

DASMAN DIABETES INSTITUTE

Annual Report **2016**



حضرة صاحب السمو الشيخ صباح الأحمد الجابر الصباح
أمير الكويت

His Highness Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah
Amir of the State of Kuwait



سمو الشيخ نواف الأحمد الجابر الصباح
ولي عهد دولة الكويت

His Highness Sheikh Nawaf Al-Ahmad Al-Jaber Al-Sabah
Crown Prince of the State of Kuwait

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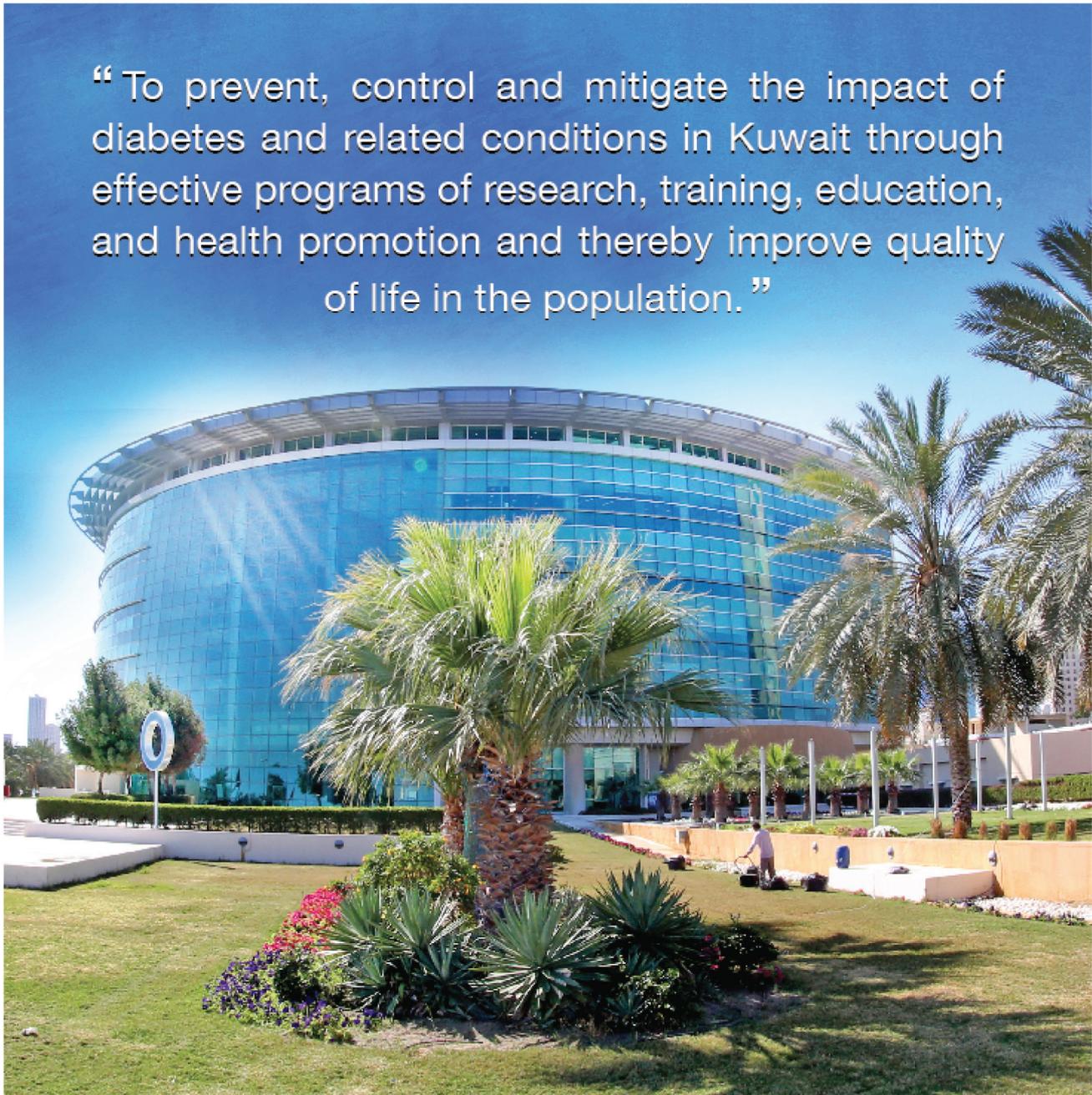


معهد دسمان للسكري
Dasman Diabetes Institute

أنشأته مؤسسة الكويت للتقدم العلمي
Founded by Kuwait Foundation for the Advancement of Sciences

MISSION STATEMENT

“To prevent, control and mitigate the impact of diabetes and related conditions in Kuwait through effective programs of research, training, education, and health promotion and thereby improve quality of life in the population.”



DIRECTOR-GENERAL DIRECTORATES: PUBLIC RELATIONS AND MEDIA SERVICES

1.1 OVERVIEW

The Public Relations and Media Services Department is utilized and available for all the different departments in Dasman Diabetes Institute (DDI). The PR and Media team are responsible for all above-the-line and below-the-line marketing material developed and disseminated to the public. The Department continuously promotes & organizes all the ongoing activities and events DDI is involved in, as well as reinforces the Institute's ongoing accomplishments. This is achieved via various media outlets such as print advertising, broadcasting stations, and social media channels which include Instagram, YouTube, Facebook, and Twitter. The PR and Media team is responsible for creating all the Institute's design material, from forming the layout to the final printed product. All processes and procedures are completed in a professional manner, ensuring that DDI maintains its proficient and high standard.

1.2 ACTIVITIES

- In collaboration with Kuwait Healthy Living Initiative at DDI, LOYAC held its 8th Annual Blood Donation campaign — 'Ride to Save' in January 2016 at the Institute. The blood drive was sponsored by Al Ahli Bank of Kuwait and supported by DDI and the Central Blood Bank.
- DDI and University of Dundee hosted the second graduation at DDI in January 2016. The revelation came at a graduation ceremony of 41 Diploma and Master's degrees students along with 17 students of vocational courses in the field of diabetes, in conjunction with the Scottish University of Dundee.
- In February 2016, DDI was awarded Platinum Level with Conditions for the second completed Accreditation Canada International cycle. In April 2016, DDI hosted an event to celebrate their success with the Canadian Ambassador and esteemed colleagues and guests.



- On the occasion of World Health Day in April 2016, DDI, in cooperation with Zain Telecommunications, launched the DDI/Zain Diabetes Mobile Clinic that will be traveling throughout the country to offer free glucose checks for the public and help promote diabetes awareness. On the same occasion, the new DDI website was revamped and launched.



- In April 2016, DDI held a School Healthy Canteen Art Program, sponsored by Gulf Bank and organized in collaboration with the Ministry of Education and Ministry of Health (School Health Department) in 360 Mall, where government schools participated and competed to create their own version of a healthy canteen to encourage a healthy and creative culture in high schools through a friendly competition. Eleven public schools from the Hawalli School District participated in this competition with each school teams aged between 5 and 18.

- In May 2016, DDI received the International Quality Summit in the Platinum Category Award at the International Quality Summit in New York. The Institute was recognized for its commitment to quality, leadership, technology, and innovation in the pursuit of excellence.



- DDI held an end-of-year ceremony to celebrate the successful completion of the "Let's Stay Healthy Today, Kuwait" program in May 2016. The program, funded by the State Department's Middle Eastern Partnership Initiative (MEPI) grant, aimed to host high schools from various governorates across Kuwait to attend a range of workshops with the goal of promoting healthy living. Nineteen schools were hosted, both public and private, from all six governorates of Kuwait, reaching around 400 students in total.

- DDI hosted the Annual Girgia'an event, sponsored by Asnan Kids, for children with Type 1 diabetes. The event took place in June 2016, where DDI, Kidzania, Fantasy World, Saveco and Asnan set up booths around the premise.



LIST OF EVENTS AT DDI:

1	DDI & LOYAC Second Annual Blood Donation Drive 'Ride to Save'	23 rd January, 2016	In collaboration with Kuwait Healthy Living Initiative at Dasman Diabetes Institute, LOYAC held its 8 th annual Blood Donation campaign – 'Ride to Save'
2	Two-Day Workshop Titled "Knowledge Exchange & Advanced CGM"	26 th & 27 th January, 2016	The workshop was targeted towards Healthcare Professionals with experience in Insulin Pump Therapy and Continuous Glucose Monitoring. The workshop covered the essential topic of Insulin Pump Clinics: Patient Selection, Attrition, Motivation and Consultation; particularly the transition from pediatric to adult clinics.
3	University of Dundee Graduation Ceremony 2016	1 st February, 2016	The University of Dundee held its third graduation ceremony at Dasman Diabetes Institute. The revelation came at a graduation ceremony of 41 Diploma and Master's degrees students along with 17 students of vocational courses in the field of diabetes, in conjunction with the Scottish University of Dundee. More than 260 students have thus far enrolled in these courses, contributing to more than 1000 projects designed to boost treatment of diabetes.
4	Dr. Kazem Behbehani Friends & Family Farewell Celebration	8 th February, 2016	DDI honoured and celebrated the accomplishments of its previous Director-General, Dr. Kazem Behbehani, at the Institute with many of his family members and close friends.

5	Dr. Kazem Behbehani Staff Farewell Celebration	11 th February, 2016	DDI honored and celebrated the accomplishments of its previous Director-General, Dr. Kazem Behbehani, at the Institute with the entire Dasman family.
6	DDI co-organizes with the Ministry of Health and Participates in the Diabetic Foot Conference	4 th March, 2016	Took place in Radisson Blu Hotel with participations from many different governmental institutions, including hospitals and primary care clinics.
7	DDI Presents Lectures and Seminars at the Basics of Endocrine Disorders and Diabetes Conference	7 th March, 2016	Organized and Held in collaboration with Kuwait Foundation for the Advancement of Sciences and Kuwait Medical Association at the Movenpick.
8	Inaugural FOPH Seminar on the Future of Public Health in Kuwait and Beyond	12 th March, 2016	Co-organized and took place at the Faculty of Public Health – Kuwait University.
9	DDI Co-organizes and Participates in the First Gulf Conference for Geriatric Care	13 th March, 2016	DDI set up a booth where educational material and representatives from the Institute attended Jumeirah Hotel, in collaboration with MoH.
10	Sustainable Community Gardening and Healthy Eating Among Children – Project	15 th March, 2016	Conducted by Kuwait Healthy Living initiative at DDI, in collaboration with the Ministry of Education and sponsored by Agility Company.
11	DDI Partakes in the 4 th Annual Chemistry Conference	20 th March, 2016	In collaboration with Kuwait University.
12	Workplace Survival Workshop	24 th March, 2016	For all DDI staff, presented by visiting instructor; Dr. Timothy Simansky, Chiropratic Specialist and Certified Trainer.
13	Social Impact Measurement – Workshop	28 th & 29 th March, 2016	Co-organized with Kuwait Foundation for the Advancement of Sciences, and took place at DDI.

14	World Health Day 2016 “Beat Diabetes”	7 th April, 2016	DDI celebrated World Health Day, by launching a mobile clinic in cooperation with Zain in the presence of the Institute’s Director General, Dr. Qais Al-Duwairi, Chairman of Institute Regents, Dr. Hilal Al-Sayer, Director General of Kuwait Institute of Medical Specialties, Dr. Ibrahim Hadi and Zain Kuwait’s CEO Eaman Al-Roudhan. This event was focused on fighting the chronic disease of diabetes under the slogan ‘Beat Diabetes’.
15	IDF President, Dr. Shaukat Sadikot, visits DDI	7 th April, 2016	Dr. Shaukat Sadikot, President of the International Diabetes Federation (IDF), visited Dasman Diabetes Institute (DDI) to discuss mutual collaboration efforts and attend meetings with the stakeholders of the healthcare system. Dr. Sadikot was also interviewed by Kuwait Television.
16	DDI’s School Healthy Canteen Art Program	20 th – 22 nd April, 2016	DDI held a School Healthy Canteen Art Program, sponsored by Gulf Bank and organized in collaboration with the Ministry of Education and Ministry of Health, School Health Department.
17	Accreditation Canada Platinum Ceremony	25 th April, 2016	Dasman Diabetes Institute (DDI) celebrated its second award of accreditation by Accreditation Canada International (ACI): Platinum Level.
18	DDI hosts the MEPI End-of-Year Ceremony	18 th May, 2016	DDI, held an end-of-year ceremony in the presence of Dr. Qais Saleh Al-Duwairi, Director-General of DDI, and George Sarmiento, Deputy Economic Counselor and First Secretary of the US Embassy to celebrate the successful completion of the “Let’s Stay Healthy Today, Kuwait” program.

19	Communication Skills Workshop	23 rd – 26 th May, 2016	Conducted and delivered by Baker Tilly International for DDI staff.
20	Masters/Diploma/PG Certificate in Diabetes Care, Management and Education	28 th May – 1 st June, 2016	University of Dundee Face-to-Face Teaching Sessions.
21	Diabetes and Ramadan Conference	30 th May, 2016	Co-organized with the International Diabetes Federation (IDF).
22	DDI Receives Award at International Quality Summit	30 th May, 2016	Dr. Qais Saleh Al Duwairi, Director-General of Dasman Diabetes Institute, attended the International Quality Summit, organized by Business Initiative Directions (BID) One Group, in New York, to receive DDI's International Quality Summit in the Platinum Category Award.
23	DDI 10 Year Anniversary	6 th June, 2016	DDI celebrated its 10 th Anniversary.
24	Annual Girgia'an Event at DDI	23 rd June, 2016	DDI hosted the annual Girgia'an event, sponsored by Asnan Kids, for children with Type 1 diabetes.
25	Students Internship and Posters Day at DDI	June – August, 2016	University students of different medical and scientific fields of study from various local and international universities participated.
26	LOYAC Summer Vocational Internship Program	July – August, 2016	Many trainees from LOYAC completed two-months vocational training at DDI.
27	Teen Dasmania Group Exercise Program	August, 2016	Interactive group classes for teens at the Medical Fitness Center at DDI.
28	DDI Represents Kuwait at the EASD International Conference	12 th – 16 th September, 2016	Took place in Munich, Germany with international participations.

29	DDI Represents Kuwait at the Diabetes Leadership Forum	26 th – 27 th September, 2016	Attended by the Director-General of DDI and other diabetes consultants from the Institute in Qatar.
30	Masters/Diploma/PG Certificate in Diabetes Care, Management and Education	1 st – 5 th October, 2016	University of Dundee face-to-face teaching sessions.
31	DDI Organized an Open Health Day at Ooredoo Telecommunications	20 th October, 2016	To promote awareness and health/medical checkup for all the staff of Ooredoo, in the headquarters.
32	Breast Cancer Awareness Lecture	30 th October, 2016	By Kuwait Cancer Center at DDI.
33	Annual Kids' Health Festival	1 st – 3 rd November, 2016	At International Fair Grounds – DDI participated along with other organizations.
34	Ahmadi Governorate First Health Forum	11 th November, 2016	Under the patronage of the Governor of Ahmadi. Took place in Kuwait Magic Mall. DDI's mobile clinic was used where more than 300 visitors got their blood sugar tested, benefited from the podiatry consultations and checkups and received health awareness information and materials.
35	10 th Annual World Diabetes Day	17 th November, 2016	The event allowed visitors to consult with diabetes specialists and dietitians, as well as gather healthy information from booths that explained various facts of diabetes and promoted healthy lifestyle modification. Around 1000 guests attended the event, underlining the interest in Kuwait to prevent and manage this dangerous lifestyle disease.
36	DDI Participates in the Health Awareness Day at Direct Investment Authority – Hamra Tower	22 nd November, 2016	As part of the World Diabetes Day activities.

37	DDI Represents Kuwait at the European Association for the Study of Diabetes Conference – Dubai	25 th November, 2016	A team of doctors and scientists from DDI presented lectures and posters.
38	DDI and Kuwait Petroleum Corporation Holds an Open Health Day	28 th November, 2016	As part of the World Diabetes Day activities, to promote awareness and offer medical consultations and checkups.
39	DDI Represents Kuwait at the GCC and European Commission Collaboration - Belgium	29 th November, 2016	Dr. Qais Al-Duwairi, Director-General of DDI, attended the conference and meetings in Belgium.
40	Italian-Kuwait Health Week Conference at DDI	4 th December, 2016	A joint-seminar between Italian health consultants and DDI's healthcare professionals at DDI to exchange and promote latest knowledge and practices about diabetes and the healthy Mediterranean diet.
41	DDI Represents Kuwait at the 9th World Congress on Prevention of Diabetes and its Complications – USA	2 nd – 4 th December, 2016	Dr. Qais Al-Duwairi, Director-General of DDI, scientists and doctors from the Institute presented lectures and discussed the Institute's progress and experience.
42	Obesity-Related Type 2 Diabetes in Children: Novel Intervention Strategies Based on in Vivo and in Vitro Work – Research Seminar	12 th December, 2016	By Prof. Peter Bergsten, Department of Medical Cell Biology, Uppsala University, Sweden.
43	What You Need to Know About Writing Research Seminars? – Research Seminar	13 th December, 2016	By Dr. Tom Lang. Attended by the Research Department staff members and others.
44	Ultrasound and Microbubbles in Cancer Therapy – Lecture	20 th December, 2016	By Dr. Raffi Karshafian, Associate Professor in the Department of Physics at Ryerson University, and an Associate Scientist at the Institute for Biomedical Engineering. Lecture was attended by DDI medical and scientific teams.

45	DDI takes part in Kuwait Foundation for the Advancement of Sciences Annual Prizes Ceremony	21 st December, 2016	In attendance of H.H. the Amir of Kuwait, DDI took part to showcase the Institute's achievements and progress.
46	Guidelines for the Prevention of Exposure to Blood Borne Pathogens Among Healthcare Workers – Lecture	22 nd December, 2016	Presented by Dr. Mona Salama, Infection Control Specialist, to all DDI staff as part of the Accreditation Canada requirements.

DIRECTOR-GENERAL DIRECTORATES: HEALTHCARE PLANNING & DEVELOPMENT DIRECTORATE

Integrated Quality Management Unit Activities:

2.1 MAINTAINING ACCREDITATION CANADA INTERNATIONAL (ACI) ACCREDITATION IN CYCLE 3

The Institutes's 3rd (3 year) accreditation cycle began in 2016. DDI was awarded Platinum Level for the second completed ACI cycle in November 2015 until the year 2018.

a. ACI Achievement

As the Platinum level award is living proof of DDI's sincere dedication, teamwork and professionalism, an ACI ceremony was held on April 24, 2016. The ceremony was given in the presence of Canadian Ambassador to Kuwait, H.E. Martine Moreau; Chairman and Former Minister of Health, Professor Hilal Al Sayer, and Director-General of DDI, Dr. Qais Al Duwairi, to recognize the diligence provided by DDI on this achievement.



b. Education Sessions

October 9-13, 2016, education sessions were conducted for select staff by ACI regarding the following topics: Advancing



Quality through Measurement, Enhancing Quality Health Services: Patient Safety & the ROPs and Exploring Tracer Methodology.



On October 31, 2016 all DDI staff was invited to attend an interactive session on the AHRQ survey results from the 2nd cycle.

A training allowing for certification in the Healthcare Accreditation Professional Program was conducted by ACI for DDI staff from November 13-17, 2016.



c. 2nd Cycle ACI eBook

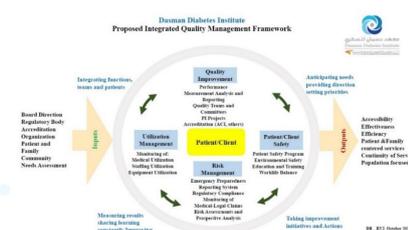
In October 2016, information regarding the second completed cycle was collected to begin the initial process for an ACI 2nd cycle journey electronic book which will be provided to all staff.

d. Committee Preparation

Upon ACI surveyor/trainer recommendations, committees should be established to help oversee standards and/or work groups. Terms of Reference were created for two provisional committees: Medical Care and Effective Organization.

2.2 QUALITY IMPROVEMENT FRAMEWORK

The Department introduced an integrated quality management framework for the Institute, subjective to final approval. All framework feedback was welcomed and received from various departments, in addition to ACI surveyors.



2.3. SAFETY

a. Dasman Incident Reporting System

The Department at DDI received 45 incidents reports from the various departments, units and facilities at the Institute. Each report was investigated independently and results were communicated accordingly.

The analysis revealed five (5) major root causes, common across the different reports:

- Human Errors.
- Non-adherence to operational policy and procedures.
- Inadequate design or absence of clear, approved guidelines concerning healthcare facility planning, design and renovations.
- Inadequate or absence of clear service level agreements with vendors (e.g. KBHR).
- Insufficient equipment/technology management programs (e.g. equipment frequent failure).

b. Participation of Kuwait Fire Department's (KFD) DDI Inspection

The Department participated in rounds conducted by the KFD in collaboration with General Services Department to inspect the entire building. The participants were separated into three groups and each group inspected every floor. Areas of inspection included:

- Inspection of the storage areas and fire extinguishers.
- Review of the layout of the building and the exit doors throughout the building.
- Testing all the fire alarms, sprinklers, smoke detectors and stairs within the building.

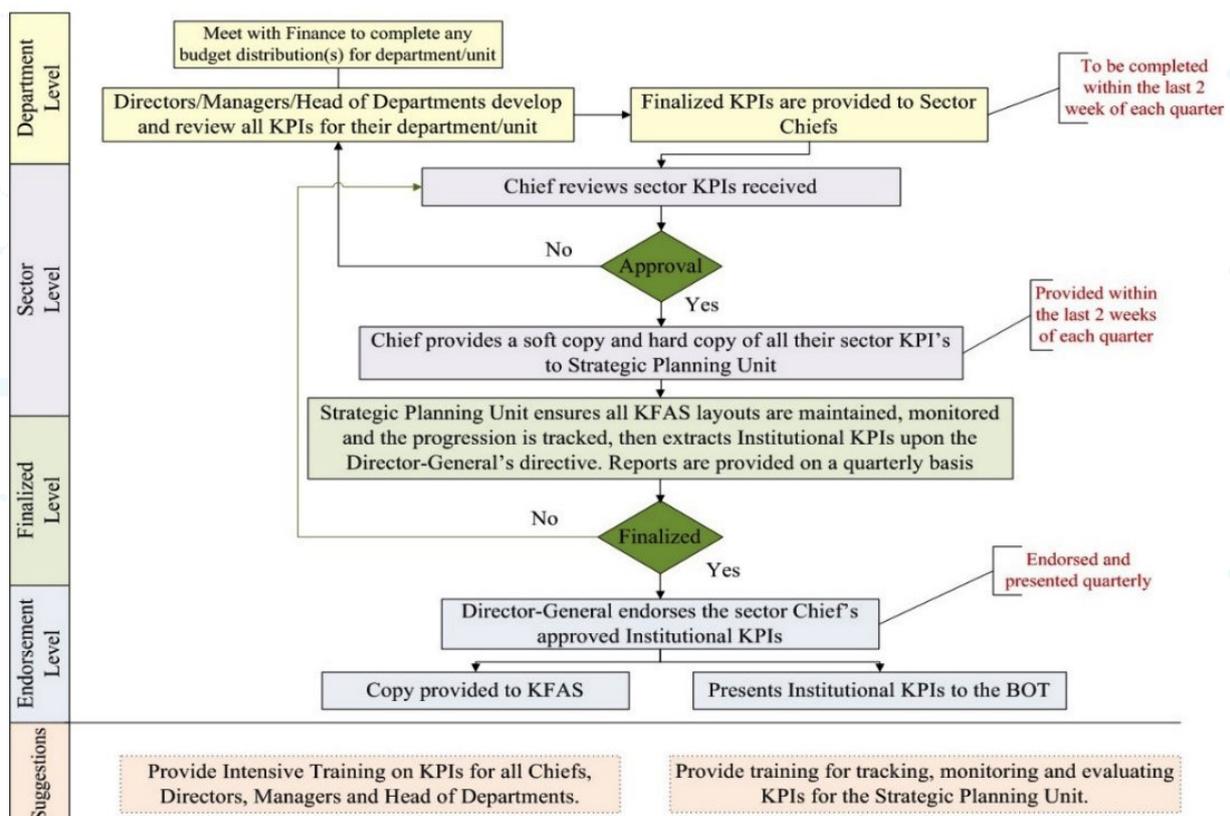
b. Key Performance Indicators (KPIs)

- 1st Quarter: The Department worked on the DDI KPIs provided by the sectors, representing the internal functions of each sector.
- 4th Quarter: A Provisional KPI work process was created to explain all responsibilities for KPIs in DDI. The Department conducted around 25 meetings with the Operational, Medical sectors and Director-General Directorate to review the KPIs following the KFAS template.

The following template was used for DDI 2016 KPIs:

2016 Key Performance Indicators																							
Activity	Output	Indicator	Annual Target (Baseline from 2015)	Actual Mid-Year	Actual End-year	Action Step	Progress Plan 2016												Budget in KWD (millions)	Distribution of Budget	Notes/Comments	Reference to External Evaluation Document	Corresponding Page Number(s) from main text of Evaluation
							1	2	3	4	5	6	7	8	9	10	11	12					
1																							
2																							
Prepared By:			Date:																				
Reviewed By:			Date:																				
Approved By:			Date:																				

The following diagram explains the DDI KPIs work process:



2. Social Return on Investment (SROI)

KFAS hosted a SROI Measurements workshop for two days. The information was delivered by the first firm who introduced social impact measures in the Middle East, Sustainable Square.

The workshop focused on SROI methodology and was adapted to measure KFAS and DDI activities and programs. This measurement is to understand the: societal impact, quantification of impact, assessment of the effectiveness of programs, strengthening accountability, development of real social indicators of change; and understanding the way DDI is driving change within our communities. By using this method, we are able to come up with the monetary equivalent value as a result of the investment input into each of the activities. Only training was received on how to complete an SROI with the intention of implementing this process in the future. The following template was used for the SROI:

Social Return on Investment - The Impact Map																						
SROI Network Spreadsheet for developing SROI analysis. Only to be used as part of SROI Network training. The spreadsheet does not include any guidance																						
Stage 1		Stage 2			Stage 3					Stage 4			Stage 5									
Stakeholders	Intended/unintended changes	Inputs	Outputs	The Outcomes (what changes)		Financial			Source	Deadweight %	Displacement %	Attribution %	Drop off %	Impact	Calculating Social Return							
Who will we have an effect on? Who will have an effect on us?	What do we think will change for them?	What will they invest?	Value of activity in numbers	Description: How would we describe the change?	Indicator: How would we measure it?	Source: Where did the information from?	Quantity: How much change will there be?	Duration: How long will it last?	Financial: What proxy did we use to value the change?	Value £: What is the value of the change?	Source: Where did we get the information from?	What activity would we displace?	Who else would contribute to the change?	Will the outcome drop off in future years?	Quantity times financial proxy, less deadweight, displacement and attribution	Discount rate	Year 1 (after activity)	Year 2	Year 3	Year 4	Year 5	

HEALTHCARE INFORMATION UNIT ACTIVITIES:

Health information works on identifying, capturing, and sharing information. Some of the information include policies and procedures, documents and statistics.

1. DDI Policies & Procedures (P&P)

The Institute's portal P&P site is in the process of being updated to include a search engine option, automatic announcements and a design change. The policy and procedure site received 12,024 clicks for DDI P&P views in 2015 and 2016.

Quarterly, advance reminder emails were sent to concerned departments regarding any upcoming P&Ps which will be due for review/renewal. In addition, each sector received a list of all P&P and their renewal date for the next three years, to date.

DDI Sectors who provided Policies and Procedures for DDI	DDI Sectors which have pending Policies and Procedures for DDI
Medical 11 Sectors	Operational 1 Sector
Operational 7 Sectors	Research 1 Sectors
Research 9 Sectors	Others 2 Sectors
Others 2 Sectors	

The Department received 31 NCRF requests for new P&P and updated information/changes for 66 P&Ps.

Once every P&P is approved, signed by all essential staff, the original is scanned and uploaded onto the portal. The original is kept in a secure documentation room. If any P&P(s) are in process of being reviewed or created but have not yet been fully approved, they are not included in the current statistics.

In 2016, a 3.75% new P&P increase was observed resulting in 404 P&P's available on the Policy and Procedures Site within the DDI Portal.

The following table provides the P&P breakdown for each sector in DDI:

Medical Sector Policy and Procedures	
Departments/Units	TOTAL
Clinical Services	3
Clinical Services-Clinical Laboratories	40
Clinical Services-Health Information Management	8
Clinical Services Infection Control Department	11
Pharmacy - Clinical Services Department	40
Clinical Services-Podiatry	12
Diagnostic Imaging Center	29
Education and Training Department	26
Fitness and Rehabilitation Center	9
Nursing Department	56
Nutrition Department	15
Medical Total	249
Operational Sector Policy and Procedures	
Biomedical Engineering Department	4
Building Management & Maintenance Department	25
Human Resources Department	14
Information Technology Department	12
Purchasing & Procurement	5
Operational Total	60
Research Sector Policy and Procedures	
Animal Care Committee	10
Biomedical Research Department	13
Immunology and Innovative Cell Therapy Unit	3
Office of Research Affairs	15
Animal Care and Ethical Committee	0

Library Department	5
Library Department-CRDMU	5
Pancreatic Islet Biology Unit (waiting for the updated name)	10
Research Operations Project Management	1
National Dasman Diabetes Biobank (waiting for the updated name)	15
Research Total	77
Director-General Directorate Policy and Procedures	
General DDI Policy and Procedures	14
Healthcare Planning & Development Department	4
Director General Directorate Total	18

2. Dasman Diabetes Institute Website Involvement



HPD coordinated with IT and PR for the development and implementation of a new DDI website. A Healthcare Information Specialist was on the DDI website team and worked on the monitoring and tracking for each section/department within DDI's website. Multiple meetings

occurred to finalize the new layout, design and content for the pilot website. The new website for DDI was live by the 2nd quarter of 2016. HPD continued to help until the end of the 2nd quarter at which time, the updating and monitoring of the website became the responsibility of the PR Department with the technical aspect being the IT's responsibility.

DEVELOPMENT PROGRAMS & MAINTAINING REGIONAL AND INTERNATIONAL COLLABORATION AND PARTNERSHIPS:

1. Cooperation with the European Commission (EC)



We continued to maintain the requirements as an organizing host for the European commission's activities in science, technology and innovation. The Institute is the leader of the work program 2 (WP2) - building on best practices towards the future: clustering within the selected research

priorities towards HORIZON 2020.

We succeeded to secure a 124,000 Euro grant from the European Commission/INCONET2 for the Institute.



We participated in the third Project Coordination Board Meeting of the Science & Technology international cooperation Network 2 (INCONET-GCC2) which was organized in Brussels. The meeting was organized back-to-back with the 2nd International Conference of the project. Representatives of 16 out of the 20 institutions of the INCONET-GCC2 consortium attended the meeting.

2. Gulf Cooperation Council Health Ministries Reference Center



The Department continued necessary requirements to maintain certification by assisting with reports on the activities, accomplishments and future plans to be circulated for consultation and exchange of experiences between the centres, World Health Organization and other international organizations.

3. Revising & Enhancing the Business Plan for Establishing a Comprehensive Program for Diabetes Care, and Research in Kuwait

In order to deal with the diabetes epidemic in Kuwait, the Institute proposed the establishment of a training and education program (Diabetes Education & Research Program), facilitated by the Kuwait Direct Investment Promotion Authority (KDIPA) to support several initiatives focused on creating awareness, training local professionals, and introducing international best practices in prevention and care of diabetes. The plan satisfies a number of key KDIPA's parameters and add long-term sustainable value to Kuwait such as:

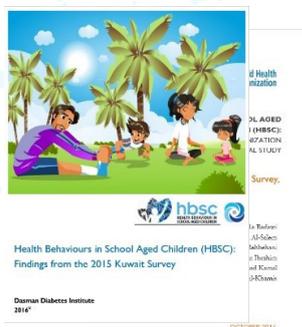
- a) Meaningful partnership with strategic partners and KDIPA obligors
- b) High research content and knowledge transfer
- c) Training of Kuwaiti nationals

HEALTH RESEARCH INVOLVEMENT

The directorate currently has two approved ongoing research projects:

1. World Health Organization (WHO) Programs and Projects

a. Health Behaviour in School Aged Children (HBSC) in Kuwait



DDI was a part of a research collaboration with the World Health Organization to become a linked project for the Health Behaviours in School Aged Children project.

The project's primary aim was, "to better understand the health status of the young and identify health behaviours that affect their health in their social context."



An analysis of the cross-national survey conducted across 39 public sector schools

in Kuwait was conducted using the HBSC data collected and inserted in REDCap. Analysis of the 5,288 questionnaires indicated a high completion rate. The manuscript writing phase will begin in 2017.

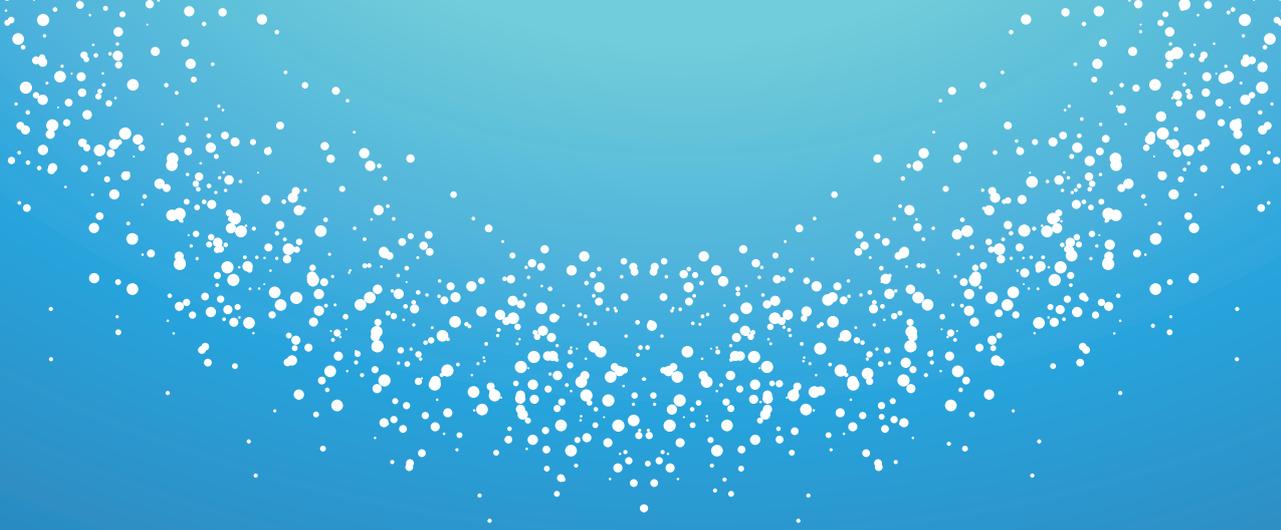
2. Health Outcome/Performance:

a. Assessment of type 2 diabetes management outcome at DDI

An electronic health record data on 963 patients within DDI were statistically analyzed and tabulated into six tables. The tabulated data covered information on:

- Characteristics of all type 2 diabetics
- Medication characteristics of type 2 diabetics
- Association between various demographic and clinical parameters with HbA1c
- Association between type of medications used with HbA1c utilizing the similar three HbA1c groups (< 7; 7-9, and > 9)
- Odds ratio for variables affecting HbA1c levels whether it was positive or negative
- Adherence to performance indicators by year to clinical standards

Once all data analysis is completed and the findings are concluded the manuscript phase will begin



Research Division

Annual Report

2016

Research Units Overall Objectives

2.1 RESEARCH SENIOR MANAGEMENT - CHIEF SCIENTIFIC OFFICER

Dasman Diabetes Institute (DDI) has a pool of experienced researchers in various fields of diabetes research and management. The research work has been gradually developed over the years. The main strength of DDI is that diabetes research in different disciplines can be coordinated within DDI in order to maximize the uses of various skills that exist in DDI. In addition, active external partnerships at the domestic and international levels have been initiated. This has created a scientific environment that will foster investigating the complexity of diabetes and its complications, their determinants, treatment, prevention and care.

All research activities of the DDI Research Division are coordinated under guidance of the Chief Scientific Officer (CSO), assisted by the Research Operations & Project Management Department. Strategic planning is one way to manage DDI's research portfolio in order to maximize the value of the portfolio through careful examination of its components, that constitute research programs and projects.

RESEARCH OPERATIONS & PROJECT MANAGEMENT DEPARTMENT

The design of the organizational structure of the DDI Research Division depends on three main contextual factors: operations, scientific domains and platforms. The elements of research organizational structure that is contingent on these factors are: formalization, differentiation (both vertical, i.e. number of levels and horizontal, i.e. number of divisions, departments or subunits), size of administrative component, centralization, and span of control, specialization, and channels of communication. To fulfil such an approach, research operation management was integrated along with functional units and the supportive core facilities. Though all research entities will have their independent tasks, they all work in concert with an interdisciplinary approach together with other teams within DDI for common goals.

Research Operations & Project Management Department is a management structure responsible for standardizing project-related governance processes and facilitating the sharing of resources, methodologies, tools, and techniques. The responsibility of this Department will vary from providing project management support functions, to principal investigators via the Office of Project Coordination and Office of Research Affairs..

RESEARCH REGULATORY AFFAIRS

OFFICE OF RESEARCH AFFAIRS (ORA)

The Office of Research Affairs (ORA) provides highly valued support services that help investigators during the trajectory of research projects' execution. It also oversees the quality and the compliance of research projects at DDI regarding the national and international regulations, oversees the collaborative research, liaison with multisite clinical trial studies, which helps bringing cutting edge research to the country or to overall create a research conducive environment. ORA works hand-in hand with research, operations, and project management departments to contribute to the overall Institutes's mission or management of research.

ORA provides administrative support to the following committees:

- **Ethical Review Committee (ERC)** which act as the Institutional Review Board (IRB) at DDI and reviews/monitors the ethical aspects of research projects for protecting the welfare and dignity of human research participants. The Ethical Review Committee of DDI is registered under the U.S. Department of Health and Human Services (HHS).
- **Animal Care and Ethics Committee (ACEC)** which serves to protect the animals used in experimental research, testing or teaching. Animal model research continues to make vital contributions to the understanding and treatment of many major health problems including cancer, heart disease, and diabetes. ACEC is strongly committed to the core principle of the 3Rs, that is, (i) "replacement" of animals with other alternatives if there are any, (ii) "reduction" of the number of animals used as much as possible, and (iii) "refinement" of research procedures and intended end points to minimize pain and distress for experimental animals. ACEC members include scientists, attending veterinarian, community representative, and head of animal facility. ACEC mandates that all research and teaching involving animals must receive written approval before commencement.
- **Research Audit and Review Committee (RARC)** which serves to enhance the scientific quality and ethical standards of research proposals by rigorous peer review of submitted proposals. It pre-evaluates the proposals for scientific and technical merits before sending to external reviewers and maintains liaison with PIs for feedback during modification process. In addition, RARC also reviews protocols or monitors situations for adjudicating in matters that relate to the protection and welfare of human participants or animal subjects.

Research Functional Units Divided by Domains

• BIOMEDICAL RESEARCH UNITS:

1. BIOCHEMISTRY AND MOLECULAR BIOLOGY UNIT (BMBU)

The research of the unit is focused on enhancing the molecular understanding of

metabolic signaling pathways involved in obesity, insulin resistance and Type 2 Diabetes and translating this knowledge to more applied clinical research. Our multi-systems approach utilizes cutting edge techniques in Molecular Biology, Cell Biology, Transcriptomic, Proteomic and Metabolomics that enables identification of clinically relevant biomarkers of obesity and diabetes. Data generated from the different assays are merged together to generate models allowing us to integrate our findings with known pathways and uncover new players that modulate obesity and diabetes to foster prevention and drug discovery for effective therapeutic development.

2. FUNCTIONAL PROTEOMICS AND METABOLOMICS UNIT (FPMU)

The integrative “Omics” approaches are becoming a pillar for overcoming the challenge of translating basic research findings into clinical applications beside their fundamental role as a catalyst for discovery and development of biomarkers and drugs. Hence, the Functional Proteomics and Metabolomics Research Unit (FPMU) with the state-of-the-art scientific technologies and expertise provides opportunities for internal and external collaborative research. The FPMU team is focusing on discovering and validating biomarkers for diabetes prevention and early detection of diabetes-related complications by conducting in-depth research involving in vitro, in vivo and clinical studies. Our Mass Spectrometry-based platforms are used to detect and quantify differences between physiological or pathological states to understand biological mechanisms in relation to diabetes and its complications.

3. FUNCTIONAL GENOMICS UNIT (FGU)

This unit primarily focuses on identification and characterization of genes and gene variants that confer risk to obesity, diabetes and related complications using high-throughput genome-wide methodologies with emphasis on genome-wide association studies (GWAS), whole genome/exome sequencing, whole transcriptome profiling and high-resolution HLA typing. Our study objectives extend to regulatory genomics understanding the functional consequences of GWAS-identified variants by intracellular signalling studies and by generation of gene-knockouts using the most advanced CRISPR/cas9 technology. Other contemporary areas of research include investigating epigenome alterations, gene-gene interactions, exosomal microRNA profiling and the development of panels consisting of population-specific markers for predicting the risk outcomes of complex disorders.

4. IMMUNOLOGY UNIT

The current research initiatives of immunology research group at DDI involves the central mechanistic theme that relates to immunometabolism of diabetes. The overall goal is to identify novel immune and metabolic biomarkers/targets of preventive and therapeutic significance in relation to diabetes and its complications. Our current research objectives/activities focus the following: a) Transcriptional regulators of metabolic inflammation, adipogenesis, lipogenesis and lipolysis, fat browning, glucose uptake and energy expenditure; b) Role of high fat diet, free fatty acids /bioactive lipids

in Inflammation, Insulin resistance/T2D and associated complications; c) Epigenetic landscape changes underlying the effects of high fat diet components and cytokines/chemokines/adipokines in metabolic inflammation and diabetes; d) Mechanistic role of fatty acids receptors (TLRs, GPCRs) in metabolic inflammation ; e) Molecular immune mechanisms involved in etio-pathogenesis of diabetic complications; f) Metabolic control of regulatory immune cells' development and function and the influence of regulatory immune cells on host metabolism; g) Impact of nutrients, probiotics and microbial metabolites (SCFAs) on immune function and regulation; h) Role of the microbiome in diabetes, and the clinical use of probiotics / dietary interventions for the prevention and treatment of diabetes (T1D and T2D) and associated conditions; i) Signaling transduction pathways and molecular mechanisms of insulin resistance underlying the immunometabolic outcomes; j) Identifying the signaling mechanisms that mediate pancreatic beta-cells regeneration and thermogenesis in brown adipose tissue; i) Gene expression profiling studies of Zebrafish pancreatic regeneration as a model to identify potential targets for the treatment of type-1 diabetes in humans.

5. ISLET BIOLOGY UNIT (IBU)

The main focus of IBU activities is to study mechanisms involved in the pancreatic islet and beta cell malfunction and failure in diabetes, and to investigate different clinical applicable strategies to prevent and treat pancreatic islet and beta cell malfunction and failure. These activities will be carried out over a range of “Bench to Bed” research strategies by using biological specimens, cell lines, laboratory animal models, and eligible human subjects enrolled in well designed and approved clinical trials.

• POPULATION HEALTH RESEARCH UNITS:

1. EPIDEMIOLOGY & PUBLIC HEALTH UNIT

The aim of the Unit is to minimize inequalities in health and create situations in which all people can enjoy the highest quality of life possible within the settings and health systems they live in. Primary prevention of diabetes is the main objective of the research carried out by the Unit. The public health approach to diabetes is predicated on the understanding that health and disease are always a function of complex interactions amongst biological, social, behavioral, economic and other factors. It sets out to: (a) create a critical mass of like-minded researchers, (b) encourage sharing of knowledge, ideas and research methods, (c) identify new needs in public health research, (d) explore innovative research methods, (e) discuss policy and program implications of findings, (f) help translate findings into policy and program options.

2. POPULATION GENOMICS & GENETIC EPIDEMIOLOGY UNIT

In the Population Genomics and Genetic Epidemiology Unit, we explore the genomes of Kuwaiti individuals to understand the population-specific genetics of diabetes and related disorders. Our research works aim to determine the causal genetic variants for obesity, type 2 diabetes and related disorders particular to Kuwaiti population.

These works are rooted and facilitated from our fine-scale analysis of Kuwaiti populations' genetic structure amidst the Middle East region, as well as in the global standpoint. For this, we have generated a combined dataset, including our in-house and published Middle East region data, based on genome-wide genotype, exomes and whole genomes data employing high-throughput computational tools. All these big data analysis are being supported by the high-end cluster computing facility housed in DDI. In addition, we are involved in epidemiological studies using nationwide health information for better understanding of the risk factors influencing the cause of obesity, type 2 diabetes and related disorders. In a nutshell, our team works towards personalized health care in the context of diabetes and related disorders through genomic characterization of Kuwaiti population.

- **CLINICAL RESEARCH UNITS:**

- 1. CLINICAL TRIALS UNIT (CTU)**

The fundamental purpose of the CTU is to create the infrastructure supporting clinical research in promoting the population's health and well-being, through the management of patient-based clinical research. CTU offer expertise in specialist trial design and analysis to researchers interested to conduct a clinical trial study on diabetes and its complications. The overall objective is to facilitate high-quality, timely and successful trial conduct and ensure that regulatory and governance requirements are met following Ethical Review Committee (ERC) policies and procedures manual.

- 2. FAMILY MEDICINE & PEDIATRIC UNIT (FMPU)**

Overall goal of FMPU is to improve the health and well-being of children in Kuwait by conducting high quality research in relevant priority areas and sharing the information with policy makers for translation into policy and large-scale implementation. Research related to childhood-onset diabetes has a high priority. Prevention of childhood obesity to reflect the growing concern of Kuwait's very high prevalence of childhood obesity and metabolic complications related to obesity.

- **RESEARCH CORE FACILITIES:**

- 1. NATIONAL DASMAM DIABETES BIOBANK (NDDB)**

The National Dasman Diabetes Biobank (NDDB) is a centralized, comprehensive, core laboratory that provides nucleic acid extractions (blood, saliva, buccal swab and urine), histology, immunohistochemistry, and tissue microarray for approved projects. In addition to that DDI-NDDB also maintains a cell line repository, wherein cell lines are procured from commercial sources, passaged and stored. Around 26,000 research participants' samples were accrued between 2010 and 2015 from more than 25 approved research projects. A total of 160,833 vials (DNA, Plasma, Serum, Urine and Saliva Vials) are stored in the ultralow temperature -80 degree freezers, 7,859 PBMC vials are stored in liquid nitrogen tanks; 8,808 samples are stored in refrigerator

(Blood spot cards and hair samples) and remaining are biopsy tissue samples. NDDDB is focusing in developing a diabetes biobank to support the research community within DDI to enrich the research publications.

2. ANIMAL AND ZEBRAFISH (AZF) CORE FACILITY

The AZF Core Facility is engaged in performing two main types of activities that relate to: (1) Laboratory Animals; and (2) Experimental Medicine. The Laboratory Animals platform offers opportunities to visiting students and DDI researchers to acquire knowledge and learn hands-on skills related to laboratory animal care, handling, and use for teaching and research purposes. Our mission is to maintain a healthy balance between the animal care & use and the animal model-based research activities. As a core facility, AZF serves to guide and assist DDI researchers with animal model research involving mice, rats, and zebrafish. The usual activities include animal care, handling and manipulations, inoculations, blood and tissue sampling, survival and non-survival surgeries, tissue preservations, necropsies, blood glucose measurements, intravenous (IV) glucose tolerance tests (GTT), in vivo body imaging, cell cultures, euthanasia, etc. We also help the researchers with selecting suitable animal models in addressing their specific research question(s), aims and objectives.

3. SPECIALIZED EQUIPMENT CORE FACILITY (RSECF)

Previously, specialized equipments at DDI were under-utilized internally. Furthermore, technology platforms were not exposed enough for external researchers either to attract pertinent collaborations. We initiated an analysis of the current situation with respect to the use and status of specialized equipment for intramural and extramural research activities.

In general, RSECF comprises those platforms that are needed by several investigators to conduct their research, but are generally expensive, complex or specialized for all investigators to provide and sustain themselves within one unit. They require to have actively involved scientific and managing staff who are able to interact with researchers and lab staff across a range of disciplines. RSECF is centralizing the management of these platforms, created in April 2016 to coordinate and facilitate the use and sharing specialized platforms. Each specialized platform belongs and is scientifically managed by the functional unit with an oversight by the head of SECF. The unit head and his/her staff oversee the day-to-day operations and also provide user training.

During the last year we established the following action items to develop and support RSECF activities:

- A steering committee was created to evaluate and compile the list of platforms to be included and monitored by RSECF
- Assigned a head of RSECF to manage the core facility

- Developed a Policy defining specialized platforms and their use for collaboration or service
- Created of Log book to manage each equipment
- Developed an online booking system accessible to all DDI research staff
- Accessed all service contracts in relation to specialized platforms
- Requested a centralized budget starting from 2017

The creation of the RSECF started to impact positively on the DDI research activities and costs, and provided a solid internal foundation for systematic support, and enhanced operations of shared research facilities. The next step will be the development of a business plan in line with DDI research strategic plan to foster both internal and external use of our specialized platforms.

4. BIOSTATISTICS AND BIOINFORMATICS CORE FACILITY

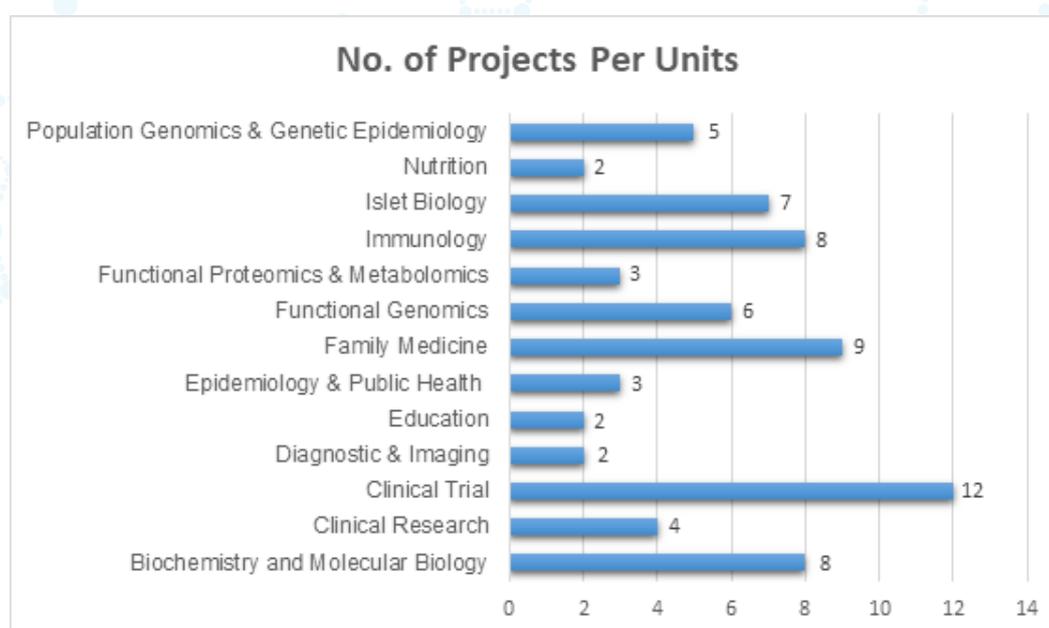
Bioinformatics and Biostatistics overall goal is to investigate data and knowledge from the multiple research areas which is required to achieve a unified view of risk factors and biomarkers to address issues relating to diabetes and obesity in the Kuwaiti population. A true unification occurs when adopting methods and data analysis approaches from one domain to the other. Both the domains of biomedical sciences (particularly bioinformatics) and health & epidemiology deal with large-scale data. It is required that the different research domains at DDI benefit from a core facility that has expertise in the domains of general bioinformatics, genome informatics, informatics of omics (genomics, proteomics, metabolomics), statistical genetics, biostatistics, data mining, and statistical calculations. Modern day biomedical sciences and health sciences required to handle large-scale high through put data and hence designing/procuring/administering (in association with the IT Department) high performance computing and storage clusters with the appropriate software tools is an integral component of the facility.

The Research Unit will contribute to the core facility by way of transferring developed methodologies, software tools and data resources. The core facility will host personnel experienced in bioinformatics and/or biostatistics as well as host a series of software packages. It will cater to the need of the research activities at the Institute either on collaborative or service basis.

Approved On-Going Projects Lists:

Research projects within programs or portfolios are means of achieving organizational goals and objectives, often in the context of a strategic plan. Although a group of projects within a program can have discrete benefits, they can also contribute to the benefits of the program, to the objectives of the portfolio, and to the strategic plan of the organization.

Research at DDI is evaluated through a series of processes as depicted in the policies and procedures of office of research affairs (ORA) (DDI/ORA/003) under the research Operations and Project Management Department. First step of this process is the scientific evaluation, which is done by the chief scientific officer, external reviewers and by research audits and review committees. Once the research is scientifically evaluated, then the research undergoes ethical evaluation by the ethical review committee. Ethical approval is provided to the research for a period of one year. Reminder for the submission of progress report is provided to the investigators 60 days prior to the expiry of approval. Investigator submits the progress report of his/her research to office of research affairs (ORA) to be evaluated for continued approval of research. ORA performs compliance survey (audit) of the research yearly to evaluate that the research is being conducted according to the national and international guidelines. The audit report is then reviewed by the ERC. If any major misconduct and/ ethical violation is observed during the audit then ERC evaluates the misconduct as per the policy and procedures of ORA (misconduct in research DDI/ORA/016, handling ethical violation DDI/ORA/012). Based on the committee's decision, the research is either suspended or terminated. Apart from the misconduct, a research can be terminated based on the criteria mentioned in the policies and procedures of ORA (research termination and suspension policy DDI/ORA/010).



**LIST OF APPROVED ON-GOING RESEARCH PROJECTS:
(Some of the projects approved in 2016, have not yet started in practice)**

S.No	Title of the Study	Unit
1	Children Obesity Program “Cellular and Molecular Basis Underlying Childhood Obesity in Kuwait: Dissection of the Inflammatory and Stress Responses.”	Biochemistry and Molecular Biology
2	Betatrophin a New Hope: Clinical and Biochemical Characterization of Betatrophin and its role in obesity and diabetes: A pilot study	Biochemistry and Molecular Biology
3	Unravelling the role of micro RNA-103,143 and 181 in obesity and diabetes	Biochemistry and Molecular Biology
4	Non-proteinuric Diabetic Kidney Disease: Study On Demographic, Biochemical and Molecular Perspectives	Biochemistry and Molecular Biology
5	Identification of OSA Related Biomarkers and their Relation to Metabolic Disorders	Biochemistry and Molecular Biology
6	The Role of HSP40 Proteins in Obesity and Diabetes and its Clinical Implications	Biochemistry and Molecular Biology
7	Deciphering the role of betatrophin and its variants in beta-cell proliferation, lipid metabolism and insulin signalling using metabolomics and proteomics	Biochemistry and Molecular Biology
8	The Role of HSP40 Proteins in Obesity and Diabetes and its Clinical Implications	Biochemistry and Molecular Biology
9	The Diabetes and Tele-mobile study (DATES): A randomized controlled trial of mobile health intervention to support self-management for people with type 2 diabetes	Clinical Research
10	Comparison of laboratory changes, food intake and metabolic profile in patients with obesity and Type 2 Diabetes Mellitus: Before, during and after taking Aphoeline Brake™	Clinical Research
11	Immunogenetics of new onset of diabetes post-kidney transplantation.	Clinical Research
12	Kuwaiti Autoimmune Diabetes Study (KADS) Characterization of Type 1 Diabetes in the State of Kuwait: Genetic Predisposition of Type 1 Diabetes in Kuwaiti Families & Kuwaiti Autoimmune Diabetes Study (KADS) (Part II) Characterization of Type 1 Diabetes in the State of Kuwait: Autoantibody Screening of Type 1 Diabetes in Kuwaiti Families	Clinical Research
13	International Diabetes Management Practices Study (wave 7) IDMPS 7	Clinical Trial

14	International Prospective Observational Study describing Pattern of care of Type 1 and Type 2 diabetic patients and Their characteristics during the holy month of Ramadan	Clinical Trial
15	International, randomized, open label study to compare the safety and efficacy of lixisenatide vs sulfonylurea on top of basal insulin treatment in Type 2 Diabetes Mellitus subjects who elect to fast during Ramadan	Clinical Trial
16	Effect of High Density Spinal Cord Stimulator (SCS) in Painful Diabetic Peripheral Neuropathy (PDPN)	Clinical Trial
17	Observational, prospective, parallel cohort study to evaluate tolerability of canagliflozin and sulphonylurea on a background therapy of metformin with or without DPP-4 inhibitor during Ramadan fasting in patients with Type 2 Diabetes	Clinical Trial
18	Real World Assessment of clinical outcome changes including month of Ramadan for Dapagliflozin in Management of Type II Diabetes Mellitus	Clinical Trial
19	Early prevention of Diabetes complications in people with Hyperglycaemia in Europe: Study e-PREDICE	Clinical Trial
20	A Double-blind, Placebo-controlled, Parallel Design, Randomized Phase 2A Trial Evaluating the potential activity and safety of hMaxi-K Gene transfer in males with Erectile Dysfunction.	Clinical Trial
21	MSBASIS: An international registry dedicated to evaluating outcomes data in Multiple Sclerosis (MS).	Clinical Trial
22	The Real Life Effectiveness and Care Patterns of Diabetes Management Study for Eastern Europe, Middle East, Africa Region (RECAP-DM EEMEA STUDY)	Clinical Trial
23	DISCOVERING Treatment Reality of Type 2 Diabetes in Real World Settings	Clinical Trial
24	A pilot study to assess the effect of Sudarshan Kriya Yoga (SKY) on stress management and quality of life of type 2 diabetic patient after a 15-week intervention	Clinical Trial
25	TIBIAL INTIMA MEDIA THICKNESS in type 2 diabetes mellitus with and without critical limb ischemia: A comparative study	Diagnostic and Imaging
26	Prospective evaluation of diabetic foot with 3T MRI using IDEAL	Diagnostic and Imaging

27	Outcome of diabetes education among renal transplant recipients with new onset diabetes after transplantation (NODAT)	Education
28	Experiences and expectations of children and adolescents towards Insulin Pump Therapy and its effect on their quality of life: a qualitative study	Education
29	Kuwaiti Wellbeing: A population based study of the interaction between environment and genetic factors in determining obesity, insulin sensitivity, hyperglycemia and allergies in the state of Kuwait	Epidemiology and Public Health
30	Preventing Type 2 Diabetes Mellitus and obesity through sound infant and young child feeding, especially breastfeeding	Epidemiology and Public Health
31	Defining how people in Kuwait perceive diabetes and its implications for health promotion and protection	Epidemiology and Public Health
32	Obesity, Metabolic Syndrome, and Type-2 Diabetes in Children & Adolescents from Multiethnic Origins in Kuwait: A Prospective Cohort Study	Family Medicine
33	Development of Childhood-Onset Diabetes Registry in Kuwait	Family Medicine
34	Monogenic diabetes in the Young: A study from Kuwait	Family Medicine
35	Better control in Pediatric and Adolescent diabetes: working to create Centres of Reference	Family Medicine
36	Incidence of complications in young adults with type 1 diabetes in Kuwait	Family Medicine
37	Thyroid and celiac Autoimmunity and Diseases in Children and Adolescents with Type1 Diabetes in Kuwait: Results of the Childhood Onset Diabetes electronic Registry (CODeR)	Family Medicine
38	Audit of healthcare for children and young people with type 1 diabetes in Dasman Diabetes Institute	Family Medicine
39	Adherence to Insulin therapy among adolescents with type 1 diabetes-Extent and factors affecting it in Kuwait	Family Medicine
40	A Phase 3, Double Blind, Placebo controlled, Randomized, Multi-Center study to assess the safety and efficacy of exenatide once weekly in adolescents with Type 2 Diabetes	Family Medicine
41	Delineating the underlying genetic risk factors of obesity in Kuwaiti children and adults”	Functional Genomics
42	Framework for Kuwaiti Hereditary Disorders: Gene Mapping Functional and Molecular Investigation	Functional Genomics

43	Deciphering G6B Gene Role as Potential Effector in Diabetes & Obesity Pathogenesis and Cellular Differentiation	Functional Genomics
44	Association of candidate variants with the development of childhood obesity	Functional Genomics
45	Diabetic Nephropathy study from Kuwait	Functional Genomics
46	Biological characterization of Kuwaiti-Associated Diabetes and Obesity Genes	Functional Genomics
47	Regulation of Cellular Lipolysis: Novel role in Hormone-Sensitive Lipase in insulin resistance and diabetes	Functional Proteomics and Metabolomics
48	Investigation of the protective effect of incretin mimetics on heat shock and endoplasmic reticulum stress responses: An in vitro pilot study	Functional Proteomics and Metabolomics
49	Emerging role of DUSP1 in obesity and diabetes: Effects on adiposity-induced insulin resistance	Functional Proteomics and Metabolomics
50	Investigation of the cellular and molecular anti-inflammatory response in obese individuals subjected to a defined exercise protocol	Immunology
51	Meteorin-like hormone, a potential regulator for obesity, diabetes and energy expenditure	Immunology
52	The Role of Proinflammatory Cytokines in Diabetic Nephropathy patients with type 2 Diabetes Mellitus	Immunology
53	Application of a breathing exercise program to improve asthma in obese patients: Effects on clinico-immunological parameters	Immunology
54	Adipokines induced modulation of the matrix metalloproteinases and osteopontin in human epithelial breast cancer cells: Implications for obesity related cancer metastasis	Immunology
55	Umbilical cord and ECS-derived pancreatic endocrine progenitor cells: Therapeutic approach for diabetes.	Immunology
56	Investigation of the immunometabolic roles of IRF5, IRF7, and FOXO1 transcription factors in macrophages and adipocytes in obesity and type-2 diabetes	Immunology

57	Free fatty acids-mediated epigenetic landscape priming is a key regulatory mechanism involved in inflammation and insulin resistance	Immunology
58	Training courseware & pilot proposal: Diabetes; what school personnel should know	Islet Biology
59	Elucidating the mechanism of remission of type 2 diabetes in morbid obese patients after bariatric surgery-focused on beta-cell function and insulin sensitivity changes	Islet Biology
60	Investigating the Role of mTORC1 and FFAR1 Signaling in Insulin Resistance in the Pancreatic β -cell Line INS-1	Islet Biology
61	Dissecting the role of ZnT8 in FFA-induced insulin resistant pancreatic β -cell	Islet Biology
62	A study on the role of trace elements, zinc and selenium, in islet transplantation in diabetic rats	Islet Biology
63	Investigation the mechanism of beneficial effects of Citrullus colocynthis (Handal) in prevention and treatment of type 1 and type 2 diabetes	Islet Biology
64	Oxygen Sensor Functionality in a Diabetic Rat Model – A Pilot Study	Islet Biology
65	The use of cooking classes, structural nutritional education and goal setting intervention to improve health and quality of life in overweight and obese children and their families in Kuwait Pilot Trial 2.	Nutrition
66	Assessing the validity and reliability of the Kuwait child food knowledge questionnaire.	Nutrition
67	Population genetics studies on Kuwait and the region-important for diabetes genetic endeavours	Population Genomics and Genetic Epidemiology
68	Structural variants(CNV) and inherited genome segments (ROH and IBD) as markers for diabetes risk in Kuwaiti population	Population Genomics and Genetic Epidemiology
69	Potential role of Abscisic acid (ABA) in protecting beta cell function under glucolipotoxicity conditions	Population Genomics and Genetic Epidemiology
70	Association between obesity levels and younger age at onset of T2DM is augmented in hypertensive subjects - Building mathematical bio models representing common physiological processes between obesity, hypertension and diabetes	Population Genomics and Genetic Epidemiology

71	HealthBioInformatics – Integrative Informatics of Health, Biomolecular, and Life-Style Sciences – A Knowledge-based Information System for Obesity and Related Disorders in Kuwait	Population Genomics and Genetic Epidemiology
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INTERNATIONAL COLLABORATIONS:

1. Johns Hopkins Medicine, USA on “Gene expression profiling studies of Zebrafish pancreatic regeneration”.
2. Montreal Diabetes Research Center on “Immunometabolic role of glycerol-3-phosphate phosphatase in the control of obesity-associated inflammation”.
3. International University of Catalonia-Regenerative Medicine research Institute Barcelona, Spain on “the development of a novel cultural conditions amplifying pluripotency from cells including WJ-MSCs, bMSCs, DDPSCs that are characterized by low profile”.
4. PROFUSA, Inc., USA on “Oxygen Sensor Functionality in a Diabetic Rat Model – A Pilot Study”.
5. Kuwait University on “Understand the cell signaling of diabetes and related diseases for pharmacological and therapeutic approaches of treatment”.
6. Kuwait University on “Elucidating the mechanism of remission of type 2 diabetes in morbid obese patients after bariatric surgery-focused on beta-cell function and insulin sensitivity changes”.
7. Kuwait University on “Human Diabetes proteome project (HDPP)” - HDPP initiative is to perform large-scale network biology-based experiments on detrimental effects of glucose and lipids on specialized cells and tissues linked to diabetes”.
8. Stony Brook University, New York, USA on “Adipokines induced modulation of the matrix metalloproteinases and osteopontin in human epithelial breast cancer cells: Implications for obesity related cancer metastasis”.
9. Harvard University, Boston, USA on “Investigation of the immunometabolic roles of IRF5, IRF7, and FOXO1 transcription factors in macrophages and adipocytes in obesity and type-2 diabetes.
10. Forsyth University, Cambridge, USA on “Kuwait Healthy Life” a survey on metabolic health among school children.
11. Cambridge University, UK on “Kuwaiti Wellbeing: A population based study of the interaction between environment and genetic factors in determining obesity, insulin sensitivity, hyperglycemia and allergies in the state of Kuwait”.
12. Imperial College, London, UK on “Global analysis of non-communicable risk factors”.

In addition, there have been several research collaboration activities on individual basis with or without a formal institutional collaboration agreements with several research groups worldwide that have been leading to joint publications with DDI staff.

RESEARCH PUBLICATIONS:

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7. Akhtar S, Alroughani R, Ahmed SF, Al-Hashel JY. Prognostic indicators of secondary progression in a paediatric-onset multiple sclerosis cohort in Kuwait. *Multiple Sclerosis*. 2016;22(8):1086-93.**
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13. Alroughani R, Behbehani R. Optic Nerve Sheath Meningioma Masquerading as Optic Neuritis. *Case Reports in Neurological Medicine*. 2016;2016:5419432.
14. Alroughani R, Deleu D, El Salem K, Al-Hashel J, Alexander KJ, Abdelrazek MA, et al. A regional consensus recommendation on brain atrophy as an outcome measure in multiple sclerosis. *BMC Neurology*. 2016;16(1):240.
15. AlSaggaf W, Asiri M, Ajlan B, Afif AB, Khalil R, Salman AB, Alghamdi A, Bashawieh O, Alamoudi A, Aljahdali A, ...Tuomilehto J, et al. Reported Benefits of Insulin Therapy for Better Glycemic Control in Type 2 Diabetic Patients-Is This Applicable in Saudi Patients? *Clinical Medicine Insights: Endocrinology Diabetes*. 2016;9:13-7. **
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Note: **Denotes articles published by DDI staff in collaboration with and coordinated by Other Institutions.

RESEARCH CONTINUING PROFESSIONAL DEVELOPMENT: CONFERENCE PARTICIPATIONS POSTER PRESENTATIONS:

1. Protective effects of GLP-1 analogues against cellular stress: An in vitro proteomic study. Madhu D., Khadir A., Kavalakatt S., and Tiss A. Human Proteome organisation (HUPO) 2016 Congress, Taipei, Taiwan. September 2016.
2. Physical exercise alleviates ER stress in obese humans through reduction in the expression and release of GRP78 chaperone. Khadir A., Tiss A. and Dehbi M. EOS 2016 European Obesity Summit, Gothenburg, Sweden, June 2016.
3. Protein expression of Granulicatella and Abiotrophia species in different culture conditions: A proteomics Approach. Karched M, Bhardwaj RG, Madhu D, Tiss A, and Asikainen S. Kuwait University Poster day. Kuwait City, Kuwait. April 2016.
4. Physical exercise alleviates ER stress in obese humans through reduction in the expression and release of GRP78 chaperone. Khadir A., Tiss A. and Dehbi M. Qatar Foundation Annual Research Conference (ARC'16), Doha, Qatar. March 2016.
5. Heat shock response is induced in non-diabetic human obese and restored by moderate physical exercise. Khadir A., Abubaker J., Abu-Farha M. and Tiss A. Human Proteome organisation (HUPO) 2015 Congress, Vancouver, Canada, September 2015.
6. MAP kinase phosphatase DUSP1 is overexpressed in human obese and modulated by physical activity. Khadir A., Tiss A. and Dehbi M. Keystone

Symposia, PI 3-Kinase Signaling Pathways in Disease. British Columbia, Canada. January 2015.

7. Increased expression of IL-18R and IL-18 in the adipose tissue is associated with Insulin Resistance (HOMA-IR), in obesity, Shihab K, Thomas R, Wilson A, Sardar S. Ahmad R. 9th World Congress on Prevention of Diabetes and its complications WCPD9 December 2–4, 2016, Atlanta, USA.
8. Plasma fetuin-A/ α 2-HS-glycoprotein correlates negatively with inflammatory cytokines, chemokines and activation biomarkers in individuals with type-2 diabetes. Akhter N, Shenouda S, Wilson A, Ahmad R. Sardar S. WCPD9 December 2–4, 2016, Atlanta, USA.
9. Increased ANGPTL3, 4 and ANGPTL8/betatrophin expression levels in obesity and T2D. To be published in Endocrine Practice. AlTerki, A, Abu-Farha, M., Al-Khairi, I., Cherian, P., Chandy, B., Sriraman, D., Alhubail, A., Al-Refaei, F., and Abubaker, J. 9th World Congress on Prevention of Diabetes and its Complications, Atlanta, USA.
10. Circulating Betatrophin/ANGPTL8 is Increased in obesity and reduced after physical exercise. Abu-Farha M, Sriraman D, Cherian P, AlKhairi I, Abubaker J. Keystone symposia, Banff, Alberta, Canada.

ORAL PRESENTATIONS:

1. Protective effects of GLP-1 analogues against cellular stress: An in vitro proteomic study. Tiss A. et al. Human Proteome organisation (HUPO) 2016 Congress, Taipei, Taiwan. September 2016. Selected presentation.
2. Efficient differentiae endoderm induction from human umbilical cord- Wharton's jelly derived mesenchymal stem cells. Proceedings of Women in Science and Technology for the Developing World. Sara AlKandari, 2016. Fifth General Assembly and International Conference. Kuwait. May 15-22.
3. 3D-and chemically defined- conditions mediate an efficient induction of human umbilical cord- Wharton's Jelly- Mesenchymal Stem Cells into Definitive Endoderm Lineage. Sara AlKandari et al. EASD, November, 2016. UAE, Dubai.
4. Obesity Association Testing of Kuwaiti Subset Admixture Population using Mass and Targeted SNP Genotyping Technologies. Maisa Mahmoud Kamkar et al. EASD, November, 2016. UAE, Dubai.
5. Longitudinal Circulating MicroRNA Transcriptome Modulation after Roux-En-Y Gastric Bypass is Indicative of Improved Systemic Benefits. Abdullah AlKandari et al. EASD, November, 2016. UAE, Dubai.
6. Increased circulation level of ANGPTL8/Betatrophin and ANGPTL4 and not ANGPTL3 in Subjects with Hypertension. Abu-Farha M, Qaddoumi MG, AlKhairi I,

Cherian P, Sriraman D, Alanbaei M, Abubaker J. 9th World Congress on Prevention of Diabetes and its Complications, December, 2016. Atlanta, USA.

7. The role of Angiopoietin like proteins in lipid metabolism and OSA. Abu-Farha M, AlKhairi I, Cherian P, Abubaker J. OSA from a Different Angle at Health Science, December, 2016. Kuwait University.
8. Biomarker in OSA, Abubaker J, M AlKhairi I, Cherian P, Abu-Farha M. OSA from a Different Angle at Health Science, December, 2016. Kuwait University.
9. The Role of Betatrophin in Obesity and Diabetes. Abu-Farha M, AlKhairi I, Cherian P, Abubaker J. OSA from a Different Angle at Health Science, December, 2016. Kuwait University.

EDUCATION & TRAINING:

1. LABORATORY SAFETY AND QUALITY WORKSHOP

The workshop was conducted for all research staff who are involved with research projects since safety and quality is part of the research operations process.

2. RESEARCH METHODS WORKSHOP

The workshop introduced the qualitative analytic approaches, including grounded theory and thematic analysis, which will guide researchers in applying them to data.

3. RESEARCH SUMMER INTERNSHIP PROGRAM

A total of 18 medical students were recruited. Poster session for medical students on 31st of August 2016.

4. JOURNAL CLUBS & SEMINARS

Journal Clubs and Research seminars: 18 sessions were organized from 18th of February till 13th of December 2016 with attendance between 20 and 45 attendees.

5. LITERATURE REVIEW TEACHING SESSIONS

The DDI Library offers training session on literature review to help the researcher getting a right information at the right place. Three sessions of Literature Review 1h each in 2016.

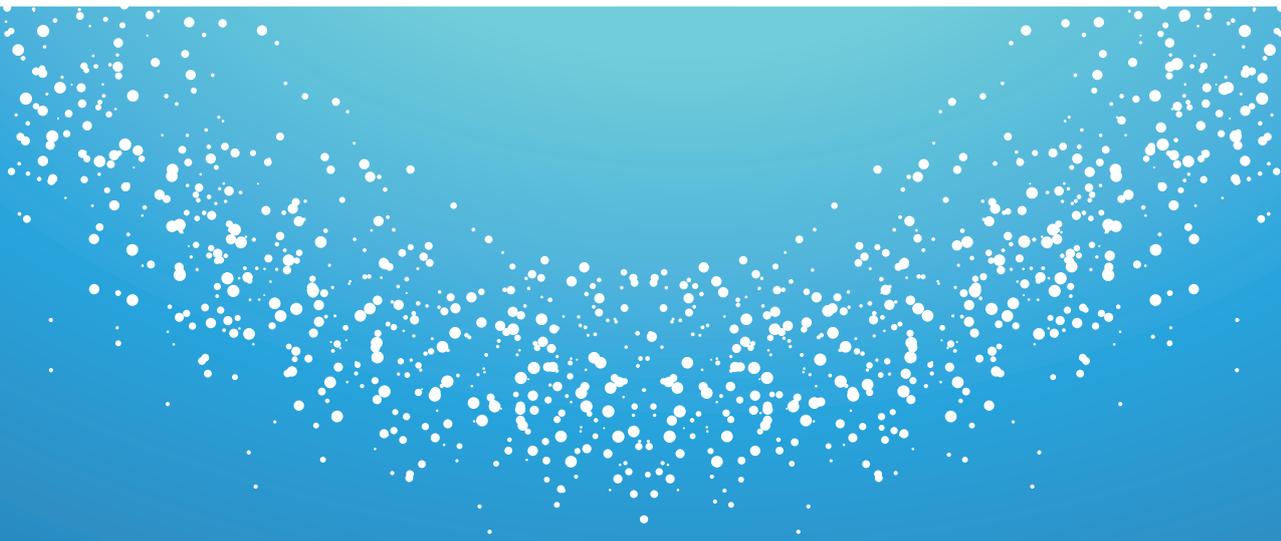
6. ENDNOTE TEACHING SESSIONS

The DDI Library also offers End Note training sessions for the researcher to manage the references. There were 8 sessions conducted in 2016, there were about 25 participants who benefited this training.

RESEARCH SUMMER INTERNSHIP PROGRAM

Internships are a unique opportunity for university students to contribute to the work of the DDI. Our internship program 6 weeks a year, it is from June to July in summer, under the direct supervision of Research Operations department at DDI.

Our internship program offers university students and recent graduates the unique opportunity to learn first-hand what a think tank is all about. The interns also provide research assistance which contribute to their research, analysis and writing skills to a study intended for publication in a specific research area. The Responsibilities may include primary research, literature reviews, survey design and execution, statistical analysis, and technical writing.



Medical Division

Annual Report

2016

Clinical Research Unit

1.1 GENERAL UPDATE ON THE UNIT:

The Clinical Research Unit has been established since July 2014, and currently comprises of eight staff members. Our vision is to contribute to the research community in general, and to Kuwait's community in specific, by publishing new findings, advancing clinical research to eventually develop novel therapeutic interventions for patients with Diabetes Mellitus (DM) and related conditions. We shall accomplish our goals: through devising long term clinically oriented projects aligned with DDI's mission and vision, encouraging collaboration within DDI's research units as well as external collaborations, translating findings from bedside to bench through new research projects, facilitating physicians' interaction with scientists and recruit, retain, nurture and develop clinical research scientists to continuously improve quantity and quality of Clinical Research. Additionally, we shall contribute to education, training and mentoring Medical and Life Sciences graduate students.

DEPARTMENTAL STRUCTURE:

1. Head of the Clinical Research Unit: Adel Ahmad, MD
2. Senior Scientist: Mohammed Jahrami, PhD. Since July 2014
3. Scientist II: Nadia Zghoul, PhD. Since July 2014
4. Research Coordinator II: Hidaya Abdalla. Since November 2014
5. Senior Research Assistant: Nada Alamaldin, MSc. Since August 2015
6. Senior Research Assistant: Nadeen Ibrahim, MSc. Since November 2015
7. Clinical Pharmacist: Mona Awadh, MSc. Since December 2015
8. Internal Medicine Specialist: Khaled Al-Sheikh, MD. Since March 2016

1.2 OVERVIEW OF THE DEPARTMENT'S ACCOMPLISHMENTS IN THE PAST YEAR:

Our activities for 2016 include:

1. Clinical Research projects
2. Education in schools and community

CLINICAL RESEARCH PROJECTS:

The following research projects were ongoing in 2016:

1. **RA 2014-019**, approved September 2014. Title: "Comparison of Laboratory Changes, Food Intake and metabolic profile in patients with obesity and Type2 Diabetes Mellitus: Before, during and after taking AphoelineBrake™".
2. **RA 2014-039**, approved October 2014. Title: "A pilot survey of the incidence of chronic pain and medical comorbidities in Kuwait".

3. RA 2012-013, approved March 2015: “Magnesium treatment of inflammation in Disorders of Glucose Homeostasis”.
4. RA 2015-013, approved 2015. Title: “Immunogenetics of new onset of diabetes after-kidney transplantation (NODAT)”.
5. RA 2015-030, approved November 2015. Title: “Non-proteinuric Diabetic Kidney Disease: Study on Demographic, Biochemical and Molecular Perspectives”.
6. RA 2016-015 A, “Kuwaiti Autoimmune Diabetes Study (KADS); HLA.
7. RA 2016-015 B, “Kuwaiti Autoimmune Diabetes Study (KADS); anti-islet autoantibody profile.”
8. RA 2014-033, “Tibial Intima Media thickness in Type 2 Diabetes Mellitus with and without Critical Limb Ischemia”.
9. RA 2014-044, “Prospective Evaluation of Diabetic Foot with 3TMRI using IDEAL”.

CONTINUOUS PROFESSIONAL DEVELOPMENT AND EDUCATION:

Educational Activities (Ms. Mona Awadh):

Goals and Objectives

To raise awareness about prevention of type 2 diabetes in the community by utilizing the media and schools’ outreach.

1. Seminar title: “I decided to change”. The activity was conducted in 5 schools at Al-Ahmadi, Hawally and Mubarak Al-Kabeer governorates.
2. Workshop title: “Motivational Interviewing Techniques for Patients with Chronic Conditions”. The workshop was conducted twice for dentists, as a part of their professional development program.
3. Media:
 - a. KTV1: Diabetes and Ramadan (parts I and II), Prevention of type 2 diabetes, Understanding your condition.
 - b. KBC1: Prevention of Type 2 diabetes, healthy tips (30 clips aired in the afternoon).
 - c. Social media: utilized the Instagram to recruit patients for the Apholine study.

1.3 DETAILS OF EACH PROJECT:

1. RA-2014-019 “Comparison of Laboratory Changes, Food Intake and metabolic profile in patients with obesity and Type 2 Diabetes Mellitus: Before, during and after taking AphoelineBrake™”.

Goals and Objectives:

A clinical trial of a new oral therapy in diabetes studying clinical changes in patients with Type 2 diabetes mellitus. The study is proposed as a placebo controlled randomized controlled trial with a drug intervention (AphoelineBrake™) in comparison to a standard treatment control arm receiving an identical placebo. The primary objective is to determine if subjects (50 patients) taking the natural product AphoelineBrake™, in addition to their standard treatment, experience differences in metabolic disease control, gastrointestinal hormones and inflammatory markers diet, hunger, satiety,

weight, compared to patients taking a placebo in addition to their standard treatment. The secondary objective is to study the effect of Aphoeline Brake on oxidative and inflammatory stress markers.

Progress:

- 42 patients have been successfully enrolled in the study.
 - We have successfully initiated the project related ophthalmology research clinic.
 - Baseline liver imaging for fat quantification has been performed for all enrolled study participants.
 - Study drug currently in quality control.
2. **RA-2014-039: “A pilot survey of the incidence of chronic pain and medical comorbidities in Kuwait”.**

Goals and Objectives:

This proposed pilot study documents the incidence of pain in diabetes mellitus patients and aims to identify associated factors to help establish a plan to manage those who suffer from this condition. In collaboration with Brigham and Women’s Hospital (Boston, USA), a survey was to be conducted assessing general pain and the occurrence of neuropathic pain in minimum 1000 diabetes mellitus patients treated at Dasman Diabetes Institute. The study is designed to conduct the survey using phone interviews (in either Arabic or English) to assess this new methodological tool for an eventual larger survey on a national level.

Progress:

- Abstract presented at the 35th Annual Scientific Meeting of the American Pain Society Austin, Texas, USA. 11–14 May 2016.
N. Zghoul, E. Ross, A. Ahmad, R. Edwards, R. Jamison. “Prevalence of chronic pain and comorbid medical conditions associated with diabetes in Kuwait: a random sample telephone survey”. Published The Journal of Pain Volume 17, Issue 4, Supplement, Pages A1-A16, S1-S224 (April 2016).
 - Manuscript currently under review submitted in August 2016:
Zghoul N, Ross E, Edward R, Ahmed A, Jamison R. (2016). “Prevalence of Chronic Pain with Neuropathic Characteristics: A Randomized Telephone Survey among Medical Center Patients in Kuwait”, Submitted to Journal of Pain Medicine 2016.
3. **RA 2012-013: “Magnesium treatment of inflammation in Disorders of Glucose Homoeostasis”.**

Goals and Objectives:

The purpose of this study is to assess the efficacy of a 3-month treatment with oral Mg of Type 2 Diabetes Mellitus patients. 50 hypomagnesemic patients will be selected for an open label study with Mg lactate tablets. The repletion of serum and oral epithelial cell Mg levels will be correlated with responses of HbA1c and inflammatory parameters before and after treatment.

Progress:

- 47 patients (out of a preset target of 50) have completed the 3-month trial.
- Buccal swabs from all patients have been collected at baseline and after 3-month oral Magnesium therapy (3 month). These have been sent to our collaborators in the US for intracellular Magnesium analysis.
- To study the effect of Magnesium supplementation on plasma SP, IL-6, CRP and other ROS/RNS inflammatory markers: plasma and urine samples are currently being analyzed at the study time points from all patients.

4. RA 2015-013: “Immunogenetics of new onset of diabetes after-kidney transplantation (NODAT)”.**Goals and Objectives:**

To study genetic susceptibility of potential cytokines in NODAT. For example, IFN- γ , IL-6, (TH1), IL-4 (TH2) & TGF- β (TH3). Which facilitate:

- Understanding of TH1/TH2 cytokine profile
- Immunosuppressive role of TGF- β in the pathogenesis of NODAT
- Role of IL-4 and IFN- γ in provoking cytokine profile
- Impact of IL-6 in inducing IFN- γ s:

Progress:

- 65 NODAT (Patients) were collected, DNA and serum.
- 23 NODAT (Controls) were collected, DNA and serum.

5. RA 2015-030: “Non-proteinuric Diabetic Kidney Disease: Study On Demographic, Biochemical and Molecular Perspectives”.**Goals and Objectives:**

- To have demographic characterization of non-proteinuric diabetic kidney disease.
- To evaluate renal tubular function biomarkers in proteinuric and non-proteinuric diabetic patients with chronic kidney disease.
- Moreover, we will look at the biomarkers as predictors of progression from micro- to macro-albuminuria.
- To determine the role of renal tubular biomarkers as predictors of decline in estimated glomerular filtration rate (eGFR) in diabetic patients with microalbuminuria or macroalbuminuria.
- To evaluate NGAL, L-FABP, and KIM-1 in comparison to established markers of urine protein differentiation for detection of renal dysfunction using molecular approaches among our Kuwaiti diabetic tubulopathy patients.

Progress:

- The project was accepted by November 2015.
- Publication:
Distribution of Hepatitis C Virus Genotypes in Bahrain.

6. RA 2016-015 A, “Kuwaiti Autoimmune Diabetes Study (KADS); HLA”.

Goals and Objectives:

- To screen person’s with T1D and their first degree relatives for HLA class I and class II.
- Establish HLA haplotype pattern for Kuwaitis with T1D.
- Establish a screening and prediction methodology.
- Understanding of the role of HLA genetic variations and their molecular and functional pathways. This may potentially lead to targeted therapies for children known to be at risk of T1D in the future.
- Early prediction of T1D carriers will also benefit the prevention and management of the disease.

Progress:

- The project has been passed in August 2016.
- Assays are ready.

7. RA 2016-015 B, “Kuwaiti Autoimmune Diabetes Study (KADS); anti-islet autoantibody profile”.

Goals and Objectives:

- To screen person’s with T1D and their first degree relatives for diabetes related autoantibodies.
- Identify Gray Zone staging for Kuwaiti T1D.
- Understanding of the role of different autoantibody variations and their molecular and functional pathways. This precision medical technique potentially might lead to delay the onset of diabetes or targeted therapies for children known to be at risk of T1D in the future.
- The above findings in addition to HLA pattern will enable us to establish a new screening methodology for prediction of those who are prone to get the disease.
- Early prediction of T1D carriers will also benefit the management and prevention of the disease.

Progress:

The equipment is available in DDI. We will be using gold standard methodology of radiolabeling autoantibody.

Requirement:

- Attending MOH requirement and licensing for radioactive material handling & use.
- Maintenance of Beta count machine.
- Trip to Barbara Davis Center, CO, USA for transfer of technology.

Overall Publications:

- Significant ACE Gene Haplotype Stipulates Development of Type 2 Diabetes in Women with Gestational Diabetes Mellitus, Published 15th April 2016.
- Olfactory Receptor Gene is a Possible MHC-linked Gene, under revision.
- HLA and type 1 diabetes genetics in Arab populations, under revision.

- A T- cell mediated cytokine milieu might be an indicator of β -cell inflammation and loss in New-Onset Diabetes after Transplantation post Renal Transplantation (to go to British Immunology Meeting)

A) Details of progress in each study in 2016:

Projects to be submitted in 2016:

- KADS (Phase III): Non-MHC genes. To be submitted by Sep 2016
- KADS (Phase IV): Identification of immunosignatures of Beta cell survival. To be submitted by Sep 2016
- NKADS (Phase I): HLA. To be submitted by Sep 2016
- NKADS (Phase II): Autoantibody. To be submitted by Sep 2016
- NKADS (Phase III): Non-MHC genes. To be submitted by Sep 2016
- NODAT: ACE Haplotyping; to be submitted by October 2016

B) Set up of Polyglandular core lab for clinical services:

Requirements:

- Maintenance of Beta count PerkinElmer
- A trip to BDC for transfer of technology to perform autoantibody project
- Recruitment of a research associate to help in lab work
- Postdoc to help in project management and good laboratory program
- A research nurse to help in obtaining non-affected members of family of affected member with type 1 diabetes.

8. RA 2014-033, “Tibial Intima Media thickness in Type 2 Diabetes Mellitus with and without Critical Limb Ischemia”.

Kindly refer to Diagnostic Imaging Report (DIC).

9. RA 2014-044, “Prospective Evaluation of Diabetic Foot with 3TMRI using IDEAL”.

Kindly refer to Diagnostic Imaging Report (DIC).

1.4 SUMMARY/ FUTURE PLANS:

We have met all our set goals in 2016 and shall continue next year in expanding further the clinical research and educational program with the following planned activities for 2017:

1. Project RA 2014-019: Conduct the study and start the intervention in collaboration with University at Buffalo (NY, USA).
2. Project RA 2014-039: Publication of research findings in paper form.
3. Project RA 2012-013: Publication of research findings.
4. Launch new project in Type 2 Diabetes prevention.
5. Launch: “Amputation Prevention in Diabetics; the role of interventional and diagnostic radiology”.

Clinical Skills Center

GENERAL UPDATE ON DEPARTMENT:

The Clinical Skills Center started 2016 with preparation for the 3rd Pediatric Conference in Kuwait, which took place at Dasman Diabetes Institute in February.

In the beginning of 2016, four new courses have been introduced by the CSC:

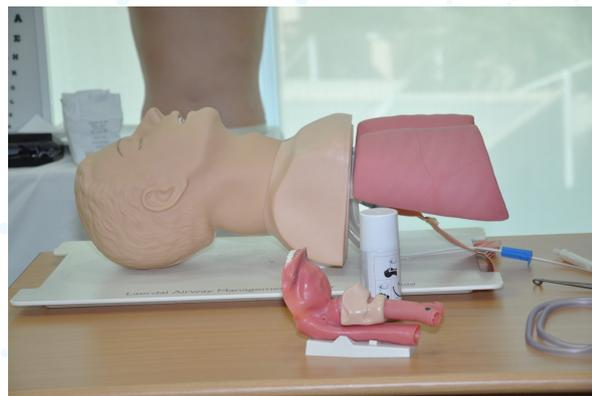
During the first six months of 2016 the Clinical Skills Center had trained about 500 people in various courses offered on daily basis, which ran mornings and afternoons to be available to as many people as possible. The Clinical Skills Center has expanded its training from medical/dental students and doctors, to reach the public and educate them about the initial and crucial moments in the saving of lives. In 2016 the Clinical Skills Center has trained people in various sectors, such as Military Cooperation, schools, and various retail companies.

The goal of 2016 was to expand on where we had left off in 2015 to reach as many people in society as possible to enlighten them about the importance of the First Aid Courses, CPR, BLS, Safe Injection and a lot more. The Clinical Skills Center reached out to people using social media and phone

applications at the comfort of their home. People can browse the Clinical Skills Center website, or reach us on social media such as Instagram and Twitter, people can call the Clinical Skills Center, or send an email to register and inquire about the courses that are available and are being conducted at the CSC. The Clinical Skills Center Internship Program gives an opportunity to students to have a hands on experience of educating and helping others when needed. These interns helped in the growth of students' training that's being conducted at the Clinical Skills Center.

OVERVIEW OF THE DEPARTMENT ACCOMPLISHMENT IN 2016

- Preparation for American Heart Association accreditation (first quarter of 2017)
- Generate AHA annual report in (June 30th)
- KIMS –examination (OSCE) (Preparation will take place in September and October 2016)
- KIMS 2nd year Residence Training Program
- Kuwait University Student OSCE



- 7th year Student OSCE
- Training of private companies (school, retail companies)
- Training of teachers from Ministry of Education
- Conducted a BLS Instructor Course (two new Dasman Staff Instructors)
- Delivery of CME Credits Accreditation from KIMS
- 2016 Internship Programs (two programs so far have been conducted)
- Maintained policies and procedures for AHA accreditation
- All Dasman nursing staff trained at the CSC
- The Clinical Skills Center provided support and assistance to the following
 - Dundee Courses
 - Multiple Scleroses – Dr. Raed Al-Logane

DETAILS OF EACH PROJECT:

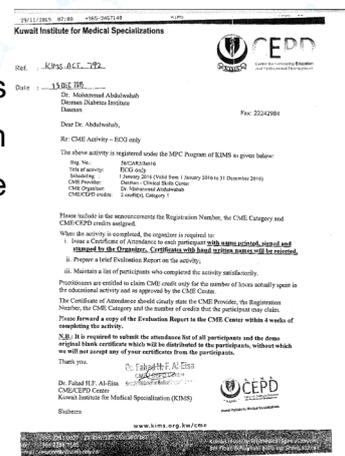
- KIMS – Kuwaiti Board conducted its examination at Dasman – CSC

For the following Boards :

- Ophthalmology Oral Exam – September 18th & 19th 2016
- Ophthalmology Final Exam – September 20th & 21st 2016
- Dermatology Oral Exam – September 25th & 26th 2016
- Dermatology Final Exam – September 26th & 27th 2016
- Family Medicine – October 24th, 25th & 26th 2016
- Kuwait University OSCE – physical assessment on various dates in preparation for their clinical skills examination from the university.
- KIMS courses were conducted weekly (every Wednesday) over the duration of 6 months in preparation for the exams.
- In 2016 the Clinical Skills Center has conducted CPR with AED courses for the Ministry of Education.
- Renewal of CME credits was received for the year 2016 January 1st to December 31st for all Clinical Skills Center courses that are listed below:

Example of KIMS CME Accreditation

- Marketing of CSC courses
- The Clinical Skills Center regularly reviews and maintains its policies and procedures for American Heart Association and Society for Simulation in Health Care. Policies are the following:
 - Mandatory training policy
 - Dispute resolution policy
 - Card issuance policy
 - Remediation policy
 - Late comers to courses policy

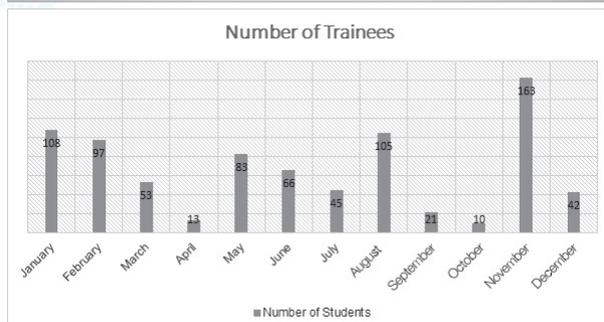
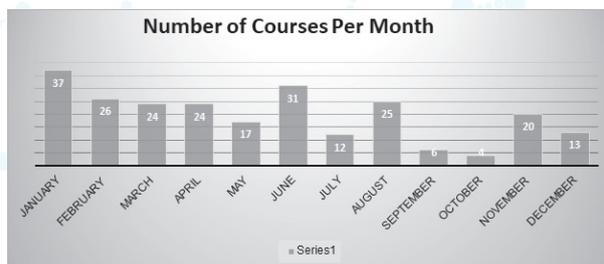


- Guidelines on how to replace lost training card and certificate
- Needs sticks / sharp injure prevention and management
- AHA quality improvement policy
- Workplace communication policy
- Training equipment disinfection policy
- AHA instructors TC transfer request



- The Clinical Skills Center reached out to the public by training various sectors in the society ranging from public sector to private sector which helped in the increase of awareness between society and family members. The Clinical Skills Center did reach to the public in different ways, and with success, it was able to train over a thousand people from different backgrounds, from housewives to CEOs and managers in both public and private sectors. The table below shows the number of courses conducted at the Clinical Skills Center in 2016.

Month	AHA Courses	CSC Skills Courses	Total
January	12	25	37
February	6	20	26
March	7	17	24
April	4	20	24
May	4	13	17
June	12	19	31
July	5	7	12
August	16	9	25
September	1	5	6
October	2	2	4
November	11	9	20
December	8	5	13
Total	88	151	239



Medical Fitness Center

I am pleased to submit the Annual Report of 2016 for the Lifestyle Program (LSP) and other Medical Fitness Center (MFC) activities at Dasman Diabetes Institute (DDI) from January 1st 2016 till date of submitting this report, as follows:

I. OVERVIEW OF MFC PROGRAMS:

The Department recently had a change of the name to “**Medical Fitness Center**” effective from May 1st, 2016.

The Medical Fitness Center (MFC) has continued to support the mission of Dasman Diabetes Institute by providing fitness and wellness programs. These programs aim to promote a healthy lifestyle to the Kuwaiti public. This is accomplished primarily by the MFC main program: The lifestyle program (LSP). What’s more, MFC coordinated and participated in numerous in-house and out-reach activities in order to educate the public and raise their awareness about physical activity and exercise.

MFC continued to conduct comprehensive assessments for all members prior to starting LSP. This assessment includes the following: medical clearance by a doctor, 6-minute walk test as needed, body composition, anthropometric measurements and fitness assessment.

All members received individualized exercise prescriptions based on the results of their comprehensive assessment. MFC fitness instructors provided continuous supervision and training instructions for all members while performing exercises at MFC. Daily records were kept documenting vitals and progress.

The MFC delivered a children’s program called “**Teen Dasmania**”. This is a group exercise class for teens that runs twice a week. Participants in Teen Dasmania also receive one educational session about healthy eating. The aim behind this fun and interactive program is to motivate children to be more active in their daily lives, and to make healthy diet choices.

Furthermore, the MFC has continued to support research in DDI as well as contributed positively to enhancing the health and well-being of DDI employees. Currently, the MFC is participating in two research projects: the ‘KIDSS’ research project and “AGDAR” research project. The MFC is also compiling fitness-related data for research purposes. MFC participated in the delivery of in-house and out-reach activities. The goal of all these activities was to raise awareness about physical activity and exercise as an important part of a healthy lifestyle, through education and advice provided for the general public, as well as the delivery of exercise classes.

Staff and Recruitment

The MFC staff members (number in parentheses) currently working are: Manager (1), Acting Senior Fitness Instructor (1), Department Secretary (1), Receptionist (1), and Fitness Instructors (5). (2-3) Nurses from the Nursing Department also cover shifts at

MFC and perform nursing functions.

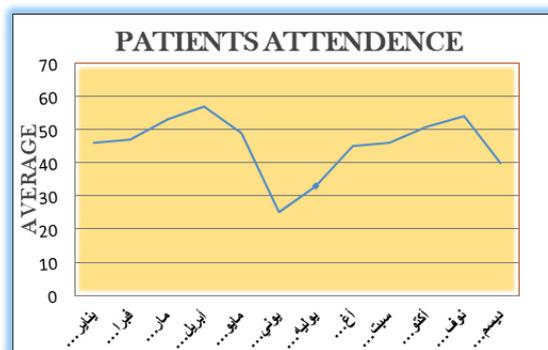
The Senior Fitness Instructor resigned on April 17th. A new male fitness instructor has joined the MFC on the 1st of November.

Dr. Khaled Al Sheikh from Clinical Research Unit received CPET training. His medical license was not finalized until Nov.

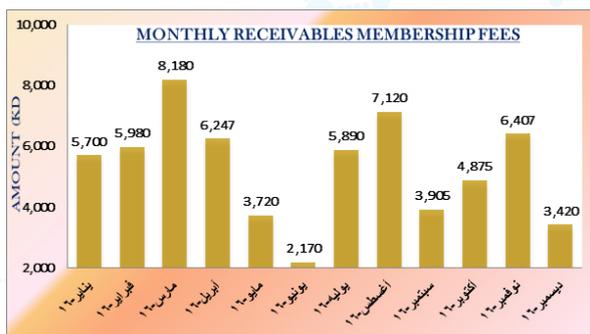
II. PROGRESS OF PROGRAMS AT MFC:

i) The Life Style Program (LSP)

- MFC facilities continued to be open six days a week till end of May. The opening hours are 8 AM to 8 PM. Starting June 2016, it was decided by the Management to close the center on Saturdays due to low attendance. The MFC operated between 11 am and 11 pm during the month of Ramadan.



- The average daily visits to MFC in 2016 was 45 from Sunday through Thursday attendance.



The revenue is received from members' enrollment, membership fees and other programs fees. The MFC submitted these revenues to Finance on a monthly basis. The graph beside shows revenue deposited with the corresponding months.

- The MFC managed expenses well and was successful in saving more than 75% of the operational cost of 2015. The MFC only spent 41% of the allocated budget for 2016.
- 93 new members joined the MFC in 2016, and 198 members renewed their memberships.
- Customer satisfaction for the year 2016 is 91.52 %.
- Members who attended the gym on a regular basis have shown improvement in their health-related fitness parameters.

ii) Teen Dasmania

TEEN DASMANIA is a program designed for children ages 10-15 years old. It is a fun and interactive group exercise class. The program consists of eight one hour sessions delivered twice a week. Classes include circuit training, boot camp, swimming, cycling, obstacle course, and agility/sports drills, in addition to one brief nutrition class. These classes aim to burn fat, calories and help build muscle. This program

promotes self-esteem, confidence, sportsmanship, teamwork, and social skills. One of our main objectives is to encourage children to move more and sit less. Height, weight, BMI, and anthropometric measurements were assessed to help track participants' progress. Fitness Assessment was performed on participants (one mile walk test, push-ups, curl-ups, and sit & reach test).

The MFC delivered the TEEN DASMANIA program twice in 2016. The first batch started from Jan 25th to Feb 17th with 10 children. Second batch was in August 27th, 2016 with five children. Almost 70% of the children attended classes regularly.

Overall, children had a positive experience and favorable results. Their cardiovascular fitness improved. Some lost weight and dropped a few inches. Most reported more energy, better sleep, and decreased stress.

Attempts were made to recruit children for another four weeks of Teen Dasmania in Oct. and Nov. Max number of participants interested was 2-3. Decision was made to put the program on hold due to low interest.

In order to promote the aforementioned MFC programs, the MFC team members engaged in the following marketing and promotional activities in 2016.

Marketing /Promotional Activities:

Promotional efforts:

- A video message on 'Healthy Ramadan' was recorded on 14th June.
- Gift Vouchers: One-month free membership was given in the form of vouchers to the winners of Ministry of Education Teachers who participated in the Dasman Healthy School Canteen Competition event. One person took advantage of this offer.
- Mishref Co-operative Society Offer: Mishref area residents receive one month free when they join the MFC and pay regular membership fees. The offer was valid from June 1st to August 31st. Four people took advantage of this offer.
- The MFC staff promoted the center's services at the clinical services areas by handing out day passes, and inviting patients to tour the MFC.
- An email was sent to clinical services doctors, HIM, nurses, nutrition, and diabetes educators asking for their help in promoting the MFC services to their patients.
- An ongoing offer since summer of 2015: Refer a friend and receive 10% off your membership renewal fees if your friend joins the MFC. Maximum discount of 30% if three people referred by the member join in the same period.
- An ongoing marketing initiative is to contact old members who have not renewed their membership in the past six months in order to invite them to renew.

New schemes were introduced to attract new members and to incentivize membership renewals:

- i. **February National Day offer:** This was effective from Feb 14th to Feb 29th. Members get one month free upon renewal.

- ii. **Ramadan Offer:** One-month introductory membership for KD 50 given to prospective members. This offer was effective from June 1st to June 30th. It excluded medical clearance, ECG, blood tests and CPET, and included anthropometric assessment, body composition and fitness assessment.
- iii. **Summer Special Offer:** This offer was effective from July 10th to Aug 31st. Members get one month free upon renewal.
- iv. **DDI Anniversary Special:** On the occasion of the 10-year anniversary of the opening of Dasman Diabetes Institute, the first 15 new diabetic members who join the Medical Fitness Center for one year get 15% discount. Offer was valid from Sep 18th to Oct 18th on annual memberships ONLY.
- v. **Diabetes Day Special Offer:** People with diabetes can join or renew their membership from Nov. 14th to Nov. 30th and receive one additional month added to their membership.

Visits to Primary Care Clinics:

Visits to various primary care clinics to promote MFC services and programs to the clinic doctors were made. The MFC Manager visited Mansouriya, Dasma, Qadsiya, Daiya and Bneid Al Gar polyclinics. The Senior Fitness Instructor also visited a few primary care centers in the first quarter.

Publicity on Media

- **KTV Filming:** KTV1 filmed a promotional video in the MFC on Jan. 27th.
- **Newspaper:** The MFC Manager was interviewed with Al Jareeda press on 24th August 2016.
- **Social Media (DDI):** Regular updates of the MFC news through DDI social media in collaboration with Public Relations and Media Department in DDI.

Other Activities in 2016:

1) Changes to MFC Fee Structure:

- **Cancellation of Medical Exemption:** Effective Jan, 2016, all members pay the same membership fees regardless of their medical condition.
- **Registration Fees:** New registration fees are implemented: KD 30 for non DDI patients and KD 20 for DDI patients. Registration fee covers lab tests, ECG and medical clearance by our medical doctor.
- **Effective Oct. 12:** As per the CMO's instructions, all DDI staff interested in joining the MFC pay KD 50 for three months. This rate includes fitness assessment, body composition, anthropometric measurements and exercise prescription.
- **Effective Oct. 12:** As per the CMO's instructions, KFAS staff interested in joining or renewing their membership at the MFC pay KD 100 for three months. This rate includes fitness assessment, body composition, anthropometric measurements and exercise prescription.

- 2) **British Embassy Staff:** A memo was sent to the British Embassy to terminate free membership in MFC for their staff effective from April 15th. The embassy staff was notified.
- 3) **Membership Agreement:** A new form that details the MFC rules and regulations was introduced in March and all members were requested to read and sign.
- 4) **New Waiver and Release Form:** Created and added to the membership agreement.
- 5) **Staff Meetings:** Held on monthly basis to discuss MFC issues, updates, etc. Minutes of all meetings are recorded and kept.
- 6) **IPP & Appraisals 2016:** The MFC Manager met with all staff members individually regarding their end of year performance appraisals. All appraisals were sent to the CMO.
- 7) **Work Plan and KPI's:** Year end 2016 work plan and KPI's are being updated and will be submitted to the CMO before end of Dec. 2017. Work plan and KPI's will be finalized and submitted to the CMO by Jan 2, 2017.

Internal Collaborations:

MFC collaborated with the following DDI departments on different programs and activities:

• PEDIATRIC RESEARCH UNIT:

The KIDSS Research Project: The MFC provides exercise classes twice a week for 12 weeks for each group of participants. This project started in mid January, 2016. There is an ongoing intake of participants into the project, and an ongoing delivery of exercise sessions. There are currently one group of girls receiving two exercise sessions a week, and one group of boys receiving two exercise sessions weekly.

• DEPARTMENT OF EDUCATION AND TRAINING (E&T):

- a) MFC participated in the School Awareness Program and other out-reach events organized by E&T.
- b) MFC participated in the IDF education to five groups of DDI employees in March/April, and Oct.
- c) Agreement reached with E&T Department to provide diabetes education to MFC members with diabetes.

• DEPARTMENT OF NUTRITION:

The MFC continued to collaborate with the Nutrition Department at DDI to provide a comprehensive service to its valued members. MFC members were evaluated and counseled in the nutrition clinic.

MFC provided one exercise session for the Nutrition Department research project "AGDAR" on Feb 29th. Ms. Samar also contributed to the internships of two dietitians on June 20th and July 28th by delivering a presentation and allowing time for them to observe the different functions of the Fitness Center.

- **INFORMATION TECHNOLOGY :**

The IT Department has been performing major modifications and structuring of the MFC system since end of 2015. These updates and necessary changes are still underway.

- **PUBLIC RELATIONS & MEDIA:**

Collaborated with PR and Media in developing the MFC website as well as the different out-reach events.

These internal collaborations translated to the following in-house and outreach activities:

In-house Activities:

- **MEPI Program; Let's Stay Healthy, Kuwait: 14th Jan.:** Ms. Samar delivered a lecture on Exercise Physiology to 40 students and 2 teachers from New English High School.
- **School Awareness Program in coordination with PR & Media on 18th Jan.:** 12 special needs students and 8 teachers from Dasman School.
- **MEPI Program; Let's Stay Healthy, Kuwait: 20th Jan.:** Ms. Samar delivered a lecture on Exercise Physiology to 18 students and teachers from British School Kuwait.
- **MEPI Program; Let's Stay Healthy, Kuwait: 28th Jan.:** Ms. Samar delivered a lecture on Exercise Physiology to 20 male students from Sabah Al Salem High School for boys.
- **MEPI Program; Let's Stay Healthy, Kuwait: 03rd Feb.:** Ms. Samar delivered a lecture on Exercise Physiology to 20 students and 2 teachers from Al Daher High School for boys.
- **MEPI Program; Let's Stay Healthy, Kuwait: 04th Feb.:** Ms. Samar delivered a lecture on Exercise Physiology to 18 students and 2 teachers from Hadiya High School for girls.
- **MEPI Program; Let's Stay Healthy, Kuwait: 11th Feb.:** Ms. Samar delivered a lecture on Exercise Physiology to 18 students and 2 teachers from Abdullatif Alghanim High School for boys.
- **MEPI Program; Let's Stay Healthy, Kuwait: 14th Feb.:** Ms. Samar delivered a lecture on Exercise Physiology to 20 students and 2 teachers from Ajial Bilingual School for boys.
- **MEPI Program; Let's Stay Healthy, Kuwait: 15th Feb.:** Ms. Samar delivered a lecture on Exercise Physiology to 20 students and 2 teachers from Ajial Bilingual School for girls.
- **School Awareness Program in coordination with PR & Media on 17th Feb.:** Students from Anjafa Elementary School.

- **School Awareness Program:** An Exercise session was delivered to Jaber Al Ahmed High School boys on April 6.
- **School Awareness Program:** Exercise session delivered to Kuwait bilingual school's 30 boys on Oct. 9.
- **School Awareness Program:** Exercise session delivered to Jaber Al Ahmed school for boys-21 boys on Nov. 3.
- **IDF-3 Day Basic Diabetes Training Course for Healthcare Professionals:** Ms. Samar delivered the Physical Activity session on March 02, 23 & 30, April 6, and Oct. 27.
- **World health Day:** Ms. Samar & Mr. Moayad participated in the mobile clinic on April 6.
- **Arjan Camp:** Exercise session delivered to 20 children on June 23.
- **Diabetes Day Event:** Performed the 3-minute step test on more than 40 individuals who visited the MFC booth on 17th Nov.

Out-reach Activities:

- **The First Gulf Conference of Comprehensive Care for the Elderly in Collaboration with MOH:** attended by the MFC manager on March 13.
- **School Awareness Program:** MFC manager visited Rawd Al Salheen School on 14th April as part of world health day event to promote MFC services.
- **Family Medicine Health Day:** Attended booth on Sep. 28.
- **KPC Health Day Event:** Participated in DDI booth-administered the rapid assessment of physical activity on booth visitors on Nov. 28 and promoted MFC services.
- **MOH Diabetes Day Celebration:** Booth participation to promote MFC services, and recruit participants for KIDSS research project on 30th Nov.
- **Mubarak Hospital Diabetes Day Event:** Booth participation to promote MFC services and recruit participants for KIDSS research project on 6th Dec.

MFC serving on committees:

- **The Emergency and Disaster Preparedness committee:** Mr. Moayad represented the MFC in all Emergency Codes committee meetings.
- **The Infection Control Committee:** Ms. Ruby is the IC link at MFC. Participation aims to ensure that MFC continuously meets international guidelines and regulations of controlling the spread of infections. The MFC manager was added as a member in this committee in Nov.
- **Media Awareness Committee:** Ms. Samar serves on this committee with other DDI colleagues in order to help plan and implement a media awareness campaign for DDI.

- Little Plato Committee: Ms. Samar serves on this committee to contribute to planning the way forward for a DDI-created children`s magazines.
- Website Committee: Ms. Samar serves as MFC rep. on the website committee.
- Office 365 Champions Group: Dennis Taliping serves as the MFC champion.
- Quality and Safety Committee: Ms. Samar serves as a member.

Professional Developments and other In-Service Sessions:

Internal PD:

- Exercise for the Osteoarthritic knee members was delivered to the staff in January.
- Discussion circle on exercise and weight loss on Feb 1st.
- Kinesio Taping on 6th April.
- Physical Fitness- lecture was delivered to the Nursing Department by Ms. Samar on April 28.
- Swimming lessons were delivered by Ms. Victoria to all MFC female staff on 11th May.
- Fitness Assessment on how to measure 1 RM on July 12.
- Orientation for nutrition interns: on June 20 and July 28.
- Orientation session for the nurses on Oct. 31.
- Exercise and Diabetes lecture delivered to the new fitness instructor by the MFC Manager.
- Fitness assessment on Functional Assessment of the older adults on Nov 7.

Professional Development:

- Smart Moves Program Training (via Skype) on March 3 & 10 - attended by Ms. Samar.
- Public Health Seminar on March 12 – attended by Ms. Samar.
- KPI workshop on 9th March – This workshop was provided by KFAS and was attended by Ms. Samar.
- CPET Training was conducted by Averroes Company and was attended by Ms. Samar, Dr. Khalid & Ms. Ruby on 11th April.
- KIDSS research project training session delivered by Ms. Mary Savoy via skype, attended by Samar on May 12.
- International Conference on “Women in Science & Technology for the Developing World” attended by Ms. Samar on 17th & 19th May.
- “Enterprise Risk Management Workshop” was attended by Ms. Samar and Mr. Dennis on 23rd May.
- “Communication Skills” course attended by Ms. Maria Bada on 23rd, 24th & 25th May.
- Basic Excel Training was attended by all MFC staffs in August.
- Advanced Excel attended by the MFC Manager, Ms. Leaticia, Mr. Dennis, Ms. Ruby and Ms. Victoria.

- Behavioral Modification Workshop at the Kuwait University Faculty of Dentistry on 1st September attended by MFC Manager.
- ACI session for HC Professional Program attended by Ms. Samar on 13th, 14th, 15th Nov.
- Orientation on Nutrition and Diabetes Education attended by Mr. Juan Fortunato.
- BRG Workshops attended by Ms. Samar on November 1, 2 & 8.
- GCP certifications completed by all staff.

III. SUMMARY:

The MFC started 2016 with the goal of increasing numbers of new members joining, as well as membership renewal, improving member attendance, increasing revenue, reducing operational cost, positively impacting the health and well being of its members, delivering new group classes, increasing engagement in research, as well as contribution to health awareness activities. MFC has been successful in meeting its goals.

I hope that this report meets your expectations. For any further inquiries, please do not hesitate to contact me.

Nutrition

1. GENERAL UPDATE ON THE DEPARTMENT:

The Nutrition Department continued working throughout the year 2016 targeting four areas.

- 1- Training
- 2- Raising nutrition awareness
- 3- Conducting research
- 4- Offering medical nutritional therapy for management of diabetes and its complications.

The administrative, operational, clinical, educational, training, and research services are provided by the same manpower from 2015 with no additional recruitment or secondments;

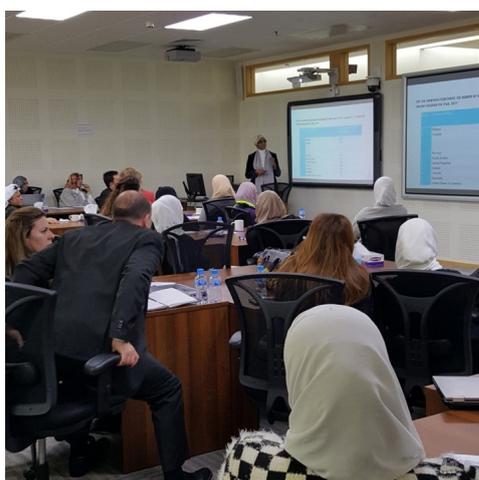
- 1 Director (PhD. Nutrition, Teaching Diploma in Health, Education - Honorary Faculty of University of Dundee)
- 1 Senior dietitian/ team leader (MSc. in Diabetes Care in diabetes and Management – Honorary staff associate)
- 1 nutrition projects coordinator (MSc. in Nutrition)
- 2 dietitians (BSc. in nutrition)
- 1 chef

The Nutrition Department continued offering high quality services deserved by our clients attested for by numerous (10) certificates of appreciation to our team members.

2. OVERVIEW OF THE DEPARTMENT::

The Department of Nutrition was involved with several activities, projects, research collaborations and services. On training professionals dimension 322 healthcare professionals benefited from six different programs offered by members of the Nutrition

department, along with three nutrition students that were offered an observation/training internship supervised and supported by the Nutrition Department. While on the raising nutrition awareness dimension; 46 healthy eating cooking sessions served around 350 customers for the public or as a part of supporting research. The Department participated in at least two local exhibitions. The nutrition department continued to host and visit schools to promote healthy eating among students and teachers with



20 participations. Two department members ran two seasons of successful TV series on national Kuwait TV named “Diet Myths” which is rated as one of top three shows followed on KTV2; a total of 101 participations in TV programs, interviews, and other media and social media were covered by the Nutrition Department. The research programs are still active and preceding slowly but surely, namely the AGDAR study. Recruiting children is proving challenging, given school days workload and holidays travel. Additionally, three members of

the Nutrition Department are co PI and co investigators on another research study KIDSS which targets children between 13 &17 years of age. Also, three members are PI and co investigators on two food knowledge validation studies, one for children and one for adults. As for the clinical services; over 1432 consultations were provided throughout the year for adults and children visiting DDI in one on one face to face manner. While over 50 individuals were seen through six group sessions, research programs and education programs designed for patients.

3. DETAILS OF EACH PROJECT:

Training professionals: The Nutrition Department offered as stand-alone and/or collaborated with other departments in taking part in delivering one or several sessions for health care professionals through six programs throughout the year of 2016. These activities differed in nature and duration; methods and modes of delivery ranged from presentations, participation in conferences, holding workshops and offering shadowing services for departmental activities serving over 322 trainees. These programs were designed and specially tailored to develop skills and competencies of dietitians, physicians and other healthcare providers and ranged in duration between one day and one month. These activities are 1) Training around 80 healthcare professionals enrolled in University of Dundee program in the Modern Diabetes Care Module (two different sets of lectures).



2) Training four batches of nurses and dietitians in a program offered by the Education and Training Department applying the International Diabetes Federation curriculum for diabetes educators. 3) Offering an orientation session for Cuban nurses who have recently joined DDI with regards to nutrition activities. 4) Taking part in Dasman Knowledge Exchange and CGM workshop. 5) Accepting an invitation from KU-Medical school to take part in the Medical School Day (MSD) 6th year to introduce carbohydrate counting to around 75 medical students. 6) Presenting at the Diabetes & Nutrition Symposium held by Ministry of Health. Also, the Nutrition Department continues to support a Kuwaiti, PhD student from Reading University conduct her study at DDI named Eat Well Q8.

Raising nutrition awareness: The Nutrition Department, through its experimental kitchen



manned by our talented chef and a professional dietitian successfully delivered over 40 cooking sessions of local and international cuisine modified in terms of adapting healthier cooking techniques or replacing some food ingredients with healthier ones. A total of 350 attendees benefited from these classes which were offered to the public and research participants, through in-house or school outreach programs. Cooking activities supported research programs which required cooking as an integral part of the research

(AGDAR) or support of carb counting food demos (DAFNE and Dundee). Raising nutrition awareness also was demonstrated through lectures and seminars held in in-house or outreach activities in both governmental and private schools in addition to supporting events held at different health care facilities. Data was collected from schools visited targeting to capture eating habits and food consumption patterns. The Nutrition Department continued to participate in media initiatives to promote healthy eating or management of different ailments and diseases through different dietary approaches. Participations were spread out throughout the year via local radio shows and programs, national TV channels like KTV1. Also the Nutrition Department covered two seasons of a daily show on KTV2 named “Diet Myths”, which had high rating as one of the top three watched, this year the Nutrition Department filmed over 101 episodes and interviews. Also, the Nutrition Department held a campaign the highly acclaimed, highly anticipated Gergean event which was appreciated and welcomed by children with diabetes and their parents. The Nutrition Department also participated in the Dasman Healthy School Canteen Campaign which was held in collaboration with School Health (MOH) and Ministry of Education in promoting Healthy school canteens through art.

Research on both departmental level or in collaboration with other departments; research continues to have priority over all activities. The “AGDAR study: The Use of Cooking Classes, Structural Nutrition Education and Goal Setting Intervention to Improve Health and Quality of Life in Overweight and Obese Children and their Families” research study is progressing as two intervention groups have been investigated and will be followed up as per research protocol. The Nutrition Department secured acceptance and ethical approval of two food knowledge validation studies; one for adults and one for children. The Kuwait Adult Food Validation Questionnaire achieved to date over 70% of data collection phase and will continue to work on data entry and analysis targeting to submit a manuscript in 2017. The Kuwait Children Food Knowledge Questionnaire achieved around 20% of its target participants and hoping to also submit a manuscript around the 4th quarter of 2017.



Additionally, team members of the Nutrition Department who are co-investigators and co- PI on the KIDSS study which adopted and adapted smart moves bright bodies program and customized it to work for culture in Kuwait, have completed two groups intervention and started two more groups toward the end of 2016. This study will require two more years to meet the required sample size. Also, the Nutrition Department delivered two oral presentations in an international conference presenting their AGDAR work and the validation study.

Clinical: Dietetics services offered 1432 consultations to children and adults with diabetes in one on one consultations, overweight and obese staff members and MFC clients spread out on a daily basis. Group sessions covered needs of insulin pump users, for teens and adults. Over 180 food items were photographed and food analysis was performed to help present in an educational application about content of carbohydrates and calories in local and commonly consumed foods in Kuwait.

4. SUMMARY/ FUTURE PLANS:

The Department managed to achieve its targets and met its key performance indicators set earlier this year on all four key activities. The Department members attended several in-house training programs to improve their skills and update their knowledge, in addition to attending the departmental professional development meetings. Two Kuwaiti dietitians were given the opportunity to attend two overseas courses to develop their skills. The Department wishes to maintain quality services offered, but may have to cut back on outreach programs to support the



institution's financial and manpower challenges. The Department wishes to focus on research activities which will require stretching our limited resources to support the two ongoing research projects and three proposed researches to be submitted. The Department will take every opportunity to report outcomes from other non-research services in publishable formats such as abstracts or share the outcomes in conferences and workshops. The Department will try to seek funding for other non-research activities, such as training healthcare professionals as the need is growing to meet the nutritional management demands of overweight, obese, pre-diabetes and people with diabetes. The Department will engage in activities attempting to establish financial stability through offering cooking classes for a charge in 2017. Also, the Department will engage in a joint activity with MFC to measure its social return on investment, which may expand to other projects in the future.

Health Information Management

HIM GENERAL UPDATE:

The Department of Health Information Management (HIM) at Dasman Diabetes Institute has faced huge challenges. During the increased staff shortage, we continued to assist the various activities and initiatives for the 2016 year despite the increased number of patients and research. A hotline service was introduced to improve the Department's efficacy & optimize services. The Department has continued to support the mission of the Institute by promoting outreach activities involving outreach campaigns, as well as expanding the research programs of the Institute. In addition, the Department was critical in developing an extra number of research clinics, as well as developing the staff skills and knowledge by conducting workshops and training. Furthermore new patient's statistics (Pre-registration & active files) to monitor the new number of patient increase.

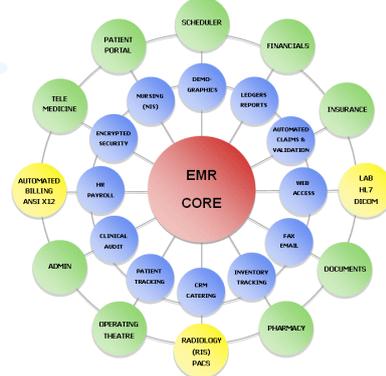
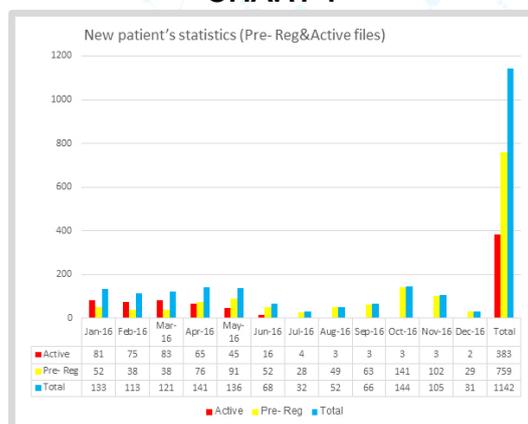


Chart 1 illustrates the new patient's statistics (Pre-registration & active files).

HIM team had several accomplishments for this year as mentioned below:

- (A) Solved KBHR's major weakness with KBHR administrator and implemented the new KBHR updated version.
- (B) Generated new reports and statistics.
- (C) Focused on staff training & workshops to update all staff with all clinics procedures.
- (D) Collaborated with other DDI departments on studies, researches and programs.

CHART-1



- (E) Focused on reducing NO SHOW patient's appointments for all DDI clinics.
- (F) Performed the instructions for opening new patient's files and referral system.
- (G) Updated HIM policies according to DDI policies and created patient's suggestion and complaint policies and procedures, suggesting and proposing new policies for patient's medical reports.
- A. Assisted KBHR administrator to solve the weak points and implemented the new KBHR updated version.
 - 1. Added the proper communication channels with HIM team to appointment list.
 - 2. Fixed the clinics templates to be able to conduct smart appointment searching.
 - 3. Fixed the errors of interfacing KBHR to LIS lab system for lab requests and results.
 - 4. Overriding of the scheduled clinics templates to fix the makeup, and reschedule clinics without changing the original clinics schedule timing.
 - 5. Suggested to create note field on the electronic waiting list.
 - 6. Performed the new update for KBHR.
- B. Generated new reports and statistics.
 - 1. Created new patients (Pre-registration & Active) Daily, monthly and yearly reports.
 - 2. DNK patient's appointment report.
 - 3. Created general and specific statistics for each physician.
 - 4. Patients profile update report.
- C. Focused on staff training, workshops and rotation to update all staff with all clinics procedure.
 - 1. Three of HIM staff attended international workshops to develop HIM staff knowledge and skills including handling patients complaints, solving problems, changing strategy, preparing statistics, performing skills.
 - 2. Exposure to all clinics (adult diabetology, nephrology, podiatry, pediatric) for all HIM staff to develop all experience across the field.
 - 3. Managed all patient's requirement at one stop rather than referring patients across the clinics to improve efficacy.
- D. Collaboration with other DDI Departments, research, programs and campaigns.
 - 1. Collaborated with PR Department to spread DDI mission within MOH clinics.
 - 2. Arranged and assisted DAFNE program activities.
 - 3. Assisted the fitness center for BE DASMANI program.
 - 4. Assisted with sleep apnea Research.
 - 5. Prepared and assisted with ENT Dr. Abdelmohsen's research.
 - 6. Arranged and assisted the podiatrist's research.
 - 7. Collaborated with Education Department to arrange school visits.
 - 8. Coordinated the MS researches.
 - 9. Coordinated NODAT study with Education Department.

10. Assisted on DATES study.
 11. Coordinated the Nutrition researches.
 12. Assisted Pediatric researches (Dr. Azza).
 13. Coordinated the ION study (clinical trial project).
- E Focused to reduce NO SHOW patient's appointments for all DDI clinics.
—All patient's appointments in all DDI clinics reminded and confirmed.
- F Performed the instructors for opening new patient's files and referral system.
—Created the new procedures for opening new patient's files.
- G Updated HIM policies.
—According to DDI policies and creating patient's suggestion and complaint policies and procedures, suggested and proposed new policies for patient's medical reports.

HIM FUTURE AIMS:

- Audit and update patient's files.
- Refresh and update patient's forms.
- Track and investigate reasons for "no show" appointments.
- Track clinics appointments waiting list.
- Update and refresh HIM policies.
- Measure patient's satisfaction with HIM performance.
- Collect patient's emails to prepare for patient's portal.
- Enhance and assist DDI researches.
- Collaborating with international health information organizations to updating and following all the international HIM studies and research.
- Focusing on improving the hospitality spirit and collaboration as team work for all HIM staff by arranging more workshops.
- Creating a specific standard for HIM services according to DDI policies and procedures.
- Creating specific standard for HIM services according to DDI policies and procedures.
- Proceeding to prepare smart phone application for patient's self-services.
- Collaborating with MOH to train MOH HIM staff in DDI.
- Conducting HIM research on Data security.
- Improving the appointment scheduling hot line to assist patients for ensuring an easy and fast way for rescheduling their appointments.

Podiatry

1. GENERAL DEPARTMENTAL INFORMATION

The Podiatry Department is functioning with three full time Podiatrists and is complemented with six Registered Nurses.

2. CLINICAL OUTCOMES

From 1st January 2016 to 19th December 2016, the Podiatry Clinic had 3936 consultations (Table 1; Graph 1). These figures do not include missed or cancelled appointments however this data will be available for the latter part of next year.

The consultations are broken down as follows; 87% were follow-up consultations, 11% were new patient consultations, and 2% were walk-in patients. On average, we had 328 consultations per month.

Graph 1: Total Podiatry Appointments from 1st January 2016 – December 19th 2016

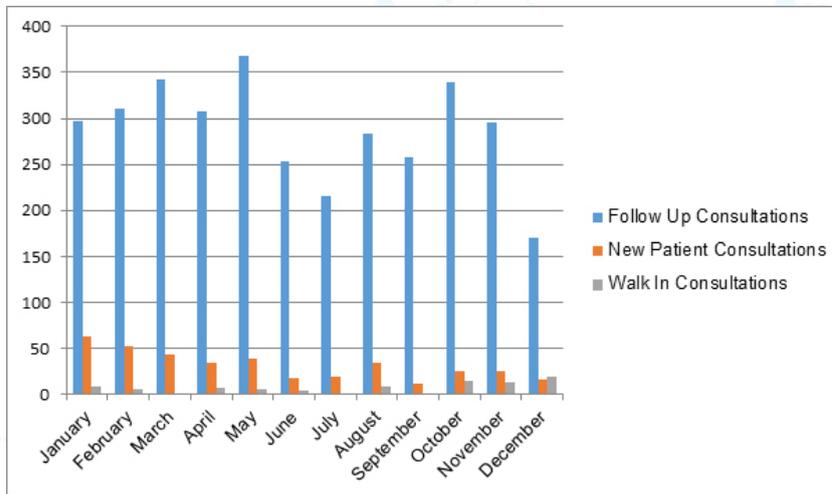


Table 1: Total Podiatry Appointments from 1st January 2016 – December 19th 2016

Month	Follow Up Consultations	New Patient Consultations	Walk In Consultations	Total Monthly Consultations
January	297	63	9	369
February	310	53	5	368
March	342	44	0	386
April	308	35	7	350
May	368	39	5	412
June	253	18	4	275
July	216	20	1	237
August	283	35	8	326
September	258	12	1	271
October	340	25	14	379
November	295	25	13	333
December	170	16	19	205
Total	3440	385	86	3911

The Podiatry Department has treated 212 new Diabetic Foot Ulcers (DFUs) between January 2016 and December 19th 2016, with a healing rate of 55%. This compares

favorably with existing research which reports an average healing rate of 48% at six months. As with last year's statistics, this suggests that the Podiatry Department's DFU healing rates are above the acceptable range. We continue to work with other disciplines such as Diabetologists, from within DDI and MOH, to improve patient outcomes. In addition, the Podiatry Department has also identified 56 patients who have presented with Charcot's Neuro-Arthropathy.

3. CLINIC EFFICIENCY

To enhance efficiency and to ensure that patients with an urgent need to see the Podiatrist and receive a timely appointment, a triage system has been set-up. This means that all new referrals are screened by the designated Podiatrist on a monthly basis and appointments are arranged on a need basis. Patients who come in as walk-in or emergency patient's are reviewed to ensure they do not need urgent treatment i.e. immediate referral to a hospital.

We have also formalized and made clear the referral process to the Podiatry Department from MOH by developing a referral pathway and an easy access referral form, which MOH physicians may complete and send to the Podiatry Department's email account. We have collected information on every patient who attends the Podiatry Department with a DFU, leg ulcer and/or gangrene, osteomyelitis, amputation rates, and re-ulceration. This year we have also collected data on all patients attending with Acute or Chronic Charcot Neuro-Arthropathy as well as documenting a detailed history of patient's smoking habits.

As part of the quality outcomes group, we have identified and developed Clinical Quality Indicators specific to Podiatry, which we will collect from January 2017 and benchmark both internally and externally.

4. WORLD DIABETES DAY NOVEMBER 17TH 2016

The Podiatry Department carried out Diabetic Foot Screenings as part of World Diabetes Day. A total of 69 patients were seen. 71% of patients presented with Diabetes Mellitus whilst 29% were non diabetic. 77% of these patients were presented with foot complications, which ranged from Peripheral Sensory Neuropathy, Peripheral Arterial Disease to a previous history of DFU.

5. EDUCATION

Patient education is extremely important to reduce long term diabetic foot complications and the Podiatry team has developed a patient education presentation which is going to be streamed onto the television in the Podiatry Department's waiting area. This includes information for patients to check their feet daily, treatments for DFUs, Charcot Neuro-Arthropathy and Diabetic Foot risk classifications. We have used visual and written information in both Arabic and English. A research proposal around this is currently being developed to establish whether the multimedia presentation has been successful in improving patient education.

We have finalized a three-day theory course and two-day practical session for MOH Doctors and Nurses which will include an overview of the diabetic foot, long term complications and how peripheral arterial disease, diabetic peripheral neuropathy, poor diabetes control and nephropathy play a vital role in the development and outcome of DFUs.

We have worked with the PR team to develop the Podiatry element of the DDI website. This includes a section on what Podiatry is, treatments offered, possible Diabetic Foot complications and a patient referral pathway system where MOH doctors are able to refer patients with complex Diabetic Foot problems to the Podiatry Department.

6. RESEARCH

The Podiatry Department has been active in developing research proposals with six formal submissions for ethical approval. We are continuing to write further six proposals whilst we await feedback. All three Podiatrists are co-investigators in two ongoing collaborative research studies being carried out currently with the Diagnostic Imaging Centre (Study Numbers RA-044 & RA-033). In addition, we are currently involved in the development of a further three collaborative research proposals with Clinical Lab, Clinical Research Departments and finalizing the Cuban Study (Study Number RA2014-051).

Table 2.: Research Activities

Ongoing Collaborations	Submitted	In Development	Future Ideas
Tibial Artery Intima Media Thickness in T2DM with and without Critical Limb Ischemia comparative study (in collaboration with Radiology).	Epidemiological Study: The Prevalence of Diabetic Foot Complications in Kuwait.	Descriptive Study: The Impact Long Term Diabetic Complications have on patients and their significant others.	Association between Thyroid health and Charcot Neuro-Arthropathy: Kuwait population.
Prospective evaluations of diabetic foot 3T MRI using IDEAL (in collaboration with Radiology).	Is bathing or Showering a risk factor for Diabetic Foot Infection?	Is there an association between Charcot Neuro-Arthropathy and electrolyte levels in Kuwait population?	The relationship between cardio-myopathy and Peripheral Diabetic Neuropathy.
Efficacy and safety of Herberprot-P in patient with advanced diabetic foot ulcer in DDI – Demonstrative Study.	Comparative Cross Sectional Study: Prevalence of Diabetic Peripheral Neuropathy in a sample population of Kuwait compared with global trends.	Comparative Cross Sectional Study: Quality of pedal pulses in a sample population of Kuwait smokers compared to international trends.	Anemia, HbA1c and Diabetic Foot Ulcer healing.

	Retrospective assessment of diabetic foot ulcers 2014-2016.	Comparative Cross Sectional Study: Prevalence of bilateral presentation of Charcot's Neuro-Arthropathy in a sample population of Kuwait compared with global trends.	Determine the maximum pressure threshold in the development of plantar diabetic foot ulcer using computerized gait analysis system.
	Assessment of the evidence of the use and effectiveness of anti-fungals for diabetic foot ulcer infections: a systematic review.		
	A study to determine whether there is a significant association between cigarette smoking and the time taken to heal diabetic foot ulcers.		

Pharmacy

The Pharmacy Unit is responsible and accountable for everything related to medications. The Unit constantly offers help and support for other healthcare professionals and scientists at DDI in order to deliver optimum practices and best services. The services range from dispensing prescriptions till counseling and education through clinics and consultation room. The Unit also has a role in education, public awareness, and research. The Unit worked to organize the workflow, develop new services, achieve the tasks required, become more involved in research, and meet the standards required by accreditation Canada. The Pharmacy Team members gave their best to exceed DDI services for optimum outcome and patient satisfaction.



Currently, the Pharmacy Unit developed four sub-units to be responsible for four major tasks, which are Outpatient (involves clinics and dispensing), Education, Inventory

(involves compounding) and Research. The following pharmacy achievements are the results of these four sub-units:

1. OUTPATIENT:

- In order to minimize medication errors, a double checking system was developed, piloted and implemented during dispensing.
- Two iPads were synchronized with pictures of the pharmacy medications and distributed to the pharmacotherapy clinics to be used as a patient's identification/ educational tool of their medications.
- According to Central Medical Stores (CMS) in MOH instructions, a new system of ordering GLP1 medications was implemented, where a report about the patient's diabetes condition, and a copy of his/her Civil ID is submitted to CMS. The report form has been developed and distributed to HIM staff members.
- New Medication Service (NMS) material were distributed to the pharmacotherapy clinics and the service was implemented.
- After implementing MOH circular regarding Kuwaitis and non-Kuwaitis medications, the pharmacists started seeing non-Kuwaiti patients in the clinics and reconcile their medications in order to identify the medications that goes under the circular as well as give their recommendations regarding alternatives to the physicians.
- Lexi-Comp database has been renewed for one more year (till November 2017).
- The Pharmacy Team is currently working on establishing and piloting a smoking cessation clinic at DDI for optimum patients' service, as well as to initiate research in this field.
- A representative of the Pharmacy Team has been involved in the initiation and training of Microsoft Office 365.
- The pharmacy schedule was modified in order to give more time to staff to focus in research.
- According to the KBHR Clinics Quickstats, the pharmacotherapy clinic statistics for 2016 (till end of August) are summarized below:

Category	Number
Number of Checked-In Appointments	449
Numbers of DNK Appointments	216
Number of New Appointments	239
Number of Follow-Up Appointments	369
Number of Pharmacotherapy Notes	479
Number of Med. Rec. Notes	49

2. EDUCATION::

- The Pharmacy Unit has been involved in training pharmacy students (ex. 4th year), pharmacy graduates, and other healthcare professionals (ex. nursing staff on a monthly basis). The lectures conducted to nurses were about:

- GLP1 medications
- SGLT2 antagonist medications
- The Pharmacy Team enrolled in different workshops and conferences as part of the continuous education program. Also, every two weeks, one of the team member chooses a medical topic to be discussed with the rest of the team as part of continuously educating team members.
- The Pharmacy Team arranged with several pharmaceutical companies in order to conduct presentations regarding their medications to the team. The lectures conducted by the pharmaceutical companies were about:
 - Trulicity pen
 - Bydureon pen
 - Invokana tablets
 - Forxiga tablets
 - Humalog mix 50 pens
 - Galvus tablets
 - Toujeo pens
- The Pharmacy Team continues to spread patient awareness when it comes to diabetes and medications via media and social networks such as TV, Radio, and Instagram.
- The Pharmacy Team has been involved in orienting 1st and 2nd year pharmacy students (30 students) about the role of the pharmacist as a healthcare professional, as well as the pharmacists role, specifically at DDI.
- A Pharmacy Team member conducted two presentations regarding diabetes management as a part of the IDF Basic Diabetes Course, which was given two times for both nursing and laboratory staff.
- The Pharmacy Team met with the Life Science Academy team (LSA) to discuss future educational collaborations in the presence of the CMO, Dr. Ebaa AIOzairi.
- The team met with Dr. Moreau, the Dean of Faculty of Pharmacy, and Dr. Lemay, Faculty Member, at DDI to discuss future collaborations in terms of education and research.
- The team participated at DDI World Diabetes Open Day and managed to bring volunteering students from the Faculty of Pharmacy.

The following table shows the educational activities that the pharmacy team members attended during 2016:

No.	Name of Event	Venue	Time	No. of Pharmacists attendees
1	IDF Basic Diabetes Course	DDI	3 days/week during the whole month of March	All
2	Board of Pharmacy Specialty (BPS) Preparatory Course	Faculty of Pharmacy, Kuwait University	4 days/week during the whole month of April	6
3	iPro2 & i-port Training Workshop	DDI	19 th June, 2016	3
4	CGM with Dexcom G4 Platinum Workshop	DDI	1 th June, 2016	2
5	Dasman Knowledge Exchange & CGM Workshop in Collaboration with Medtronic and Tareq Co.	DDI	26 th – 27 th January, 2016	2
6	Clinical Research Methodology and Statistics for Non-Statistician Workshops	Millennium Hotel and Convention Centre, Kuwait	30 th – 31 st May, 2016 and 1 st – 2 nd June, 2016 respectively	1
7	Communication Skills by Baker Tilly	DDI	May 2016	1
8	6 th Pharmaceutical care conference	Muscat, Oman	2 nd – 4 th February, 2016	1 (as a speaker)
9	KFH Ramadan Media Campaign	KFH Headquarter	9 th June, 2016	1
10	Enterprise Risk Management Workshop	DDI	24 th May, 2016	2
11	Microsoft Excel Basic Level Training Course	DDI	18 th – 21 st July, 2016	2
12	Roche Accu-Check Combo Insulin Pump - CPT Training & Examinations	DDI	30 th August – 1 st September, 2016	3

13	Smoking Cessation Workshop	Faculty of Dentistry, Kuwait University	1 st September, 2016	3
14	Global Pharmacy & Healthcare Services Research Summit	Dubai, UAE	30 th September - 1 st October, 2016	2
15	Microsoft Excel Advanced Level Training Course	DDI	3 rd – 20 th October, 2016	3 (1 pharmacist per week)
16	BLS Advanced Level for Becoming Instructors	DDI	10 th November, 2016 - 6 th December, 2016	1
17	World Diabetes Day Outreach Activity	Faculty of Pharmacy	16 th November, 2016	1 (booth)
18	World Diabetes Day Outreach Activity	Salwa Hall, Marina Hotel	30 th November, 2016	1 (booth)
19	Microsoft Office 365 and Yammer Training	DDI	7 th December, 2016	5
20	Research Seminar: What You Need To Know About Writing Research Articles?	DDI	13 th December, 2016	1
21	Smoking Cessation Workshop	DDI	13 th December, 2016	5
22	New HR System Training	DDI	22 nd December, 2016	4

3. INVENTORY:

- The Pharmacy and its store were rearranged and reorganized based on sound alike, look alike, and expiry dates.
- After attending the enterprise risk management workshop, the returned/expired medications system was revamped to minimize the rates of returned and expired medications by setting risk indicators regarding this matter.
- Quality indicators were set to measure and control returned/expired medication's rates. These were set as part of the quality outcomes workgroup tasks.
- Results of quality and risk indicators to be documented monthly in an excel sheet.
- The contents of the emergency crash carts has been reviewed and a new table of the items was created and distributed among the clinics.
- After implementing MOH circular regarding Kuwaitis and non-Kuwaitis

medications, the Pharmacy Team is in the process of implementing a new stock management system in collaboration with the IT Department to ease the workload as well as to be less time consuming.

- GLP-1 medications were introduced to DDI formulary at KBHR and their stock levels, as well as number of dispensing times per patient were additionally recorded in an excel sheet.
- SGLT2 antagonist medications were introduced to DDI formulary and dispensed according to our new dispensing rules and regulations.
- The Pharmacy Team is following up with the CMS regarding the availability of certain research reagents that are needed in DDI. Currently the Team is waiting for the finalized list from the Research Department.
- The Pharmacy Team met with Hello Health Team to discuss general opinions, feedback and concerns regarding the current pharmacy electronic system as well as discussing areas for possibilities and improvements.
- The annual inventory committee from CMS visited the pharmacy on December 12th, 2016 for the medical equipment and December 13th, 2016 for the medications and consumables. Stock levels were checked with no significant variations.

4. RESEARCH:

- The Pharmacy Team came up with a few research proposals and continues to do so in order to be submitted to higher management.
- The Team had a brainstorming session with Dr. Abdelmoneim Ismail Awad, Associate Professor of Clinical Pharmacy at the Department of Pharmacy practice in Faculty of Pharmacy, in order to identify what pharmacists' need to establish a research unit, conduct research as well as discuss the possibility of future research collaborations between DDI pharmacy and the Faculty of Pharmacy.
- Three team members are currently working on a proposal to revive the Diabetes Kuwait Resource Center (DKRC) in order for it to be more research centric.
- The Pharmacy Team constantly collaborates with other departments and researchers in order to store and monitor their investigational products within the pharmacy.
- The Pharmacy Team met with Dr. Mohammad Abdulhamid, Head of Research affairs at the Faculty of Pharmacy, to discuss future research collaborations.
- The Pharmacy Team is working on collaborating with the Clinical Research Unit through signing in the different research groups within their unit.
- The following table summarizes the research projects that the Pharmacy Team has been involved in during 2016:

Name	Research Name	Research No.	Role
Ahmad AIDhuwaihi	Comparison of laboratory changes, food intake and metabolic profile in patients with obesity and type 2 diabetes mellitus: before, during and after taking Aphoeline Brake.	RA2014-019	Co-investigator
Hamad AISultan	Double blind, placebo controlled parallel design randomized phase 2, a trial evaluating the potential activity and safety of hMaxi-K Gene transfer in male erectile dysfunction.	ION 04-ED	Co-investigator
Hamad AISultan	Double blind, placebo controlled, randomized, multicenter study to assess the safety and efficacy of study drug (Exenatide) once weekly in adolescents with type 2 diabetes.	D5551C00002_ DM type 2 Study	Co-investigator
Amina AIQassar	Magnesium treatment of inflammation in disorders of glucose homeostasis.	RA2012-013	Co-investigator (Done)
Heba Abduo	Outcome of Diabetes Education Among Renal Transplant Recipients With New Onset Diabetes After Transplantation (NODAT).	RA2014-049	Co-investigator

OTHER TASKS AND ACTIVITIES:

1. Accreditation Canada:

- The Team follows the quality standards set by Accreditation Canada when it comes to medication management.
- The Team received the new customized standards for medication management to be reviewed by the Team. The regular medication management meetings will be resumed in the upcoming weeks.
- The Team is in the process of developing and reviewing the policy and procedures of the Unit according to the new customized standards.

- Environmental care rounds were conducted for both the pharmacy and medical stores. Feedback was shared and action points were determined.
- The Team attended the ACI workshops, which were held on October 9th till 13th and November 13th till 17th.
- The team was reshaped to include 6 members:
 - Chairperson: Ahmad AIDhuwaihi
 - Team Leader: Saud AlJenaei
 - Facilitator: Hamad AlSultan
 - Member: Basil Dawwas
 - Member: Sabina Sabau
 - Member: Abdulrazak Moideen

2. Pharmacy & Therapeutic Workgroup:

- The addition of GLP1 and SGLT2 medications did not go through the workgroup as it was the initial agreement among the workgroup since DDI is a diabetes centric institute.
- A meeting will be held in the upcoming days to discuss DDI formulary after the implementation of the MOH circular, as well as review new medication requests.

3. Quality Outcomes Workgroup:

- Two team members are currently involved with the quality outcomes workgroup, where quality indicators were designed, implemented and monitored in order to assure quality standards in both the pharmacy and pharmacotherapy clinics work.
- Results of quality indicators to be documented monthly in an excel sheet.

4. Others:

- IPPs for 2016 were reviewed, discussed and approved with each team member.
- The medical CV's as well as medical personal research were updated for all team members.
- The pharmacy's budget, manpower plan and work plan development are currently in progress.
- The Pharmacy Unit attended the Berkeley Research Group (BRG) workshops.
- The appraisals of 2016 and the IPPs for 2017 were discussed and finalized amongst the pharmacy team members.
- The Pharmacy Team participated in designing the new structure and themes of the Medical Division. They also took part in participating by signing up in the different division teams, such as the Quality and Safety, Branding, as well as the Medical Records teams. They are also willing to be involved in the scientific council team if it is needed in order to gain proper knowledge in the research field.
- The pharmacy work plan, KPIs, manpower FTE for 2017 was prepared and revised.

Diagnostic Imaging Center

OVERVIEW

The year 2016 was a full operational year with the Diagnostic Imaging Department functioning at its level best with various constructive activities.

In a very deliberate way the Diagnostic Imaging Center has made the changes needed to re-energize the operations. We have guided our efforts with the priorities we set out in 2015.



DIC POLICIES & PROCEDURES:

Policies & procedures for Diagnostic Imaging Center was reviewed and updated in November 2016.

NEW STAFF:

Following staff joined Diagnostic Imaging Center in the year 2016:

S.No.	Name	Designation	Full/Part Time
1	Dr. Khaledah Dashti	Consultant Radiologist	Part Time
2	Dr. Mohammed Farag	Radiology Specialist	Part Time
3	Dr. Ahmed Mohammed	Radiology Specialist	Part Time
4	Ms. Sajan Idiculla	Technologist	Full Time

ACCOMPLISHMENTS:

- Quality Improvement meeting was held in which safety officer (Dr. Anant Mashankar) gave a briefing on radiation safety.
- Four Medical Emergency Response Team (MERT) drills conducted.
- Risk Management workshop was attended by three members of DIC. DIC risk registry report has been submitted to risk manager of DDI.
- In line with DIC orientation policy, an orientation program was conducted for new staff, Technologist (Ms. Sajan Idiculla), Consultant Radiologist (Dr. Khaledah Dashti) & Radiology Specialists (Dr. Mohammed Farag & Dr. Ahmed Mohammed).
- Key performance indicators were measured and final work plan progress report was submitted to the concerned department.
- Six DIC administration meetings were held this year.
- Analysis on patient satisfaction questionnaire was done and recorded.
- Patient complaint box was monitored on a monthly basis.
- Statistics of studies performed in DIC was maintained.
- Three Accreditation Canada International meetings were conducted.
- Investigations for the patients from Afya Health Insurance were started in the last month of December 2016.

RESEARCH PROJECTS:

- Two ongoing DIC internal research projects are being continued by the radiologists and staff of DIC:
 - Tibial intima media thickness in Type 2 Diabetes
 - Evaluation of diabetic foot with 3T MRI using IDEAL
- DIC is actively involved in the following collaborative researches:
 - Kuwait Well Being Project (RA 2010-001)
 - Open-label multicenter, multi-dose study of the effect of BG00012 on MRI lesion and pharmacokinetics in pediatric subject with relapsing-remitting multiple sclerosis aged 10 to 17 years. (RA 2015-009)
 - Comparison of laboratory changes, food intake and metabolic profile in patients with obesity and Type 2 Diabetes Mellitus: before, during and after taking Aphaoline Brake “A Pilot Study” (RA 2014-019)

QUALITY ASSURANCE AUDIT:

A specified audit named “Quality Assurance Audit” was done by Faiza Muhammad, Priya Sujith, Asmaa Abdulhameed, Sajan Idiculla & Ahmed Awwad. Five key areas were selected for audit representing important functional elements of DIC which are as follows:

- Disinfection & cleaning
- Quality control
- Patient & personnel safety
- Technologist work pattern and workflow
- RIS/PACS management

CLINICAL RADIOLOGY:

The following table shows the number of studies performed per modality during the year 2016:

Modalities	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
MRI	349	421	372	416	1558
CT	25	26	19	37	107
General X-ray	79	74	62	62	277
BMD	74	54	29	56	213
Ultrasound	100	63	55	77	295
Parkflo	22	14	18	22	76

CONFERENCES, TRAINING PROGRAMS & ACADEMIC MEETINGS

The following conferences and workshops were attended by DIC staff in June 2016:

1. Dr. Abdelmohsen Bennakhi attended ESR Radiology Conference and Oncology “Imaging Course” in March and June 2016 respectively.
2. Dr. Anant Mashankar attended “Asian Musculoskeletal Society & The Arabian Gulf Society of Skeletal Radiology” in February 2016. He also attended “Osteoporosis Essentials 2016” in May 2016.
3. Ms. Faiza Muhammad Siddique (RAC) completed a Radiology Business

Administration course in March 2016.

4. Ms. Jency Varghese and Ms. Alyaa Almaraghi attended “Osteoporosis Essentials 2016” in May 2016.
5. Ms. Jency Varghese, Mr. Ahmed Awwad and Dr. Anant Mashankar attended a “Radiation Protection Course” in October 2016.
6. Tracer Methodology, Patient Safety and ROPs, and Quality Improvement sessions conducted by Healthcare Accreditation Professionals (HCAP) ACI was attended by Dr. Abdelmohsen Bennakhi, Dr. Anant Mashankar, Ms. Faiza Muhammad, Ms. Alyaa Almaraghi & Ms. Jency Varghese.
7. Various academic presentations were given by radiologists, technologists as well as staff members to enhance the professional standards.

Nursing

The Annual Report is built on the accomplishments, activities and achievements by nurses across all units and specialties during the year 2016.

Nursing is a profession that combines science and art to care for patients and their families. Our care system focuses on collaboration with our physicians and colleagues, integrating technology, resources, safety, and quality outcomes.

We have specified our goal since 2015 “To provide safe, effective, efficient, quality nursing care to patients of DDI through competent and accountable staff focusing on a holistic patient care approach within the integrated model of care at DDI and actively participate and contribute in educational, research and health promotion activities.”

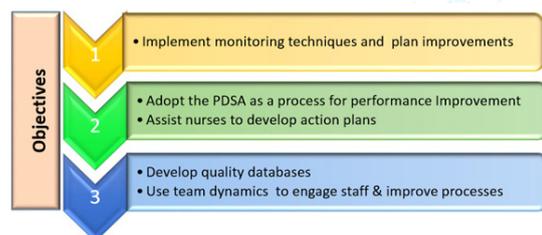
Our objectives were chosen to:

1. Provide safe high quality patient care
2. Enforce positive work environment
3. Enhance professional development and engagement in research endeavors
4. Augment productivity through efficient resource utilization
5. Abridge system processes



To achieve our objectives, many initiatives were put in place in 2015 and continued during 2016 to build a core team of nurses prepared to contribute to the vision and mission of DDI.

Our main focus in 2016 was to build the knowledge, verify the competence, develop the abilities, stretch the boundaries, motivate and bring the best out of every staff member in preparation for the future.



This demanded commitment, lots of effort, mentoring and coaching, ownership and dedication.

The report will present the departmental achievements and successes and will identify opportunities to capture for future initiatives.

“Success is not what we accomplish, it is what we inspire others to do.”

NURSING QUALITY PROGRAM:

The program is facilitated by the senior staff nurse together with staff nurses acting as quality champions. The goals of the program were set to:

- Study areas for improvement and implement actions using different approaches.
- Structure a process of systematic monitoring to identify areas of improvement and establish mechanisms to maintain the standards of care.

Year 2015 2016
VS 96.05% 99.4%



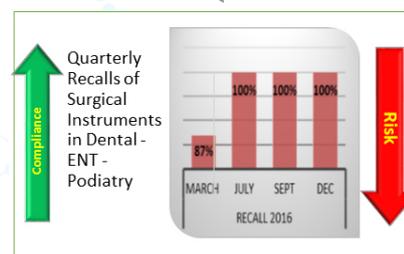
Pain Compliance



52% patients with High Risk

93.86 % compliance

Fall	Q1	Q2	Q3	Q4	Annual
% Compliance	90	92	96	97.46	93.86%
Documentation	83.8	88.7	89	99	90
Incidents	2	2	0	0	4



Tracking of Sterilized Instruments - Podiatry 2016-

	Q1	Q2	Q3	Q4	Annual
% Compliance	95.39	98.40	100	98.6	98%

ALLERGY DOCUMENTATION REVIEW 2016

Month	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Total no. of files reviewed	55	55	55	55	55	55	55	55
Total no. allergy documented	11	19	13	20	15	23	10	23
Total no. allergy status missing	44	36	42	35	40	32	45	32
% of allergy documented	20%	35%	24%	36%	27%	42%	18%	42%
Total no. of allergen identified	1	6	3	4	3	9	3	11
% of allergen identified	9%	32%	23%	20%	20%	39%	30%	48%

Allergy Causes:

Medication Food Environment Non-Specific
34 3 2

Allergy Audits:

Allergy	Q1	Q2	Q3	Q4
% Documentation		29%	34%	27%
Department Involved		Pharmacy	Pharmacy	Pharmacy

The Action Plan included

		Department of Nursing											
		Infection Control In- Service Lecture Schedule FY 2016											
SN	TITLE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
1	Hand Hygiene Practice Revisited & Going Forward	■	■	■									
2	Fundamental Principles of Infection Prevention & Control Standard Precaution For Injection Control				■	■	■						
3	Fundamental Principles of Infection Prevention & Control Transmission Based Precaution							■	■	■			
4	ALL ABOUT: Blood Borne Pathogens										■	■	■

No.	Type	No. of Incidents
1	Clinical Administration	0
2	Clinical Procedure/Process	7
3	Documentation	9
4	Health Care Associated Infection	1
5	Medication & IV Fluids	0
6	Blood/Blood Products	0
7	Nutrition	0
8	Oxygen/Vapour Gas	0
9	Medical Device/Property/Equipment	9
10	Behaviour	0
11	Patient Accident	2
12	Infrastructure/Building/Fixtures	0
13	Resources/Organizational Management	1
Total		29

IC Program:

- Staff Vaccination
- Hand Hygiene Compliance
- Education
- MRSA process
- Education for House Keeping
- Monitoring water testing
- PPE
- Waste Management
- Sharp safety
- Chemical Spill management
- Environmental Rounds

New categorization adopted for capturing incidents. It guides to the area of improvement needed.

Many of these incidents were followed up with an action plan to close the gap.

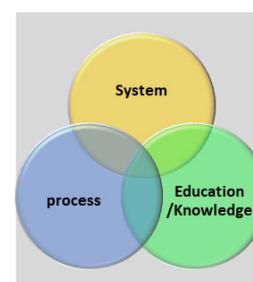
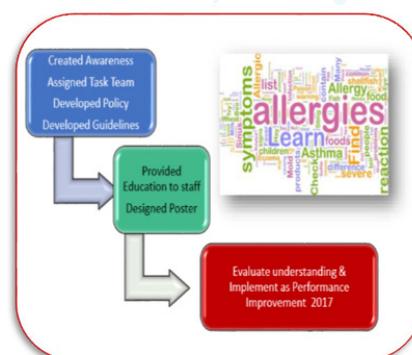
The main aspects in incident analysis are the three contributing elements: the process is mapped, system is assessed, and education & practice is reinforced.

The action plan followed the PDSA process.

Peer Review: A new approach was introduced to analyze incident contributing factors from the perspective of staff involved, colleagues and senior management.

Performance improvement initiatives:

1. Fall Risk documentation guide & checklist
2. Patient hypo/hyper quick reference
3. MS checklist for send out samples
4. Podiatry Recall Instruments





World Diabetes Day

Nov.17, 2016

“Patient Safety”

A poster contest was held where five posters were submitted:



Figure 1-Allergy PI -Winner #1



Figure 1-Exercise & health -Winner #2

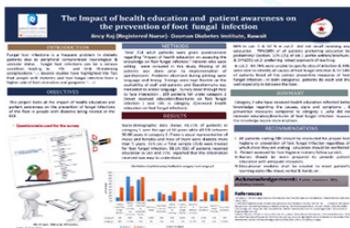


Figure 1-Foot fungal Inf. Winner #3

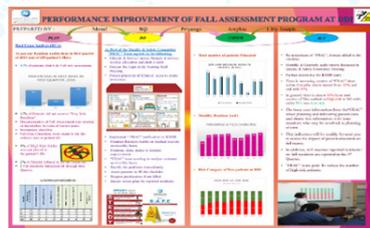


Figure 1-Fall Mgt.



Figure 1-Hand Hygiene

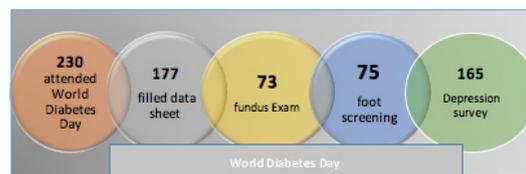
- All staff worked to ensure the success of the activity, new process adopted for patient screening and capturing data of participants as candidates for research
- A total of 177 participants were screened for:
 - Diabetes risk assessment
 - Vital parameters
 - BG level & HbA1c
 - Depression survey
 - Foot assessment
 - Fundus photography
 - Education/counselling provided: Nutrition–Pharmacy–Diabetes Education–Exercise



World Diabetes Day-Nov.17, 2016

The In-Service committee is established to oversee and plan educational activities.

- Educational Offerings: (Appendix1)
 - 12 committee meetings
 - 12 monthly educational calendars and 41 educational sessions
 - Presentations posted online & post test conducted for staff who didn't attend
 - Four quarterly reports submitted
 - One nursing orientation for 10 staff members
- Repeated the internationally validated “Basic Knowledge Assessment of Diabetes”, results were compared to 2015 to assess improvement & impact of education provided.
- Educational database: maintained to capture attendance
- Skill day: A competency validation activity: two days/week to validate competency through case scenarios
- Diabetes Course–IDF: Provided in collaboration with Education Department over three days / five offerings: all staff passed the course
- Epidemiology of Diabetes–by IDF – online course: seven staff certified
- CSSD Course - MOH: one staff trained
- Phlebotomy: two staff certified in Clinical Skills & trained in Phlebotomy–lab
- BLS instructors (10) & ACLS instructors (6) will assist the Clinical Skills in external training
- 10 staff sent to external conferences
- Area specialty: manuals developed to assist in cross training/orienting staff in these areas:
 - Podiatry
 - Cardiology
 - Pediatric
- Competency based practice:
 - Maintaining the “Competency Based Orientation” Checklists for the 10 clinical areas
 - Two New CBO developed for Sleep Apnea & MS
 - Developed competencies related to policy/procedure
 - Established cross training utilizing competency verification and validation to allow coverage for all clinical areas



Research Engagement:

- Maintained the research database
- Monthly report of activity submitted by all involved staff

- 28 staff passed the “NIH” & 30 staff certified for “Good Clinical Practice”
- Outreach activities are limited and targeting data collection Total of 12 (2016) versus 35 (2015)
- Five Posters presented in the World Diabetes Day held on 17th Nov., 2016

Out-Reach:
1148
patients

Enhance Staff Satisfaction:

A baseline survey was conducted in 2014 utilizing the valid tool of “Spector; Job Satisfaction Survey SSJ”. Staff were resurveyed in 2016 to allow comparison in areas that required attention. The survey consisted of 20 questions addressing nine domains (pay-promotion – supervision – benefits – rewards-operating conditions – co workers – nature of work and communication). Surveys were distributed to staff and responses were anonymous. General satisfaction score is 82.89% (2016) versus 68.65% (2014). Any score below 60% is considered an area for consideration and opportunity for improvement.

Survey Domains	2014%	2016%	Comments
Pay	45	69	Adjusted salary & revised scale
Promotion	90	100	
Supervision	90.6	96.25	
Benefits	67.6	78.3	Sponsored training for MOH staff. Insurance for staff and families.
Rewards	60.5	69.66	
Operating Conditions	82.5	89.25	Decreased working shift hours.
Co workers	80.8	80	
Nature of Work	75.7	80	
Communication	61.3	85.5	Developed IPPs with staff involvement & conducted almost 180 degree appraisal.
Overall Satisfaction	68.65%	82.89%	☺

The following initiatives were implemented which resulted in improvement in satisfaction scores:

- Recommended and succeeded in implementing salary adjustments, new salary scale and recruitment criteria.
- Submitted recommendation for working hours which was considered where shifts changed to 7:30am till 3:15pm instead if 8:00am to 5:00pm.
- Structured appraisal with staff involvement clear, smart objectives supported by evidences.
- Raised the concern regarding MOH, increased the bonus and submitted proposal for staff benefits to HR to follow up.
- Established clear communication lines in the Department.
- Arranged to send more staff for training and external workshops (sponsored) including MOH staff.

Reward Recognition:

- Nine staff were recognized for their special contribution in patient care. Recognition celebrations were held during staff meetings.
- Prizes and gadgets were distributed for highest scores in skill performance during Skill Day activity.
- Ten staff were sponsored for certification of Diabetes online course.
- Monetary prizes given to poster winners.
- More efforts need to be exerted in this domain as long as the scores are still ranging within the 70th percentile.



Figure 1-farewell -Richard & Benjalin

Communication:

- Established open door policy.
- Structured working groups of staff nurses to encourage contribution and develop abilities as part of succession planning. The working groups are:
 - In-service /professional development
 - Nursing research
 - Quality & safety champions
 - Policies and procedures
 - Infection control links
- Created the Nursing Team Leader group to participate in decision making in important issues in the Department and as a means of communication.
- Held monthly staff meetings to address and elaborate on nursing activities.
- Assigned area leaders to facilitate communication and develop abilities.
- Conducted individual meetings to set IPPs for each staff, develop objectives, review performance improvement activities and many others.



Enhance Patient Satisfaction:

- Conducted surveys on patient satisfaction with nursing care in four domains:
- Captured incidents related to patient care and elaborated to close the gap.
- Developed patient education booklets / brochures.
- **Medical Equipment Maintenance:** process re-engineered with biomedical engineering staff attendance.
- **Equipment Services:** service request placed for repairs and closing period is monitored.
- **Maintenance Contracts:** integrated spare parts.
- **Inventory:** Updated an inventory list of all medical equipment available in clinical areas in coordination with Biomedical Engineering Department.
- **Consumables and Supplies:**
 - Monitored through a database to ensure standard utilization.
 - Requested store items are checked, verified and countersigned.
 - Purchased requests are channelled based on last date of request and consumption history

- **Central Sterile Supply:**
 - Supplies Integrity: checked monthly.
 - Instrument Recall: conducted quarterly.
 - Monthly reports submitted regarding instrument & sterilizer integrity.
 - Utilization monitored.

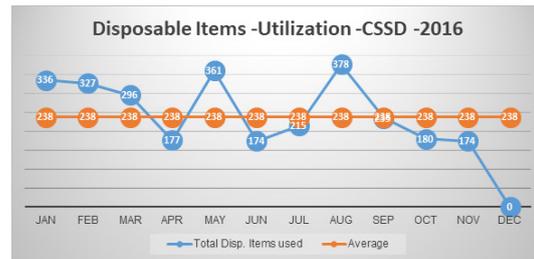
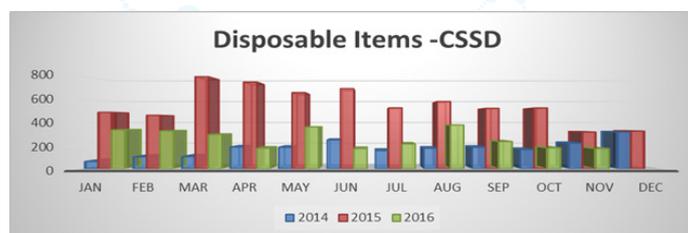


Table: Consumption of disposable sterile items in 2016 versus 2014 & 2015

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2014	63	103	105	188	185	249	157	177	185	165	220	318	2115
2015	488	462	795	749	658	692	526	581	522	525	317	325	6640
2016	336	327	296	177	361	174	215	378	235	180	174		2853



Instruments processed per clinic 2016

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2014		392	395	259	310	235	265	388	243	293	253		3405
2015		96	72	43	74	38	49	74	36	38	26		626
2016		46	32	0	83	91	0	54	49	74	95		563
2014		3	10	52	13	5	0	0	0				83
2015		0	85	8		0	4	54	30	209	18		408
2016		0	32	0	24	26	34	2		40	6		170
2015											14		14
2016		537	626	362	504	395	352	572	358	654	412		5269

The high demand was managed by:

- Orienting one staff in CSSD & through MOH to cover leaves & emergencies
- Developing Competency Based Orientation checklists for CSSD
- Assigning staff on rotational basis to assist CSSD in high load during their low peak clinic hours
- Developing checklists for set content

Challenges Faced:

- Facing continuous changes & lack of control on temperature & humidity control inside CSSD
- Frequently floods are observed due to blocked drainage system
- Inability to manage minor facility issues and depending on external sources.

Staffing Overview 2015:

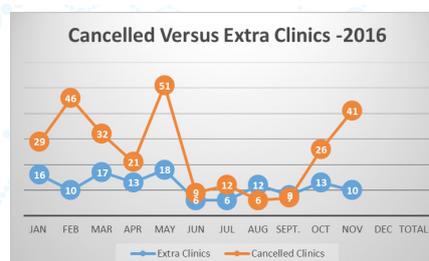
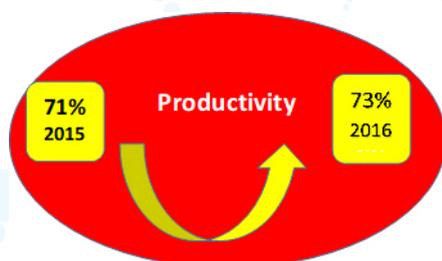
- Outsource staff: six were recruited Out of eight to be DDI full time employee as of March 2016
- Ten Cuban nurses joined on Oct. 23, 2016
- Four staff resigned

Enhancing Staff Productivity:

- Monitor workflow to ensure adequate utilization of resources (productivity 73%)
- Utilize low peak hours for cross training / orientation / competency validation, etc.
- Reduce outreach activities: 12 (2016) from 35 (2015)
- Schedule educational offerings during low peak clinic hours
- Cover extended clinics and grant time back in free schedule slots
- Assign projects/audits to be conducted during free time
- Train staff in infection control–quality–policy development–environmental rounds to make sure of utilizing their time in departmental activities and at the same time develop their abilities and skills

Monitoring Workflow:

- Monitoring patient time in-out; resulted in decreasing slot timing to 20 minutes for new patients
- Staff utilization/cancelled clinics & extra clinics monitoring and studying the impact
- Granting time back with low level clinical activities



CSSD:

In 2015 Steam Sterilizer worked 230 days

In 2016 Steam Sterilizer worked 100 days. (Till Nov.)

We requested 10 instruments free of charge from MOH and reduced the sterilization cycles to **twice** instead of five days / week

- Reduced 130 working autoclave days
- **Saving** 130 pieces of Indicators (Bowie & Dick test) & 130 pieces of rapid biological test

Saving electricity & water for 390 cycles & detergent for 130 cycles. This plan didn't affect the work in the clinics.

Autoclave Utilization Days		
Month	Year 2015	Year 2016
Jan	14	18
Feb	16	18
Mar	11	23
Apr	7	22
May	9	21
Jun	7	21
Jul	8	16
Aug	9	20
Sep	6	17
Oct	5	19
Nov	8	18
Dec		17
Total	100	230

Saved Items	Quantity Saved	Test Price per / year
Bowie & Dick	130 Pieces	KD 1,100
Rapid Biological Test	130 Pieces	KD 3,000
Total	260 Pieces	KD 4,100
Electricity	390 Cycles	
R.O Water	390 Cycles	

Laundry:

Utilization monitored on monthly basis. The laundry cost includes all staff in DDI. A reduction in cost is observed after contracting with the new laundry.

Comparative Laundry Cost		
Year	Quantity	Cost
2014	37796	10618.3
2015	41718	12380
2016	34676	10278.6

Utilization of Supplies & Consumables:

- Assigned staff monthly for store management
- Requested validation for purchase request & justification of demand based on request history
- Established unit consumption database

Hoping to be able to face the challenges and to have a fruitful coming year as we believe that:

“The future belongs to those who believe in the beauty of their dreams.”

Eleanor Roosevelt

Nursing Educational Offerings - 2016 Appendix 1

1. CSSD: Transporting Instruments /Rigid Containers
2. Hand Hygiene Practice Revisited & Going Forward
3. CSSD: Cleaning of Complex Instruments
4. Basic Research Concepts
5. Infection Control Link Training
6. Nursing Staff Role in Vital Signs Room
7. Prevention of Type 2 Diabetes - The Scientific Evidence
8. CSSD: Washers & Detergents
9. Diabetes Educator Role
10. GLP - SGLT2
11. IDF 3 Day Basic Diabetes Training Course for Healthcare Professionals
12. What is DAFNE Program?
13. Aseptic Dressing Technique
14. TEAM Dynamics
15. CSSD: General Sterilization & Zika Virus
16. Physical Fitness
17. Evidence Based Practice
18. Communication Skills
19. Basic Carb Counting
20. Fundamental principles of infection prevention & control; standard precaution for INC
21. Advanced Carb Counting
22. IPro2 & I-port Training
23. Fungal Infections in Diabetic Foot

24. Basic Research
25. Lab Testing; Understanding Panic Value
26. Bydureon Pen-Demonstration
27. CSSD Training: Basic Knowledge of Disinfection & Sterilization
28. SGLT2 Inhibitors
29. Diabetic Nephropathy
30. CSSD: General Orientation
31. Hepatitis: affects everyone, everywhere. Know how to confront it.
32. Common Eye Disorders
33. Sleep Apnea Study: what to know
34. Effective Communication Skills in Nursing Practice
35. Hypoglycemia Management
36. Nursing Management of Patients with MS
37. Thyroid Disorders & Diabetes Mellitus
38. Quality Directives
39. Cardio-pulmonary & 6 minute Walk Test
40. Fall Risk Assessment Updates
41. Allergy , Figures and recommendations
42. Basic ECG Interpretation
43. Transmission Based Precaution
44. Non-invasive Glucometer EGM 1000
45. Quality Improvement Action Plan

Clinical Lab

1. GENERAL UPDATE ON THE DEPARTMENT

The following table summarizes the general updates in the year 2016.

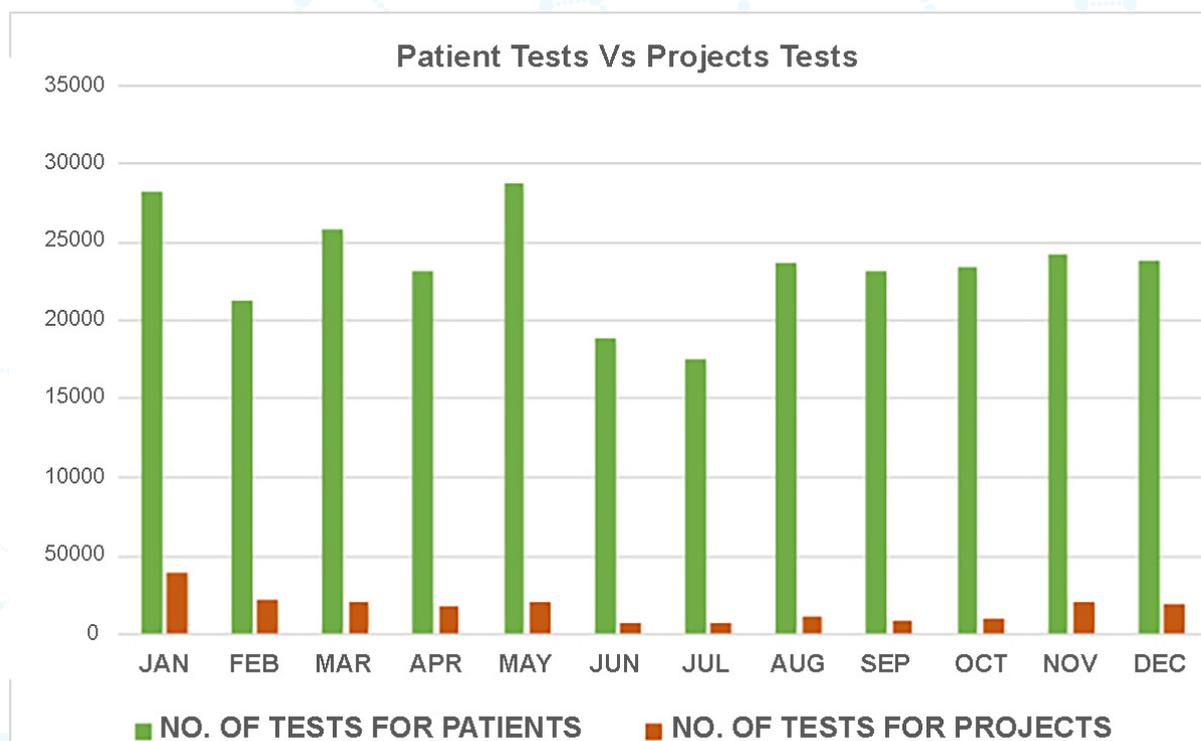
Tasks	Description	Status
Instruments Management	<ul style="list-style-type: none"> Method validation was done for the new machines. There is a backup for the majority of laboratory tests. Old machines are under maintenance contract. MOH instruments are under BME Department supervision. 	100 % completed
Quality Control	Randox international Quality Assessment Scheme (RIQAS) is applied for all DDI lab tests.	100 %
Staff	One Medical Technologist joined the team.	Under Training
Accreditation Program	<ul style="list-style-type: none"> CAP contract was signed and the work started in 16/10/2016. PT requested. 	40 % Completed
General Update	<ul style="list-style-type: none"> Reducing lab expenses by: <ol style="list-style-type: none"> Ordering more reagents and supplies from Medical stores rather than purchasing. Implementing the lab frequency testing and rejection criteria to reduce the usage of unnecessary reagents and hence reducing biological and chemical waste generated by the clinical lab. 	Completed
Educational Activities	<ol style="list-style-type: none"> The department staff were involved in preparing Topics which represent & educate other lab staff about the lab tests, certain outbreaks & lab methods. The lab personnel were involved in the following Educational activities: <ul style="list-style-type: none"> – 2 Lab technologists attended Arab Health in Dubai. – Majority of Lab technologists attended (Quality lab work) workshops in DDI. 	Completed

Educational Activities	<ul style="list-style-type: none"> — 90% took GCP certificate. — 90 % took NIH certificate. — 8 attended IDF training course by Education department. — 3 attended Enterprise risk management. — Majority attended Lab safety and Quality practices. — 3 attended ACI advanced accreditation training program. 	Completed
Project Activity	<p>Clinical lab completed the services for the following projects:</p> <ul style="list-style-type: none"> • Tracer for Harvard • Prevalence of UTI in diabetic patients with controlled and uncontrolled glycaemia in Kuwait, for the Microbiology technologist May and Shinu and Dr. Ali Tiss (from research department). • ADGAR project for Dr. Azza /Dr. Roula. • Efficiency of Herberprot-P for Dr. Rafael. • Mg treatment of inflammation in disorders of Glucose homeostasis. 	Completed
Ongoing Projects	<ul style="list-style-type: none"> • KWB-P- project for Dr. Talal & Dr. Anwar • Asthma and Obesity project for Dr. Rasheed • Cohort Study for Dr. Azza. • Cytokines in Diabetic Nephropathy for Dr. Abdulnabi Al Attar. • Dates project for Dr. Ebba. • Polymorphism project for Dr. Maisa. • ION-04-ed for Dr. Fawzi. • Comparison of lab changes in patients with obesity & type II diabetes for Dr. Nadia. • Sleeping Apnea for Dr. Abdulmohsen Al Turki. • 109 MS 310 biogen for Dr. Raed. • 109 MS 202 biogen for Dr. Raed. 	Under Processing

2. STATISTICS

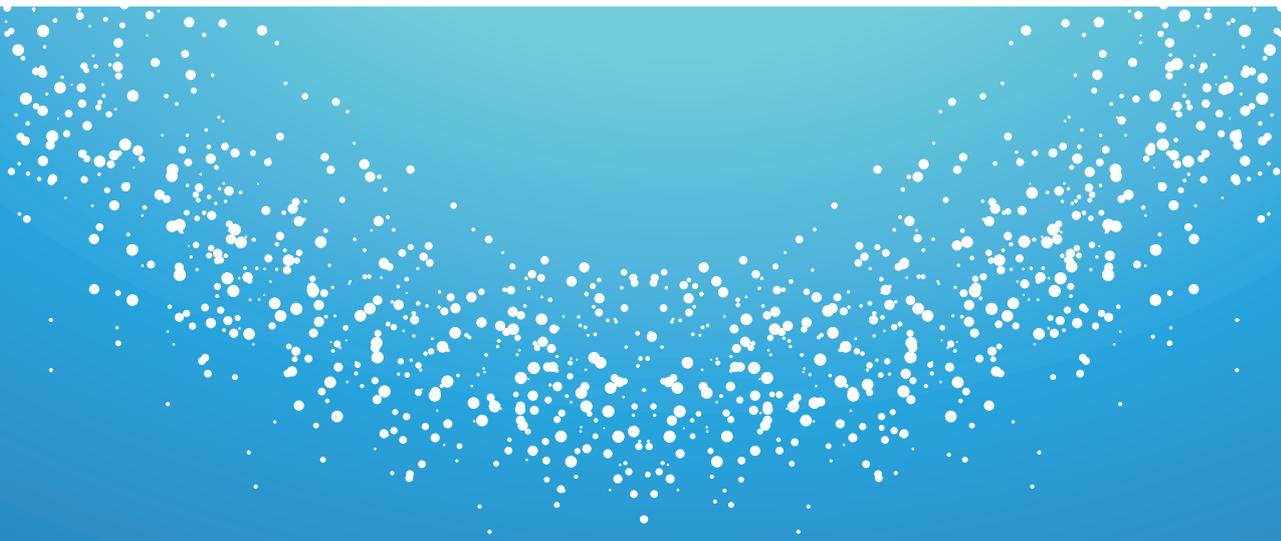
Graphical representation of patient tests VS. project tests during the year 2016

Month	No. of tests for patients	No. of tests for projects
Jan	28155	3813
Feb	21245	2182
Mar	25759	1970
Apr	23082	1719
May	28681	1959
Jun	18748	593
Jul	17521	618
Aug	23563	1069
Sep	23121	757
Oct	23342	913
Nov	24115	1996
Dec	23728	1879
Total	281060	19468



SUMMARY / FUTURE PLANS

1. To take CAP accreditation.
2. To continue with ongoing educational programs for the lab staff.
3. To participate in other departments educational program.
4. To update the lab with more efficient machines but with less cost.
5. To continue with reducing lab expenses by:
 - Getting more reagents and supplies from the Medical Stores and reducing purchasing through Dasman.
 - Reducing the misuse of lab reagents and supplies by following the lab frequency testing policy and by proper request with the correct required amount of reagents and consumables.
 - Getting new machines and instruments through MOH.
6. Continuing with the summer internship training program for the newly graduate students and generating revenue from the training.
7. Continuing to do more brochures to educate the public about every lab test done in DDI.
8. Publishing more retrospective study papers based on clinical lab data.
9. Updating the lab tests list with new, more specific tests.
10. Updating LIS to make lab work faster and more efficient.
11. Continuing monitoring lab and staff performance via Quality Indicators.
12. Providing our services & training (for ACI required standards preparation) for other labs.



Operations Division

Annual Report

2016

OPERATIONS DIVISION ANNUAL REPORT

1. Biomedical Equipment & Maintenance Service

1.1. MISSION

To provide the biomedical engineering services required to support DDI research laboratories and clinical departments.

1.2. DEPARTMENTAL UPDATE AND STATISTICS.

The Biomedical Engineering Department consists of a total of five employees:

The budget for this year is approximately KD 650,000.000

This budget is spent mainly on maintenance service contracts of all medical and research equipments.

Biomedical Engineer	3
Biomedical Technician	1
Medical Gas Technician	1

1.3. MAJOR ACHIEVEMENTS

One major achievement for the Department is to have all DDI medical/research equipment barcoded. This was part of the DDI assets inventory barcoding initiated by the Finance Department.

Another achievement is having the Automated Biomedical Services System ready by the end of this year. It will serve as a Helpdesk which will make the work more efficient.

1.4. FUTURE PLANS

Technology Assessment: The Biomedical Engineering Department is supporting the Research Department in creating a database with all specialized equipment specifying their different functions. The Biomedical Engineering Department role is to list the specifications of each equipment and the list will be ready by the end of this current year.

1.5. SUMMARY

The Biomedical Engineering Department offers services to most of DDI departments. The goal is to have uninterrupted service at all times; to achieve that goal, the Biomedical Engineering Department selects the equipment, installs it, commissions it, trains users on it and keeps maintaining it.

2. Finance

2.1. MISSION

The mission of the Finance Department is to accurately report the financial position of DDI for various stakeholders – including BOT, funders (KFAS), auditors, and others who may have a vested interest in the financial activity of DDI. Within the scope of this mission is the responsibility to coordinate and direct all financial transactions recorded in the accounting system of DDI. This responsibility requires that all transactions adhere to DDI policies and procedures, international financial reporting standards,

and rules established by the authoritative governing bodies.

2.2. DEPARTMENTAL UPDATE AND STATISTICS

The Finance Department is undergoing a restructure process to be able to fulfill its mission and role in DDI.

2.3. MAJOR ACHIEVEMENTS

Implementation of new financial system (MS Dynamics) (Phase 1).

Restructuring of Finance Department.

Ensure that all actual expenditures are within approved budget.

2.4. FUTURE PLANS

Finance Authority Matrix – To be presented to BOT. (Before year end 2016).

Review and amend Finance related policy and procedures. (Mid 2017).

Preparation of 2017 Budget. (End of Sept., 2016)

Implementation of Phase 2 of MS Dynamics (Q1 2017).

2.5. SUMMARY

During the current year 50% of the Finance Team has recently joined DDI, and a new financial system has been implemented, the Finance Team faces many challenges and was able to overcome many challenges since the beginning of the year. The Finance Team is confident to overcome all challenges in a timely manner, and to ensure that we are able to fulfil our role in DDI.

3. General Services

3.1. MISSION

Ensure the proper and efficient operation of all its physical aspects, creating and sustaining safe and productive environments for Staff / Students and the general public.

3.2. DEPARTMENTAL UPDATE AND STATISTICS

General Services strives to provide quality in-house services, such as renovation projects, electro-mechanical works and related maintenance, carpentry, painting, cleaning, elevator services, security, fire-fighting, etc.

Major jobs mentioned in Strategic Work Plan 2016 have been completed as per schedule, those under scrutiny.

3.3. MAJOR ACHIEVEMENTS

Projects Completed in 2016:

RO Drinking Water System for staff installed at various locations in DDI.

Fitness Centre modifications.

After MRI-2, door access to BMS control room.

Clearance of all damaged and unwanted furniture and other items, from DDI.

Reorganized B2 storages.

3.4. FUTURE PLANS

Front side compound renovation.

Exterior building painting.

Waterproofing of water tanks in B2.

New Tissue Bank Lab.
 CCTV upgrade (partial).
 B1 car park – Epoxy floor painting.
 AC duct cleaning at various locations.

3.5. SUMMARY

Some of the jobs were carried forward from 2015 to 2016 re: budget issues.
 In 2016, some jobs were cancelled re: budget issues.

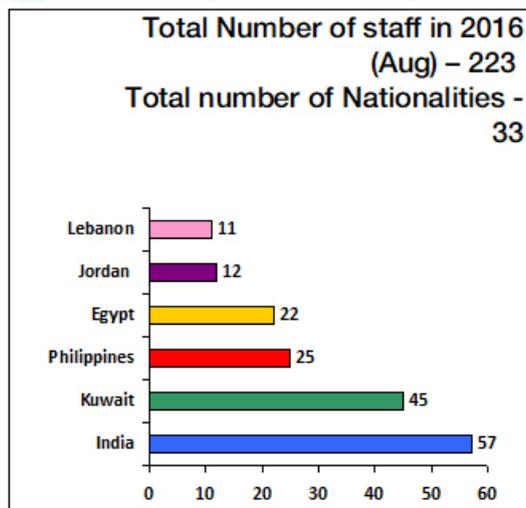
4. Human Resources

4.1. MISSION

The mission of the Human Resources Department is to be a progressive business partner in enabling DDI to achieve institutional objectives and be a center of excellence on the foundation of professional development and qualitative HR services, programs and initiatives.

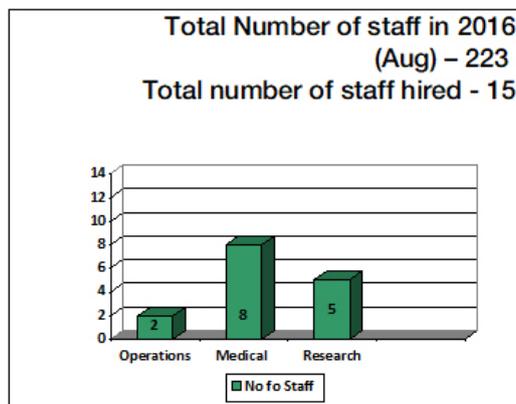
4.2. DEPARTMENTAL UPDATE AND STATISTICS

4.2.1. Staff Nationality Composition



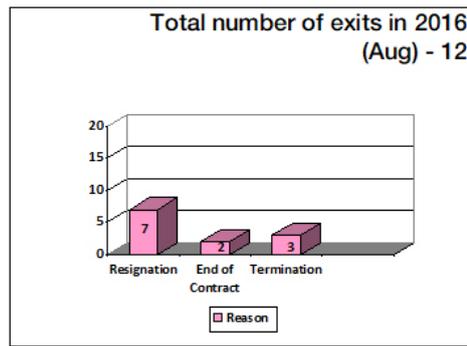
*Figures indicate count of staff per nationality

4.2.2. Recruitment



*Figures indicate count of votes

4.2.3. Attrition



4.2.4. Exit Analysis Survey (2016)

Primary Reason for Leaving DDI

Type	Q1	Q2	Q3
Better Opportunity		1	1
Return to Home Country	1		
Higher Studies	1		2
Family Reasons			
Retirement			
Termination		3	2
Other		1	

*Figures indicate count of votes

Better Opportunity Break Up

Type	Q1	Q2	Q3
Type of Work			1
Lack of Recognition			
Compensation		1	
Quality of Supervision			1
Company Culture			1
Career Advancement Opportunity			

*Figures indicate count of votes

How would you rate the following in relation to working with DDI?

Type	Poor	Average	Fair	Good	Excellent
DDI Policies		3	2		1
Work Environment & Facilities	1	1		3	1
DDI Support Services		2		3	1

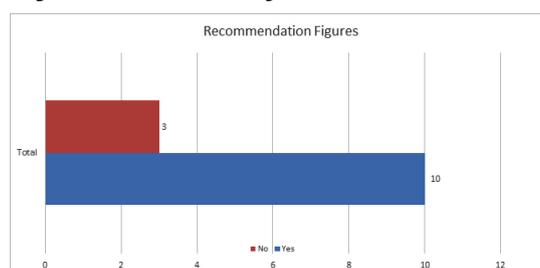
*Figures indicate count of votes

How would you rate the following in relation to your job?

Type	Poor	Average	Fair	Good	Excellent
Cooperation Within Your Department			1	2	3
Cooperation With Other Departments				5	1
Communications Within the Company as a Whole			1	5	
Communication Within the Department			2	3	1
Communication Between You & Your Manager		1			5
Continuous Feedback Concerning Work Performance From Your Manager		1			5
Training & Development	1	1		4	

*Figures indicate count of votes

Would you recommend your friends to join DDI?



*Figures indicate count of votes

4.2.5. Training & Development

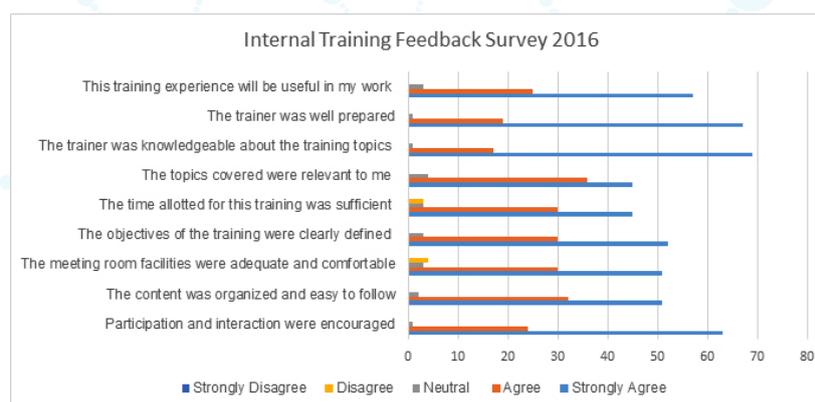
Count of Employees Trained in External Courses - 59

Count of Employees Trained in internal Courses - 204

No. of Trainings	External	Internal
2016	38	11 (Cost : 1850/- KD)

*Count of Trainings & Conferences Included

Business Travel	Per Diem	Air Ticket
2016	20,369	12,396



*Figures indicate count of votes

*There was no training feedback survey for 2015

4.2.6. Payroll

Salary	Q1	Q2	Q3	Q4
2016	735,789	755,764	457,817	NA

Allowance	Q1	Q2	Q3	Q4
2016	78,336	100,829	29,436	NA

Overtime	Q1	Q2	Q3	Q4
2016	1282	440	58	NA

Indemnity Issued	Q1	Q2	Q3	Q4
2016	8969	17,094	31,121	NA

4.2.7. Administrative Costs

Residency	Q1	Q2	Q3	Q4
2016	1915	4060	3530	NA

4.3. MAJOR ACHIEVEMENTS

Implemented of the Career Progression framework across three DDI divisions (Research, Operations, DG Directorate) Aug. 2016. Facilitated and conducted town halls to explain new position and grading system for three divisions.

Conducted contract reviews and identified gaps, discrepancies in accordance with the new position and salary scale approved by KFAS. Closed 54 contracts and issued new contracts that are compliant with the new grading and salary guidelines, thereby reducing exposure to high indemnity packages over the next 3-5 years.

Over 50 staff members were promoted and received increments in light of the new grading and salary guidelines.

Reviewed and revised seven HR policies in order to comply with new directives of the DG, HR Committee and Board of Trustees (BOT). Policies to be announced to all staff by Quarter 4 of 2016.

Reviewed, updated and revised over 67 job descriptions of operations and medical staff. JDs of research staff currently under review.

Restructured organizational charts for each division of DDI according to institutional objectives.

Invited, screened and negotiated with multiple vendors to shortlist and select a new HR information system for DDI.

Presented the new authority matrix and secured the approval of the DG. The matrix is currently awaiting approval from the BOT.

Advertised, screened and facilitated the closure of senior management vacancies: Chief Medical Officer and Chief Operations Officer.

4.4. FUTURE PLANS

The Department will work on having a 100% migration of HR and payroll activities to the new HR system. Additionally, it is planned to update personnel details and work accomplishments i.e. publications, grants, further educational qualifications on a real time basis. Information could be analyzed for programs such as succession planning and performance management of critical staff.

Drive and manage a functional succession planning program that provides to the stability of achieving institution goals and development of staff for career progression.

Provide consultative advice on addressing challenges and issues faced by DDI.

4.5. SUMMARY

The nationality mix numbers reflect a very diverse cultural group with varied experiences and is a strength for DDI. It is to be noted that the number of staff who are Kuwaiti citizens helps keep in pace with hiring trends and requirements as stipulated by the Ministry of Social Affairs & Labor. Hiring has remained consistent across the divisions of DDI with reasons such as new projects or replacing staff that have left DDI. For the last two years hiring has been primarily local whilst overseas hires have seen a steady

drop over the last three years. Attrition rate has dropped over the year on year (YOY) comparison. Resignation by staff retains the lead on the numbers. The Institute has previously not been able to delve into the reasons for resignations. HR has prioritized on studying this and re drafted the exit interview form in order to draw conclusive trends. The Exit Analysis Report will be used in quarterly reports and help provide senior management real time status of personnel.

The drive in conducting internal trainings have allowed many the opportunity to broaden or hone their skills in order to work effectively. Based on the feedback shared by staff during the 2015 annual appraisals, HR has been able to shortlist and conduct courses that are important and those with high demand. Internal courses conducted so far include – Communication Skills, Microsoft Excel, Budgeting and a Conference on Workplace Survival. The feedback so far has been positive. Feedback survey reports will be further analyzed to deliver on qualitative training programs. The cost on business travel has, on comparison, remained under control due to stronger vigilance on relevance and practicality of requests.

With the implementation of the new grading and salary system (Effective: Aug. 2016), this has provided staff a much needed motivation to stay with the Institute and has allowed HR to address many discrepancies in the pay scale within DDI. Indemnity that would be issued for the remainder of 2016 will be high owing to revisions and closures of 54 contracts. However, in the run up to the next 3-8 years, the value of indemnity issued for the very same staff would be lower and allow DDI to well manage its costs even if budget remains very tight.

The Ministry of Social Affairs have introduced new fees on renewing or transferring residencies, work permits etc. (Effective: June 2016). Hence, this year, the cost will be higher as opposed to a comparison on spend during 2015. The costs are to remain stable next year as no new charges are expected immediately.

5. Information Technology

5.1. MISSION

The Information Technology (IT) Department is an enabler to the mission set by the Institute. As a service Department, the IT Department provides various services to different departments within DDI allowing for their projects to be executed more efficiently. Efficient operation is also something the IT Department applies to its own work, and finding new ways to lower the cost while improving, or at least maintaining, the same level of service. As seen throughout the report, the IT Department services include support for DDI activities of both clinical and research services.

In 2016 the IT Department has structured its operations and work to better align with the Institute's mission and strategy. We have shifted our focus to internal operations, as opposed last year, where we worked on both internal and special projects that are

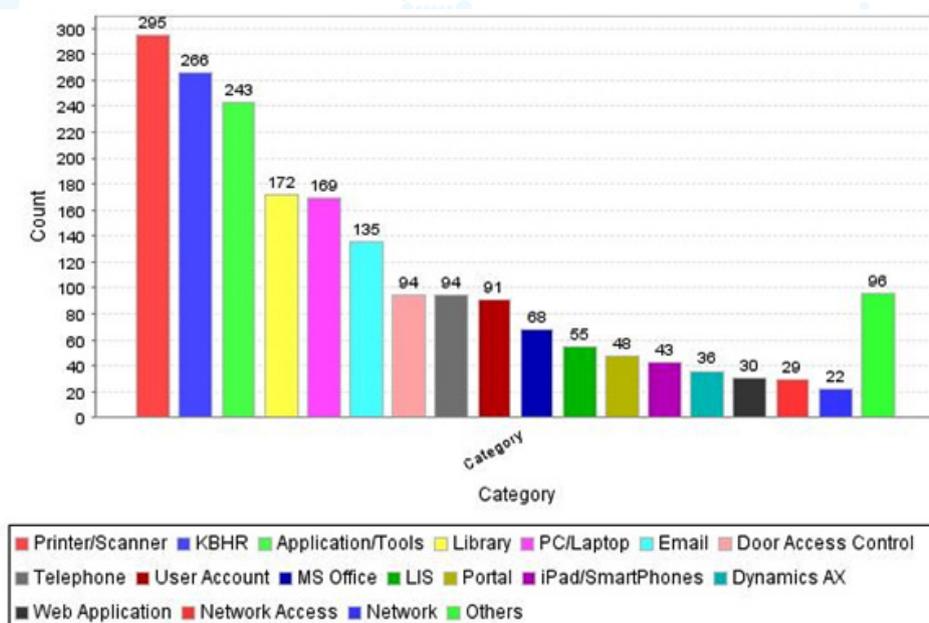
executed externally with DDI's partners in Kuwait's healthcare environment. This shift is seen in this year's work plan and the projects the Department has taken part of.

5.2. DEPARTMENTAL UPDATE AND STATISTICS

Operating within its budget, the IT Department has been, so far, able to meet the goals and performance indicators specified at the beginning of this year. Such targets were built around the further enhancement and fine-tuning of the main application/service the IT handles, the EHR used in DDI (KBHR), as well as disaster recovery & business continuity, improving DDI's online presence and information dissemination, resource utilization efficiency, proper data management, and more.

As seen in the previous reports, the Department has been working on several major projects, namely, disaster recovery phase 2, environment security, and further phases of Microsoft Dynamics AX implementation and IVR Auto Attendance System. The Department also continued on last year's improvement on these projects at all levels including the knowledge transfer from partners, application updates that include new features and capabilities, behind-the-scenes infrastructure upgrades to improve performance, etc.

In addition, the range of services provided internally to support DDI's operations continued to include several categories. The most major ones revolve services around the applications and tools used by employees, email services, KBHR, networks services, computer hardware, printing services, telephone services, as well as web portal. In total, DDI's IT Department has served more than 1986 helpdesk tickets since the beginning of 2016 to date (eight months), and the distribution of those ticket is best illustrated in the chart below. A satisfaction survey will be sent to DDI employees on December 2016.



5.3. MAJOR ACHIEVEMENTS

The projects that the IT Department was involved in this year were mainly internal with limited involvement in external project. The internal projects include both IT Department projects (project only impacting it's own operations) and DDI projects that are internal to the organization, and external to the Department. As the projects vary in nature and size, the IT Department's involvement can be of different nature and size as well. Below, we offer an overview on noteworthy projects that Information Technology has either solely worked on, or significantly contributed to, with a brief description of each of the projects as well as the Departments with which the IT Department collaborated with:

Organizational-level Projects Cloud Migration

IT Department has successful progress in migrating many of its services to the cloud, allowing for efficient, secure, and functional management of email account and enterprise benefits. So far, exchange mailboxes have moved to the cloud, and the majority of Microsoft 365 benefits are being rolled out. Services like Yammer, and Skype for business will be rolled out in the near future to complete the overall 365 implementations.

Research Affairs System

Last year the Department developed and implemented a research affairs system, which manage submissions and reviews of research proposals. Since it's delivery, the Department received various changes on the system to significantly improve it's functionality. A plan on incorporating the changes has been developed and progress is being made to meet all the needed requirements.

Medical Fitness Center System

The Department had received a bunch of changes requested on the pre-implemented system at the FRC. The Department has taken over the development tasks from the vendor, saving DDI a sizeable amount of money. Since then, the Department received a series of required enhancements and changes. All the initially requested changes were implemented, and delivered to the end user. However, there are, and will always be, ongoing enhancement requests to be done.

Bio Medical Engineering System

The Bio Medical Engineering Department had sought it's help in developing a contract management system for them to be able to handle contracts related to each of the machines under their authority. A Beta version was delivered earlier this year, and was followed up with a more enhanced functionality to cover all their needs.

IT Training

The IT Department held a total of 23 training sessions on the KBHR system. Further, the IT Department hosted a series of lectures, to all DDI employees, on multiple levels of Excel. So far, a total number of (92) employees have successfully completed the course.

Microsoft Dynamics AX 2012

During the last year, The Department successfully customized and implemented Microsoft Dynamics AX 2012, an ERP solution for the Finance and Procurement Departments based on their requirements. The system started helping the automation of processes between the Finance and Procurement Departments. During this year, more enhancements have been done, and further customization of budgets have been imbedded in DDI's instance of the application.

DDI Main Website

The IT Department in collaboration with the PR Department completed, the progress made last year. The website is fully delivered and deployed. During the rest of the year and the next, further improvements will be made to support more autonomy for the Department responsible for components/sections of the website.

IP Phones Upgrade

The network team within the Department has started the progress of upgrading the outdated IP phone service management solution currently provided. The upgrade will allow for better functionality and would restore compatibility with newer systems. Examples on such functionalities include voice message service integration with Exchange, ability to use Cisco phone app, as well as the ability to use one's work extension away from desk, and/or outside of DDI.

Departmental Projects

Disaster Recovery Site – Phase 2

The Department finished the implementation of disaster recovery Phase 1 which takes an online backup of DDI Research, Clinical and Operational Data, scheduled as per the business needs and stored in our DR site in the Liberation Tower, which completes Phase 1 of the business continuity plan. In addition, a detailed plan for Phase 2 was developed, and pending execution.

Infrastructure Service Level

The Department was able to remain above the target level of service in terms of availability. All major services maintained service availability higher than 99.5% with an overall average slightly below that. The chart below illustrates the different levels of service for each of the major services:



Windows 10 Upgrade

The Department prepared the roll out of Windows 10 to all end users. The roll out is scheduled later in the year to be fully implemented. Separating the migration to cloud, and the roll out of windows 10 was to separate any potential challenges that may be caused by combining the two roll outs.

Data Center Upgrade

The data center received carried upgrades to support the aforementioned added functionality. For example, a virtual machine manager (Hypervisor) was installed to host the multiple Microsoft Windows operating systems at once, providing more efficient use of resources. In addition, the Firewall solution is being upgraded to offer more secure, and more efficient management of Both Internet Service Provider security services.

Student Assistance/Internship

During the summer, the IT Department has helped multiple students with their graduate studies, either by providing data or even providing insights on how they might want to consider approaching the analysis component of their studies. In addition, the Department hosted a LOYAC student intern for six weeks. During which, the intern was able to get exposure to different IT projects and specialties.

5.4. SUMMARY AND FUTURE PLANS

In summary, the Department has focused its efforts on helping different departments reach optimal levels of efficiency in utilizing their resources. In addition, we've helped empowering DDI staff at all levels with the tools they need to do with in order to perform more efficiently. This was reflected in tangible changes end users are able to see and observe, and behind-the scenes improvements that they might witness, but not necessarily see. In the coming year, the Department plans on continuing to improve the service delivered, and maintain and improve on the level of efficiency we operate on. Starting later this year, we will focus our efforts on tackling areas that currently need optimizing. Examples include printing mechanisms at DDI, as well as long-existing issues with KBHR and all its related areas.

6. Procurement & Purchasing

6.1. MISSION

To obtain the best possible products or services for DDI at the best possible price, through applying the instructions of the P&P manual in a transparent and fully controlled environment.

6.2. DEPARTMENTAL UPDATES AND STATISTICS

- Obtaining competitive quotations to serve DDI's interest.
- Issuing POs and communicating with vendors.
- Maintaining and developing the purchasing cycle.

- Referring any requisition with an estimated value that exceeds KD 5000 to the purchasing committee.
- Reporting and data management of the purchasing history in the system.
- 2017 budget submitted.

6.3. MAJOR ACHIEVEMENTS

- Updated the policy and procedure manual.
- Unified the purchase requisition form.
- Created a new form for request for returns.
- Referred a number of tenders to the purchasing committee.
- Created a record for justification letters to see if we have any patterns.

6.4. FUTURE PLANS

- Fully digitalizing the purchasing process.
- Create a procurement plan form to be used by all DDI departments.
- Create a vendor evaluation form.

6.5. SUMMARY

DDI went through a lot of changes in terms of top management, which created confusion amongst all staff members. The Purchasing Department had a lot of struggles to familiarize our colleagues with the P&P manual and our values at work, on the other hand, we could never reach the 100% compliance with the P&P manual without our colleagues' cooperation and understanding. Finally, we will always depend on the guidance of DDI's leaders and our colleagues' expertise in developing the best solutions and processes to serve the organizational needs and requirements.

