filter clinic at Mehran Town, Korangi, Karachi. The land is measuring 400 sq. yard and DUHS will establish Dental Clinic as per need of the people resident at Korangi Area. The land gifted by Dr. M. Faizur Rehman Siddiqui to Dow University of Health Sciences and MoU between Dr. M. Faizur Rehman Siddiqui & Dow University of Health Sciences has been signed. This project is a significant step for providing best medical & health care facilities not only to the residents of Korangi area but also to the surrounding areas.

E- Radiological Labs

The DUHS plan to expand its Radiological labs in Sukkar City to provide its service at doorstep to the community. The labs offer a full range of diagnostic and screening services to meet the need of patients on very competitive rates.

F- DDR&RL Units

The rate of infant mortality or maternal mortality is increasing day by day. In order to reduce this rate or to safe mother and child's life, DUHS has planned to expand its Ultrasound and Obstetric Ultrasound services at different Units of Dow Lab.

H- DICE Health Event

Dow University of health sciences is one of the most renowned Medical Educational Institution of Pakistan with the aim of providing high quality research and education. DUHS in collaboration with DICE Foundation has successfully hosted "First All Pakistan DUHS-DICE Health Innovation Exhibition 2015". The aim of this event is to provide platform to intelligent and motivated students to share their innovative ideas and showcase their creativity across the

international level. The DICE Health platform has also encouraged industrial participation, without them we can't achieve our objective.

DICE Health is an annual event promoting the agenda of knowledge based economy at par with international level. The MoU has been signed between DICE Foundation and DUHS for planning of DICE Health Event Annually at DUHS.

Chapter 15

Health Centre/Medical Facilities

❖ **15.1 Medical Facilities available**

Dow University of Health Sciences has wide range of medical facilities available for its students, employees and the community. A big number of population take benefits from the medical facilities offered by DUHS and patients from other parts of the province visit its hospitals, different centers and institutes for treatment of their different health problems. These medical facilities are discussed in detail in next paragraphs.

Hospital and Health Care Facilities Established/Managed by DUHS

Dow University of Health sciences have established a number of healthcare units to serve the community. These medical units include:

- Dow University Hospital
- National Institute of Diabetes and Endocrinology
- National Institute of Live and GI Disease
- Sarwar Zuberi Liver Centre
- Centre of Bariatric Surgery
- Cochlear Implant Program
- Dow Diagnostic Research and Reference Laboratory.
- Radiological testing Services.
- Physiotherapy Unit
- Artificial Limb Centre
- Blood Transfusion Unit
- OJHA Institute of Chest Disease

The services offered by the above mentioned healthcare units are discussed in upcoming pages.

1. Dow University Hospital

Dow University Hospital is a tertiary care teaching University Hospital attached to Dow International Medical College (DIMC). This hospital also serves as a teaching unit for Institute of Nursing & Clinical Pharmacology rotation for students of Dow College of Pharmacy, housed adjacent to Dow University Hospital at Ojha campus of Dow University.

The detail of Medical facilities available at Dow University Hospital has already been discussed in Chapter- 9

2. National Institute Of Diabetes & Endocrinology (NIDE)

Diabetes is a growing problem of Pakistan; hence the National Institute of Diabetes & Endocrinology was established in 2006. It provides free consultation and counseling to patients suffering from diabetes and other endocrine diseases. It also has facilities for management and treatment of eye complications of diabetes through its Eye Care Center including laser treatment.

More than 15,000 patients have been registered up till now at NIDE. Public awareness programs are also regularly conducted at NIDE.

3. National Institute of Liver and GI Diseases (NILGID) & Sarwar Zuberi Liver Centre:

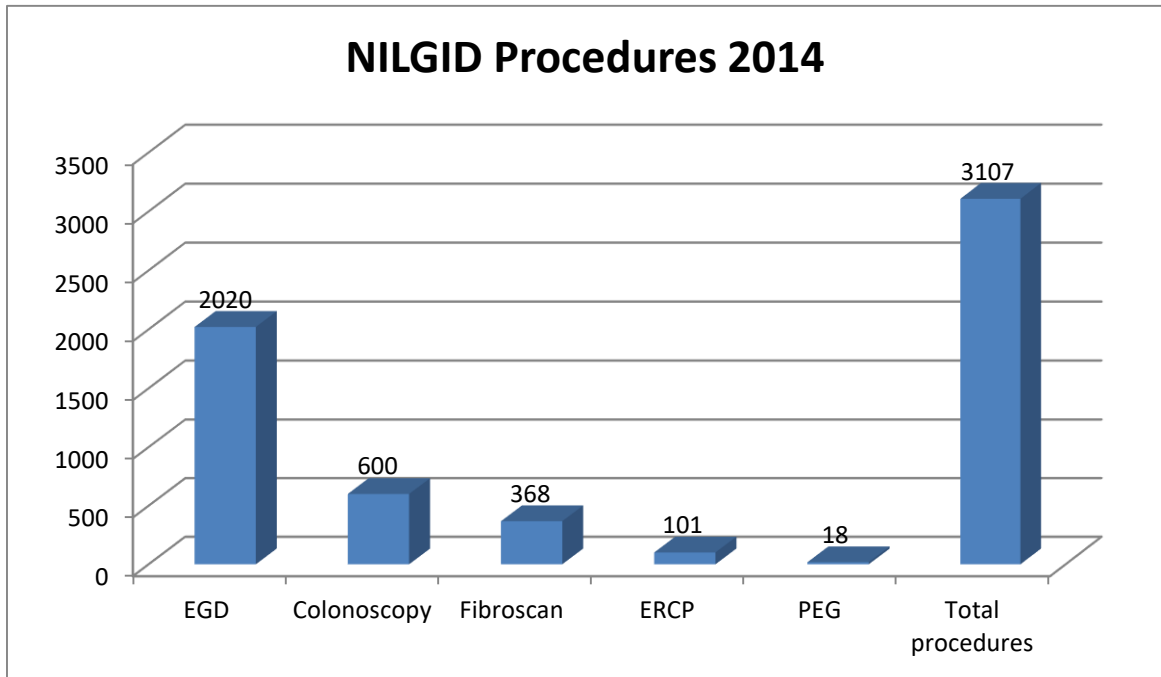
The National Institute of Liver & GI Diseases (NILGID) is an Institute catering patients in the field of Liver & Gastrointestinal diseases. It's another campus at DMC-CHK in 2012, was renamed as National Institute of Liver & GI Diseases, DMC campus from Sarwar Zuberi Liver Center housed at Medical Unit V of Civil Hospital Karachi.

- **ENDOSCOPY SUITE**

The Endoscopy section provides facility of advance endoscopic procedures. The following graph depicts the endoscopy services offered by NILGID during 2013-2014.

- **Endoscopy & Fibro scan volumes:**

| | 2013 | 2014 |
|--|-------------|-------------|
| Endoscopy Procedures including interventions | 2282 | 3138 |
| Fibroscan | 109 | 368 |



- **OPD of NILGID**

NILGID has been recognized as one of the institute, which has made change in medical services at very affordable rate. Apart from that, NILGID is collaborating with MSF, Infaq foundation, Sina foundation & Al-Rehman trust for treatment of patients and these organization help NILGID for patient support.

NILGID faculty has one of the busiest Outpatient departments at DUHS. Every faculty member performs 5 OPDs per week. Out these five, 4 are conducted at DUHS, Ojha campus while every faculty member has to do one per week SZLC OPD.

Salient feature and census of the last year OPDs is given below:

General OPD:

1. Every consultant has to perform at least 2 General OPDs per week. The timing of these OPDs is from 8:30 am until 13:00 hrs.
2. Every consultant has to cater up to a maximum number of 30 patients.
3. **11,000 patients were treated at General OPD** by NILGID faculty.

Executive OPD:

1. Like General OPD every consultant Gastroenterologist at NILGID performs two Executive OPDs per week.

2. It is an ideal facility for NILGID patients arriving from far reach and remote areas. Since they can go back to their home town on same day.
3. It also provides a substitute for the General OPD patients if they miss the appointment for some reason.
4. Executive OPD turnover was 7000 patients at NILGID.

4. SARWAR ZUBERI LIVER CENTRE (SZLC)

The Sarwar Zuberi Liver Centre was established by Dow University eight years back in May 2004 to focus on individual patients as per requirement. Many facilities are offered to the patients at SZLC, which aims at diagnosis and treatment at minimum cost or with Zakat if applicable.

This Centre was named to honour legend of Hepatitis, Dr. Sarwar Jahan Zuberi, who met untimely death just few days before the inauguration of this liver center in 2004.

The treatment of chronic liver diseases is provided either by Zakat, Adopt a Patient Scheme or at 30% of the market cost, depending upon the affordability of the Patient.

Endoscopies and Liver biopsies are also performed. The data is computerized and several research papers have also been presented or published.

More than 80,000 patients have been registered at SZLC of Dow University of Health Sciences until now.

SZLC clinic:

1. SZLC clinic is an old tradition or roots of NILGID. Every consultant rotates on weekly basis at SZLC where a total of around 20 patients are seen by RMO along with consultant physician.

NILGID OPD has catered over 25000 patients in last year. It has already gained a respectful position among patients visiting long distances not only from different parts of country.

5. Centre of Bariatric Surgery

Obesity and overweight is a huge problem of present era not only in Pakistan but world over. This is because of sedentary life style. Most of the chronic illnesses e.g. Diabetes, high blood pressure, Cardiac problems and stroke etc. are directly related to obesity. More than 50% of obese people are unable to reduce weight by diet and exercise despite efforts.

Bariatric surgery is emerging as best current treatment for morbid obesity and has proven to be the most effective long-term management for sustained weight loss. It is a process in which bigger loose part of stomach is stapled with specialized ways leaving out less space, enough to fulfill the food requirement of the individual. The specialized process is not only very expensive in private set up but also lacks expertise.

Dow University of Health Sciences offers comprehensive solution for surgical weight loss and focused on long-term success. The Centre of Bariatric Surgery of Dow University of Health Sciences started in October 2012. This center at DUHS performs surgery by experts only at the cost of required staples, hence very economical and effective.

Types of surgery performed at the Centre

There are three types of surgical procedures for obesity, which are all laparoscopic.

1. Roux-en-Y gastric bypass,
2. Sleeve gastrotomy, and
3. Adjustable gastric banding.

6. COCHLEAR IMPLANT PROGRAM

Pakistan is a developing country having prevalence of certain indigenous health issues since its inception. Hearing impairment is one of the major issue pounding unnecessary burdens on the society. According to a survey, about 15% of the population is suffering from hearing impairment, majority of them are due to preventable causes. Share amount of people suffered from Sensor neural Hearing Loss (SNHL) due to congenital reasons and if it is not detected & rehabilitated early, it can leads to deaf mutes.

Cases of congenital SNHL are increasing day by day due to variety of socio-cultural reasons in our region. In vast majority of these cases, conventional rehab measures with the use of hearing aids and/or speech therapy are not much beneficial. Cochlear implant is relatively newer technique that can cater the needs of majority of such cases if they meet the criteria of cochlear implant candidacy. The major concerned in its applicability all over the globe, is the cost of implant, pre-implant assessment and post implant rehabilitation.

The cost incurred in private sector in Pakistan is very high (25000 USD) which cannot be afforded by many parents especially from lower and middle class.

Considering the gravity of the situation, Dow University of Health Sciences, launched its Cochlear implant program with the aim of implanting the needy & suitable candidates of the families who cannot afford the cost. We also endeavor to setup fully equipped audio-vestibular institute for pre-implant assessment and post -implant rehabilitation. Estimated cost of implant and other expenses is 15000 USD. Initial funding of Rupees 10 million was pooled by DUHS. We approached and requested philanthropists and NGO's for donations and zakat funds to contribute in the pool for running the program successfully in future.

Up till now 13 cases had been implanted free of charge after selection by standard international criteria of cochlear implant candidacy. The implantation was done in December 2012 (Two cases), July 2013 (Two cases) and November 2014 (09 cases).

More than 350 registered candidates waiting for the implant and in last week of February 2015 the Dow University of Health Sciences is conducting the fourth round of cochlear implant surgeries in which fourteen patients will be operated from funding by the university philanthropist & partial-sharing by few patients.

7. Dow Diagnostic Research and Reference Laboratory (DDRRL)

The Dow Clinical & Research Laboratory has been established to provide reliable, high quality diagnostic services of International Standards for routine and specialized tests at, extremely economical rates (approx. at 30% as compared to private ones) for all socioeconomic segments of population (Annex- B comparative statement of diagnostic services provided by DDRL and competitors)

It's the fastest growing lab of Pakistan. Monthly about 25,000 tests are performed and until now more than one million tests have been performed. Internal Quality Assurance is guaranteed by daily controls. Provision of online electronic reporting & Image transfer facilities exist. Besides the main lab, presently there are five collection centers of Dow Lab, near Civil Hospital, Jinnah Hospital, Malir, Nazimabad and Federal B Area, to provide easy accessibility to the clients for diagnostic laboratory services.

8. Radiological Testing Services

The Dow Radiology Complex was established in 2008 and since its inception it is providing economical radiological testing services to patients. It offers a full range of diagnostic and screening services to meet the needs of patients on very competitive rates around 1/3rd to 1/4th as compared to other centers in the city.

- It also offers a filmless digital environment for image viewing, reporting, as well as storage with the Picture Archiving and Communication System (PACS).

The services offered by the Institute include provision of all modern diagnostic facilities e.g.

- X-rays
- Ultrasound (09 Nine Machines)
- Fluoroscopy
- Dexa Scan
- Echocardiography
- Mammography
- CT Scan (03 Three Machines)
- MRI (03 Three Machines including one open MRI for Claustrophobic patients).
- 2 MRI Machines (including 1.5 Tesla) and 2 CT Machines, which are functioning 24 hrs

Considering the growing demands of patient a City Campus on Stadium Road has been established near TV Station. named as 'Dow LEJ Campus' and it provides facilities of CT & MRI, 24 hrs.

The two Dow Lab Collection Centers at Nazimabad & F.B. Area have also the ultrasound facility performed by experienced sonologists.

9. Physiotherapy Department

Dow University of Health Sciences also offers physiotherapy services to outpatients through the attached department of the School of Physical Therapy at Institute of Physical Medicine & Rehabilitation (IPM&R). This department provides comprehensive rehabilitation services, i.e. cardiac, neurological musculoskeletal and pediatric rehabilitation, currently providing physiotherapy services to more than 55 patients per day. Since its establishment 14000 patients have been provided with physiotherapy services.

10. Artificial Limb Centre

The Department of Prosthetics & Orthotics is serving the community by providing high quality prosthetics & orthotics appliances. During the year 2014, approx. 1580 patients benefited from the services of this department. Other than serving patients arriving at the center, this center is also facilitating other medical institutions for artificial limbs and appliances. Some of these services include facilitation offered to Jinnah Post Graduate Medical Centre for the Department of Orthopedics Club Foot Clinic by providing 300 Dennis brown splints for their congenital talipesequi-varus patients and providing Deniss Brown Splints for CTEV Patient (Clubfoot clinic).

11. Blood Transfusion Services Program

Safe blood is a crucial and irreplaceable component in the medical management of many diseases. In Karachi, because of the massive influx of patients from interior Sindh and other rural countryside, the demand of safe blood for transfusion could not be met with only replacement donors. Blood shortage in Pakistan is documented to be about 40% and this problem is further accelerated by inappropriate use of blood and its products.

Dow University of Health Sciences has taken the initiative towards provision of safe blood products to the needy patients. The overall project objective is to contribute to lowering hemorrhage mortality and to reduce the risk of transfusion transmitted infectious diseases and provision of safe and efficacious blood and blood products. The Voluntary non-remunerated blood donation (VNRBD) is the ideal source of quality blood, which forms less than 15 % of the demand of the blood in Pakistan. Under this initiative, Safe Blood Transfusion Services have been initiated with the strong pillars of voluntary blood donation with considerable community outreach, training of human resource in blood banking and transfusion medicine as per the recent scientific techniques and under the WHO recommended Quality Management principles, developing service delivery in blood banking and transfusion laboratory sciences with continuous education and research in transfusion medicine.

DUHS blood donation services are extremely active under Donor Management Department of the Centre and disseminating the message of Voluntary blood Donation to the population at large. The purpose is:

1. Creation of a culture of voluntary blood donation through communication and education.
2. Build a stable blood donor pool by motivating and recruiting new donors from low-risk populations, and encouraging existing or lapsed donors to become regular donors and to recognize the contribution to society made by blood donors.
3. Provide quality donor care, so that blood donation is not onerous
4. Provide quality assured blood products to all the needy patients
5. And create a sustainable foundation of advanced WHO recommended blood banking in Pakistan.

12. Ojha Institute of Chest Diseases (OICD) & Chest Disease Clinics

OICD was established in the early forties, as a TB sanatorium and now recognized as a center of excellence for Tuberculosis by the World Health Organization (WHO). The services provided here are free of cost and normally such type of ICU services costs around Rs. 20,000 - Rs. 50,000 / day in private hospitals.

The facilities provided to patients include high quality diet, recreation environment with TV, cable etc. and vocational training and support in the form of training for candle making and stitching etc. The Dow University takes the responsibility to sell their products for them.

Four out-patient clinics of OICD in the periphery of the city are also functioning, these are chest clinics of Iqbal Yad, Nazimabad, Lyari and Malir, Each clinic has a well-organized DOT (Directly Observed Treatment), where these patients with TB are provided medicines and health education. Daily about 600 patients visit these TB clinics for DOTS treatment and follow up.

TB HOSPITAL of 250 beds provides all possible facilities to indoor and outdoor patients for diagnosis and treatment of tuberculosis.

MULTI DRUG RESISTANT (MDR) TB is a great problem. In Pakistan about 15,000-20,000 tuberculosis patients presently suffering from Multi-Drug Resistant (MDR TB), each patient requires approx 500,000 Rs. for management including costly medicines and other logistics but at OICD their treatment is free.

❖ 15.2 Counseling for Stress Reduction

• For Students:

Dow University of Health Sciences, Karachi, has taken the initiative to council the University students for their stress reduction by facilitating or providing financial assistance through various Institutions/Organizations. There are various organizations which are not in connection with the University, in such organizations University still facilitates students as a forwarding authority like others. Currently University signed MOU with various philanthropists,

to facilitate students as well as channelize system. Meanwhile, University forwarded applications to the following Institutions with respective assistance/facility;

| S # | INSTITUTION/ORGANIZATION | TYPE OF ASSISTANCE |
|-----|--|----------------------|
| 1 | Ihsan Trust | Qarz-E-Hasna |
| 2 | Professional Education Foundation | Qarz-E-Hasna / Zakat |
| 3 | Abdullah T Mohammed Wehwaria&FarhatAleem Scholarship | Scholarship |
| 4 | University Of Karachi Alumni Association | Scholarship |
| 5 | Endowment Fund Scholarship | Scholarship |
| 6 | Fauji Foundation | Stipend |
| 7 | Staff Welfare Organization | Stipend |
| 8 | Federal Employees Benevolent and Group Insurance Funds | Stipend |
| 9 | NBP Student Loan Scheme | Loan |

Dow University of Health Sciences, Karachi, establish University Advancement Cell and Financial Aid Office for the financial facilitation/assistance to the students. The University is engaged in the process of increasing the number of funding organization / philanthropist and sign MOU with them. The University future planning is to enhance duration of refunding amount of scholarship and develop a new fee structure with emphasis on minimizing the burden of scholarship awardee, to increase promotional activities through workshops, seminars, social media etc. and to arrange Symposium of different funding agencies with students, so that they may explain their program to students directly.

- **For DUHS Employees**

- **Health Insurance Scheme for DUHS employees**

Financial responsibilities are considered as the main source of stress. To reduce the financial burden of its employees; DUHS provides medical insurance coverage to its all employees appointed on Regular basis and to /Contractual basis with at least one year service. The insurance coverage is currently provided by Asia Care Health & Life Insurance Co. ltd. The details of this health insurance scheme are discussed here as under:

The Employees & their dependents covered are divided in the following categories:-

BENEFIT STRUCTURES:-

| Sr. # | Benefits / Coverage | <u>Categories and Annual Entitlements in Rs.</u> | | | |
|-------|--|---|----------------------------------|------------------------------|-----------------------------|
| | | Plan -A B-21 & 22 | Plan -B B-19 & 20 | Plan-C B-16 to 18 | Plan-D B-1 to 15 |
| 1 | Hospitalization Coverage per Insured per Annum | 650,000 | 500,000 | 350,000 | 250,000 |
| 2 | Daily Room / Bed limit per Insured | Deluxe Room | Private Room | Semi Private Room | General Ward / Room |
| 3 | Maternity Limits for Normal Delivery / Forceps | 50,000 | 30,000 | 25,000 | 20,000 |
| 4 | Maternity Limits for C-Section / Multiple Births | 80,000 | 45,000 | 40,000 | 30,000 |
| 5 | Out-Patient Reimbursement per Family per Annum | 35,000 | 20,000 | 15,000 | 12,000 |

BREAK UP OF LIVES COVERED:-

| STRENGTH | PLAN A | PLAN B | PLAN C | PLAN D | TOTAL |
|-----------------|---------------|---------------|---------------|---------------|--------------|
| EMPLOYEES | 80 | 380 | 746 | 1160 | 2366 |
| SPOUSES | 38 | 299 | 517 | 825 | 1679 |
| CHILDREN | 77 | 661 | 845 | 1986 | 3569 |
| PARENTS | 32 | 392 | 1034 | 1348 | 2806 |
| TOTAL | 227 | 1732 | 3142 | 5319 | 10420 |

BENEFITS COVERED UNDER HOSPITALIZATION / IPD

1. Daily Room & Board Charges.
2. Miscellaneous Hospital Services and Supplies. Drugs, Dressings, Prescribed Medicines, Laboratory Examinations, Physiotherapy, intravenous injections & solutions, administration of blood and blood plasma including cost and any other fluids administered during surgery.
3. Emergency Room treatment for Accidental and Non-Accidental emergencies.
4. Doctor's visits. (Consultant, Specialist, etc.)
5. Surgical Operation Charges.
6. Local Ambulance Charges.
7. Pre-Post Hospitalization cover including Diagnostic Tests, Consultation Charges & prescribed Medicines within 30 days prior to or after Hospitalization.
8. ICU and Operation Theatre Charges.
9. Specialized Investigations & Day Care Surgeries. Dialysis, MRI, CT Scan, Thallium Scan, Angiography, `Cataract, Endoscopy, Echo, Treatment for Fractures, Lacerated wounds, Emergency Dental Treatment due to accidental injuries, Day Care surgical Charges including medicines and investigations.
10. Psychiatric Treatments.
11. Congenital Birth Defects.
12. Interferoherapy of Hepatitis 'B' and 'C'.
13. Maternity related complications.
14. Radiotherapy and Chemotherapy.

BENEFITS COVERED UNDER MATERNITY:-

1. Daily Room & Board Charges / Labor Rom Charges.
2. Ante-Natal Care such as Ultrasound scans, Lab Tests and examinations.
3. Hospital Charges & Obstetricians Fee for Childbirth.
4. Midwife Charges if delivery takes place at home.
5. Operation Theatre /Physician's /Surgeon's Charges.
6. Prescribed Medical Supplies & Services during Hospitalization.
7. Anesthesia Charges.
8. Blood Transfusion including Cost of Blood.
9. ICU Charges.
10. Baby Nursing Care while the Mother is confined to the Hospital.
11. Circumcision Charges of Newborn Baby Boys.
12. Post- natal Care immediately following childbirth such as Stitches, Follow up Visits & Prescribed Medicines.
13. Secondary Conditions brought about by Pregnancy such as Backache, High BP, Vaginal Bleeding, Nausea & Vomiting etc requiring Hospitalization.
14. In the event of D&C, Normal delivery benefits as mentioned in Benefits Schedule.

BENEFITS COVERED UNDER OPD:-

1. Physician / Consultant's fees for consultations.
2. Psychiatrists and Psychologist's Fee for Psychiatric Treatment.
3. Prescribed Drugs and Dressings.
4. Pathology, Radiology and Diagnostic Tests, X-rays & Ultrasounds.
5. Vaccinations.
6. Out-Patient Surgical Operations.
7. Wellness Mammogram, PAP Smear, Prostate Cancer Screening or Colon Cancer Screening.
8. Dental Treatment including Extractions Teeth, Root Canaling or Caping or Similar Treatment.
9. Accident Related Dental Treatment.
10. Costs for Treatment by Therapists and Complementary Medicine Practitioners.
11. Declared / Undeclared Pre-Existing Conditions.
12. Coverage / Treatment from any Hospital / Clinic of the Patient's Choice.

- **For TB Patients:**

It is very difficult for TB patients to do their normal jobs because of their health condition and the precautionary measures to safe other people from getting the disease. Since the treatment of Tuberculosis requires a longer period of time, so such patients who have financial responsibilities of their family, may undergo financial and mental stress. To resolve this problem some vocational training programs have specially been designed and introduced to engage regular TB patients, while undergoing treatment for at least 9 months, so as to engage them mentally and simultaneously help them to earn daily-living.