



معهد دسمان للسكري
Dasman Diabetes Institute



أحد مراكز
Center

مؤسسة الكويت للتقدم العلمي
Kuwait Foundation for the Advancement of Sciences

DASMAN DIABETES INSTITUTE ANNUAL REPORT | 2020







**H.H. Sheikh Nawaf Al-Ahmad
Al-Jaber Al-Sabah**

AMIR OF THE STATE OF KUWAIT



**H.H. Sheikh Mishal Al-Ahmad
Al-Jaber Al-Sabah**

CROWN PRINCE OF THE STATE OF KUWAIT



**H.H. Sheikh Sabah Al-Khalid
Al-Hamad Al-Sabah**

PRIME MINISTER OF THE STATE OF KUWAIT



DR. QAIS AL DUWAIRI
Director-General,
Dasman Diabetes Institute

A MESSAGE FROM THE DIRECTOR-GENERAL

“We believe it is our responsibility to contribute to the global fight against COVID-19 and ensure the safety and wellbeing of the people of Kuwait”

“DDI has proven to be resilient And capable to adapt, innovate, evolve, and thrive in adversity.”

It is with great pleasure to present to you Dasman Diabetes Institute’s Annual Report. In the following pages, we review the most prominent achievements and activities of the Institute in 2020.

Dasman Diabetes Institute was established under the patronage of His Highness Sheikh Jaber Al-Ahmad Al-Sabah, the late Emir of the State of Kuwait, and the Kuwait Foundation for the Advancement of Sciences (KFAS) to address the increasing prevalence of diabetes in Kuwait. Since its inauguration in 2006, the Institute has been striving to address the diabetes epidemic in Kuwait through advanced diabetes research, integrated prevention, training, and education.

In late 2019, COVID-19 (SARS-CoV-2) was declared a Public Health Emergency of International Concern I by the World Health Organization. By February 2020, Kuwait witnessed its first COVID-19 cases. Like many governments around the world, our Ministry of Health promptly responded to the outbreak in attempts to minimize its devastating consequences. Nevertheless, the COVID-19 pandemic has impacted our lives, disrupted our daily routines, and caused global economic loss. At Dasman Diabetes Institute, we believe it is our responsibility to contribute to the global fight against COVID-19 and ensure the safety and wellbeing of the people of Kuwait. This year, our achievements represent our commitment to address the diabetes epidemic in Kuwait and our support of the government during this unprecedented public health crisis.

With science and technology guiding our every step, we collaborated with universities, government entities, and pioneers to generate effective tools to track and identify COVID-19 affected areas. In collaboration with the Ministry of Health and Kuwait University, we developed the Predictive Mathematical Model SARS-CoV-2. This model helps study the spread of virus infection in Kuwait and evaluate any containment strategy before its application.

Dasman Diabetes Institute was also the first in the Middle East to sequence virus and submit the findings to GISAID, a WHO supervised database. Our COVID-19 screening lab was inspected by the Virology Director of the Ministry of Health and approved as a Biosafety Level Lab 2, the highest Biosafety level in Kuwait.

In support of the Ministry of Health's COVID-19 efforts, Dasman Diabetes Institute launched the Pandemic Response & Emergency Resilience Program (ERP). This program allowed for volunteers to depute to different Ministry hospitals to aid those in the front-line or assist in running COVID-19 tests in the laboratory. We also created Pediatric and Adult COVID-19 Guidelines to help our patients manage their diabetes during the pandemic.

Dasman Diabetes Institute has enhanced and invested in its facilities, technologies, and the expertise behind them. However, the COVID-19 pandemic has forced us to adopt new and innovative strategies to achieve our goals. Our Medical Sector carried out telehealth appointments and shifted the paradigm of care to virtual consultations with ongoing online support. The Sector also created prevention guidelines for our patients and developed scientific, educational, and rehabilitative programs related to the COVID-19 pandemic.

Our Sectors embraced urgent short-term research initiatives to benefit our society while maintaining their long-term objectives to tackle diabetes. In 2020, Dasman Diabetes Institute published 94 publications, of which 61 are original research publications. Our original publications include 11 papers based on our COVID-19 research findings. Our Sectors have also attained 8 patents.

Dasman Diabetes Institute continues to expand its national, regional, and international network by enhancing its collaborative efforts. Our collaboration with the World Health Organization (WHO) was aimed at providing advanced training to raise diabetes healthcare standards in primary care centers in Kuwait. We also aimed to establish an effective electronic platform about diabetes research and enhance public awareness about diabetes.

In December 2020, the GeoHealth Lab, in collaboration with the University of Canberra, George Institute, and Public Authority for Food and Nutrition, launched the FoodSwitch App. This application is a comprehensive nutritional profiling system for food products in Kuwait, which in turn will help our research and advocate for improved food choices for the consumer.

Dasman Diabetes Institute was also awarded the Hamdan Award for the Best Medical College or Institute or Centre in the Arab World for its continuous efforts to address Diabetes in Kuwait through research, integrated prevention, training, and education.

Despite the uncertainty and unpredictability of this pandemic, Dasman Diabetes Institute has proven to be resilient. COVID-19 has presented an opportunity for the Institute to adapt, innovate, evolve, and thrive in adversity.

In conclusion, on this occasion, and on behalf of the staff at the Dasman Diabetes Institute, I express my heartfelt appreciation and gratitude to His Highness, the Emir of the State of Kuwait, Sheikh Nawaf Al-Ahmad Al-Jaber Al-Sabah, and to His Highness the Crown Prince, Sheikh Mishaal Al-Ahmad Al-Jaber Al-Sabah, and to His Highness the Prime Minister Sheikh Sabah Al-Khaled Al-Sabah - may God protect them - beseeching God Almighty to grant them success in moving our beloved country forward on the paths of progress and prosperity.

Dr. Qais Al Duwairi
Director-General
Dasman Diabetes Institute



DG
Directorate

PR and Media Services

The Public Relations (PR) and Media Services Department works with all DDI Sectors (DG Directorate, Research, Medical and Operations) to promote DDI's strategic objectives and initiatives. The Department uses multiple forms of communication to:

- Raise awareness on diabetes management, treatment, and prevention.
- Promote all DDI ongoing activities, campaigns, initiatives, and events.
- Reinforce the Institute's Mission, Vision, Values and Strategic Objectives.
- Continuously highlight DDI's accomplishments on mass and social media.

Based on the recommendations of the Centers for Disease Control, Prevention and the World Health Organization and the Ministry of Health, DDI postponed and/or cancelled any events that may attract many people. Based on these recommendations, the PR and Media Services considered the following risk factors during this process: presence or absence of COVID-19 case; exposure to the virus (challenges of social distancing); length and setting of the event; number of attendees; nature of the event.

Therefore, the PR and Media Services department utilized the Institute's social platforms and other online communication technologies to:

- Promote healthy behaviors to prevent the spread of COVID-19 in multiple settings (home, office, clinic, etc.)
- Promote health behaviors in persons with diabetes and prevent any complications.
- Encourage social distancing and the use of face masks.
- Maintain a healthy and safe environment for staff members. This includes utilizing communication platforms (Zoom, Microsoft Teams, etc.) for meetings, conferences, or training programs.

Key Objectives:

1. **Define DDI's Mission:** To address the diabetes epidemic in Kuwait through focused diabetes, research, integrated prevention, training, education, and treatment.
 - Establish clear and concise communication platforms for the delivery of a cohesive message.
 - Facilitate and promote the delivery awareness-raising programs and initiatives to its' stakeholders.
2. **Promote DDI's Vision:** To be the leading diabetes Institute in the Gulf Region and the Middle East.
 - Facilitate the development of training and educational programs through DDI's national, regional, and international collaborations.

Achievements:

130 | Health Awareness Videos

8 | Research videos and interviews

215 | Public Awareness Posts

659 | Awareness Tweets

List of Events and Activities of DDI 2020

Date	Description
JANUARY 2020	Dasman Diabetes Institute participated in Al Nowair Kindergarten located in Hawally for their health awareness event, where the team of the Institute offered glucose testing, medical consultations and PowerPoint presentations to the kids and their families.
	The Institute hosted and organized in collaboration with Blue Circle an event titled “Diabetes and Lifestyle”.
	The Institute, especially the nurses took part in ‘the International Nursing Conference 2020’ held in Jumeirah Hotel.
	The Institute organized the ‘Kick-Off’ training course for kids with type 1 diabetes (aged 11-16 years old) to help them self-control their dietary habits in order to help with managing their diabetes.
FEBRUARY 2020	DDI in collaboration with Amiri Hospital organized a series of clinical training sessions for healthcare professionals in the Institute’s Clinical Skills Center and meeting rooms.
	DDI organized for Dr. Richard Litman, Mr. Joshua Goldberg, Patent Attorneys from “Nath Goldberg Meyer” USA, to visit the institute for Patent Questions & Answer plus Mentoring session with our researchers and scientists in the Institute.
	DDI participated in the ‘Health Awareness Exhibition’ organized by the Ministry of Health and held at Directorate of Private Schools at Ministry of Education.
	DDI celebrated Kuwait’s National and Liberation Day with an employee open day. Sheikha Bibi Salem Al-Sabah, Director of Kuwait Healthy Living at Dasman Diabetes Institute presented a presentation at the Institute to all staff about the 1990-1991 Gulf War. This is on the occasion of the National and Liberation Day.
	DDI organized and held an open day event for all staff on the occasion of National and Liberation Day.
	The Geohealth Lab at the Dasman Diabetes Institute in collaboration with the George Institute of Global Health, the Public authority of Food and Nutrition (PAFN) and Adiliya Cooperative Society completed data collection for the FoodSwitch mobile App. A series of group visits to Adiliya Coop were organized to complete this project.

List of Events and Activities of DDI 2020

Date	Description
MARCH 2020	<p>March 4th is the World Obesity Day, and Dasman Diabetes Institute celebrated this day to tackle obesity.</p> <hr/> <p>The Institute collaborated with 'Al Kuwaiti Gadha' voluntary group to pass out medicines from Dasman Diabetes Institute to the elderly people as a COVID-19 precautionary measurement during lockdown.</p> <hr/>
APRIL 2020	<p>Dr. Hilal Al Sayer, Dr. Qais Al Duwairi and the Senior Management of the Institute honored 'Al Kuwaiti Gadha' voluntary group for their assistance.</p> <hr/> <p>A webinar titled 'Ramadan and Type 1 Diabetes for Kids and Teenagers' was organized by DDI.</p> <hr/>
JUNE 2020	<p>A webinar titled 'Managing Diabete During COVID-19 Times' was organized by DDI.</p> <hr/> <p>A webinar titled 'All You Need to Know About Insulin Pump for Kids and Teenagers' was organized by DDI.</p> <hr/>
JULY 2020	<p>A webinar titled 'All You Need to Know About Insulin Pump for Kids and Teenagers' was organized by DDI for the second time, based on demand.</p> <hr/> <p>A webinar titled 'Your Path for the Prevention of Diabetes' was organized by DDI.</p> <hr/>
AUGUST 2020	<p>An interactive online session titled 'Your Ask and We Answer' was organized by DDI to discuss all diabetes and COVID-19 related topics with the public.</p> <hr/> <p>An interactive online session titled 'All You Need To Know About Insulin Injections' was organized by DDI for the public.</p> <hr/> <p>Dr. Hilal Al Sayer, Dr. Qais Al Duwairi and the Senior Management of the Institute paid a visit to Kuwait Fire Service Directorate to honour them for their support in delivering patients medications during Cvoid-19 restriction times.</p> <hr/>
SEPTEMBER 2020	<p>A webinar titled 'Diabetes and Your Feet' was organized by DDI.</p> <hr/>

List of Events and Activities of DDI 2020

Date	Description
OCTOBER 2020	A follow up interactive online session titled 'Diabetes and Feet Care' was organized by DDI to discuss all diabetes and COVID-19 related topics with the public.
NOVEMBER 2020	An interactive online session titled 'Living with Diabetes' was organized by DDI for the public.
	A DAFNE course about 'Persistent Hyperglycemia Treated with Insulin' was organized by DDI.
	A DAFNE course about 'The Different Available Types of Glucometers' was organized by DDI.
	A DAFNE series of workshop about 'Carbohydrates Counting' was organized by DDI.
	On the occasion of World Diabetes Day, DDI's building was lit in blue color to celebrate this day and shared its pictures in blue on the International Diabetes Federation's website representing Kuwait.
	Prof. Fahd Al Mulla and Dr. Dalal Al Saeed from DDI presented at the seminar organized by KFAS about the role and contributions made by the local research and scientific community in support of the national response to the pandemic in the health sector.
	An interactive online session titled 'All You Need To Know About Type 1 Diabetes' was organized by DDI for the public.
	Dr. Dari Al Huwail and Dr. Saad Al Sharrah from DDI presented at the seminar organized by KFAS titled 'Data Sciences and the Pandemic of COVID-19', which was organized by KFAS.
	A DAFNE course about 'The Rule 15' was organized by DDI.

List of Events and Activities of DDI 2020

Date	Description
DECEMBER 2020	DDI wins the Sheikh Hamdan Award for the Best Medical College, Institute or Center in the Arab World.
	An event was held in Adailiya Cooperative Society attended by Dr. Qais AlDuwairi, H. E. the Australian Ambassador to Kuwait and other senior managers from the Institute and relevant authorities in Kuwait to launch the FoodSwitch App.
	A DAFNE course title 'Multiple Colors and the Same Meaning' was organized by DDI.

DDI filmed, produced and posted regularly many diabetes and health awareness material on its social media outlets. DDI organized many TV, Radio and press interviews and reports in both Arabic and English. DDI's Clinical Skills Center throughout the year organizes continuous training courses, i.e. First Aid, Basic Life Support, Airway Management, Trauma Management, CPR, etc. and participates in virtual events to promote their courses

List of Events and Activities of DDI 2020

January 2020

'Kick-Off' training course

The Institute organized the 'Kick-Off' training course for kids with type 1 diabetes (aged 11-16 years old) to help them self-control their dietary habits in order to help with managing their diabetes.



The International Nursing Conference 2020

The Institute, especially the nurses took part in 'the International Nursing Conference 2020' held in Jumeirah Hotel.



Disclaimer: Some of the photos were taken before the COVID-19 pandemic.

February 2020

National and Liberation Day

Dasman Diabetes Institute celebrated Kuwait's National and Liberation Day with an employee open day. Sheikha Bibi Salem Al-Sabah, Director of Kuwait Healthy Living at Dasman Diabetes Institute, presented a presentation at the Institute to all staff about the 1990-1991 Gulf War. This is on the occasion of the National and Liberation Day.



Health Awareness Exhibition

Dasman Diabetes Institute participated in the 'Health Awareness Exhibition' organized by the Ministry of Health and held at Directorate of Private Schools at Ministry of Education.



Disclaimer: Some of the photos were taken before the COVID-19 pandemic.

List of Events and Activities of DDI 2020

March 2020

Al Kuwaiti Gadha

The Institute collaborated with 'Al Kuwaiti Gadha' voluntary group to pass out medicines from Dasman Diabetes Institute to the elderly people as a COVID-19 precautionary measurement during lockdown.



April 2020

Delivery of medicines

The volunteer team of Al-Rawdha Mukhtariya, Capital Governorate, participates in volunteering the delivery of medicines to the deserved homes.



Disclaimer: Some of the photos were taken before the COVID-19 pandemic.

August 2020

Kuwait Fire Service Directorate visit

Dr. Hilal Al Sayer, Dr. Qais Al Duwairi and the Senior Management of the Institute paid a visit to Kuwait Fire Service Directorate to honour them for their support in delivering patients medications during COVID-19 restriction times.



List of Events and Activities of DDI 2020

September 2020

Signing a joint agreement

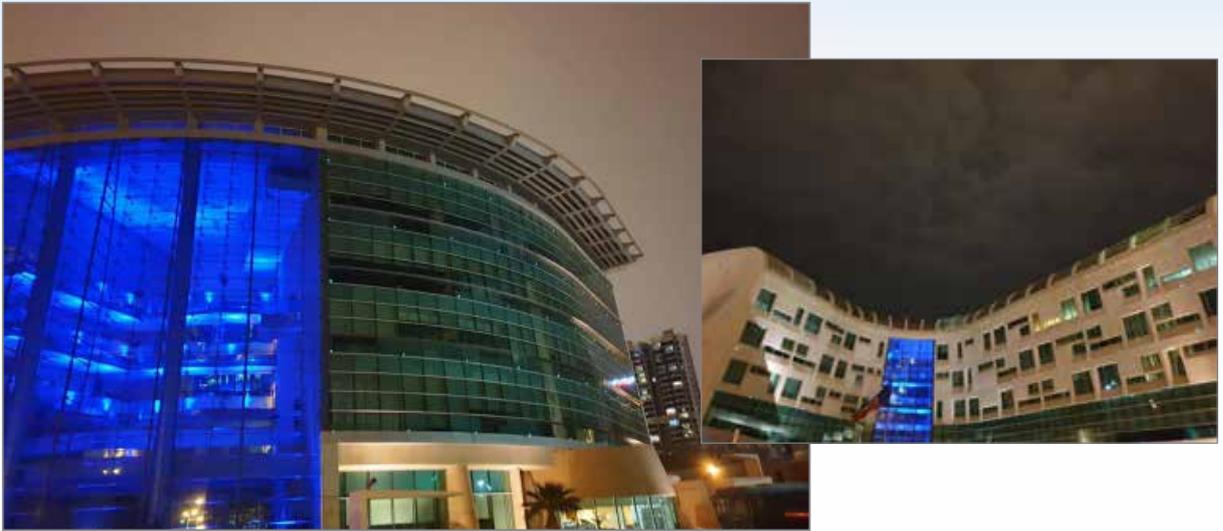
Dasman Diabetes Institute and Bayt Abdullah, Kuwait Association for the Care of Children in Hospitals (KACCH), sign a joint cooperation agreement to exchange experiences and share resources. The meeting, was attended by Dr. Hilal Al-Sayer, Chairman of the Board of Trustees of the Institute and Chairman of the Board of Directors of Bayt Abdullah and the Kuwait Society for the Care of Children in Hospitals, as well as Mrs. Margaret Al-Sayer, Founding Director, Dr. Maytham Hussein, CEO of Bayt Abdullah and KACCH, and Dr. Qais Duwairi, Director General of Dasman Diabetes Institute, and Dr. Faisal Al-Refaei, Chief Operating Officer of the Institute.



November 2020

Living with Diabetes

An interactive online session titled 'Living with Diabetes' was organized by Dasman Diabetes Institute for the public.



December 2020

DDI wins the Sheikh Hamdan Award for the Best Medical College, Institute or Center in the Arab World

Dasman Diabetes Institute was granted the Sheikh Hamdan Award for the Best Medical College, Institute or Center in the Arab World. This award was announced on December 9, 2020 during a televised ceremony on the Sama Dubai channel. Award winners were unveiled on the Burj Khalifa tower.





Geohealth Lab at DDI completed data collection for the FoodSwitch mobile App



Chairman of the Board of Trustees of the DDI, Dr. Hilal Al-Sayer and Director General of Dasman Diabetes Institute, Dr. Qais Al-Duwairi mediates a group of # Kuwaiti_ volunteers.

Strategy Management Office (SMO)

Strategy Management Office staff distribution:

Title	Number of People
Acting Strategy Management Office Manager	1
Strategy Senior Specialist	2
Quality Specialist	1
Total	4

The Strategy Management Office (SMO) was established in February 2019 to ensure and improve the level of strategy management, align activities to strategic initiatives and deliverables, ensure clear accountabilities, and to develop frameworks and knowledge management platforms to enhance resource coordination and organizational productivity for the overall DDI Strategic Plan.

The SMO is responsible for the following programs within DDI:

- DDI Strategic Plan: Implementation and Monitoring
 - 2018 - 2023
- Institutional Workplans
 - Strategically aligned activities and respective deliverables
- Quality Assurance
 - Accreditation Canada
- Strategic Risk Management
 - Assist in establishment and coordination of Institutional Enterprise Risk Management

The Strategy Management Office activities revolve around the following implementation disciplines which are underpinned by strong project management principles:



SMO 2020 Critical Institutional Milestones

Some of the main critical milestones achieved in 2020 encompass development of institutional frameworks, annual workplan strategic alignment and adjustments, relationship management and generation of executive reports for the institute.

Major milestones for 2020 include but are not limited to:

1. Development of institutional workplans
2. Establishment of Risk and Quality Assurance Committees
3. Maintenance of Accreditation Canada
4. Development of a benchmark report
5. Effective stakeholder engagement

1. Institutional Workplans (WP)

Strategically aligned annual operating plans for Dasman Diabetes Institute

Value:

- The DDI strategic plan outlines clearly defined initiatives throughout the 5-year plan. The institutional workplans ensure alignment of activities to these initiatives and provide a platform of the sectorial annual progress for each strategic goal
- SMO monitors, supports, and reports progress throughout each year via a performance management framework which promotes productivity

2020 Impact:

- SMO developed both Weight Setting and Target Setting workplan mechanisms and integrated them into the workplans to ensure that strategically aligned focus areas continue to enhance performance and drive productivity
- The impact of COVID-19 was highlighted, and activities/deliverables were revised and adjusted accordingly within the institutional workplans
- The institute was able to maintain progress and achieve critical milestones in 2020, despite the pandemic, delivering its strongest year in performance till date.

2. Risk and Quality Assurance Committees

The systemic monitoring and evaluation of various aspects within the Institute ensures risks are identified and mitigated as part of delivering sustainable strategic outcomes and furthermore, that standards of quality are being met and maintained

Value:

- To assist the Institute's risk and quality assurance by actively partaking in the:
- Enterprise Risk Management (ERM) committee: to address and reduce high priority institutional risks, challenges and/or potential delays
- Quality & Safety Management committee: to address institutional quality and safety incidents, risks, challenges, and delays

2020 Impact:

- Establishment and launch of the ERM committee, annual plan, and matrices to identify actual and potential risks, and risk mitigation plans to help address them. This further provides a platform to support in delivering the DDI strategy and its objectives through these risk mitigation plans for long-term sustainability
- Establishment and launch of the Quality and Safety Management committee framework and annual plan

3. Accreditation Canada (AC)

To assist the Institute's quality assurance via the AC Standards and working groups

Value:

- Provides international accreditation with a well-renowned international accreditor such as AC to improve the quality of care to patients against international guidelines, quality, and criteria. This supports DDI's vision in becoming and maintaining its recognition as a center of excellence, especially in the aspect of *Quality of Care* to patients and the community

2020 Impact:

- Accreditation Canada contract renewal
- AC deliverable extension factoring in delays due to COVID-19 Pandemic
- Maintained 9 standard working groups
- Kicked-off the development of integrated quality improvement plans

4. DDI Benchmark Report

To evaluate how DDI compares to other national and international institutes using quality performance metrics and industry best practices

Value:

- To understand and map DDI's current position from a research quality and output perspective on both a national and international level

2020 Impact:

- Produced comparative data to enhance DDI target setting on an annual basis and supports the achievement of higher research outputs and outcomes, including a return on investment model
- Identified areas of strength within DDI and provided guidance on DDI gap areas for further enhancement to set long-term goals and enhance outcomes

5. Stakeholder Engagement and Governance

Systemic identification, analysis, planning and implementation of actions designed to engage and gain support from stakeholders

Value:

- SMO helps ensure that DDI Executive Management builds a transparent communication with key stakeholders on delivering the DDI long term objectives
- Provides executive-level dashboard reports and ensures the inclusion of all relevant parties and decision makers to review and provide vital input in shaping the direction and steer of DDI

2020 Impact:

- Approved strategically aligned activities, workplans, target and weight setting mechanisms
- Review and endorsement of all DDI pandemic response actions and impact on activities
- Regular reporting and updates for strategic management
- 2021 Activity Plan and WP Approval
- Participation in Board meeting for respective feedback and endorsements

SMO 2020 Activity Milestones vs. Plan

COVID-19 has had and continues to have a huge impact on multiple industries across the world in 2020, particularly as a direct result of governmental issued lockdowns and curfews which is unfortunately ongoing. Nevertheless, the Strategy Management Office continued to run at 100% capacity and achieved all planned deliverables with no delayed nor suspended activities for the year as illustrated below:

SMO Activity Milestones Completed in 2020 vs. Plan	Q1	Q2	Q3	Q4
Planning/Forecasting				
WP Migration to KFAS Template	■			
Weight & Target Setting Mechanisms	■			
Achievement Report 2019	■			
ERM Plans/Matrices/RASCI			■	
Institutional Workplans 2021				■
Institutional Alignment with Strategy				
Institutional Workplans Review 2020	■	■	■	■
Monitoring & Reporting	■	■	■	■
Develop Frameworks: ERM / QSM Management	■			■
Update Strategic Plan				■
Quality Management				
Accreditation & Compliance Monitoring	■	■	■	■

SMO Activity Milestones Completed in 2020 vs. Plan	Q1	Q2	Q3	Q4
Quality Improvement Plans Kick-off				
P&P Management System				
Stakeholder Engagement				
Reporting & Updates				
Additional Tasks				
DDI Benchmark Report				
Data Validation 2017-2019 <i>(Support in KFAS New Strategy Development)</i>				

Key:

ERM	:	Enterprise Risk Management
P&P	:	Policy & Procedures
QSM	:	Quality & Safety Management
RASCI	:	Responsible/Accountable/Support/Consult/Inform
WP	:	Workplan

Number of Plans/Reports Generated by SMO in 2020:

Plans/Report	Quantity
Frameworks	2
Reports	3
Executive-level Dashboards	3
Institutional Workplans (2020 & 2021)	16
Benchmark Analysis	1
Strategic Plan Re-alignment	1
Total	26



RESEARCH SECTOR

RESEARCH SECTOR

The Research Sector is comprised of a pool of experienced researchers who apply a multi-disciplinary approach in the study of diabetes and its complications. It also occupies a central position within DDI. To achieve DDI’s Mission of addressing the diabetes epidemic in Kuwait, the research strategy is incorporated in the first two DDI strategic initiatives.

Research Strategy

The development of diabetes depends on multiple factors as it involves complex genetic pathways, in addition to the lifestyle and environmental factors that triggers the metabolic disease. Thus, at DDI, research experts from different disciplines collaborate to breakdown the diabetes development process and to find new personalized prevention and therapy concepts. To achieve this, DDI established a research strategy that focuses on:

- Undertaking integrated research initiatives using biomedical, population health and clinical expertise.
- Initiating, measuring, and Evaluating and enhancing the prevention and management of diabetes via focused clinical translational research.

Epidemiology, Etiology, Genetics and Pathophysiology of Diabetes:

Biomedical, population health, genetics, clinical research through multi-disciplinary involvement focused on identification of determinants prevent and manage diabetes

Prevention and Management of Diabetes:

Research activities to support in the development of interventions to help manage diabetes and associated conditions across various population segments.

DDI’s Research Direction encompassed within DDI’s Strategy

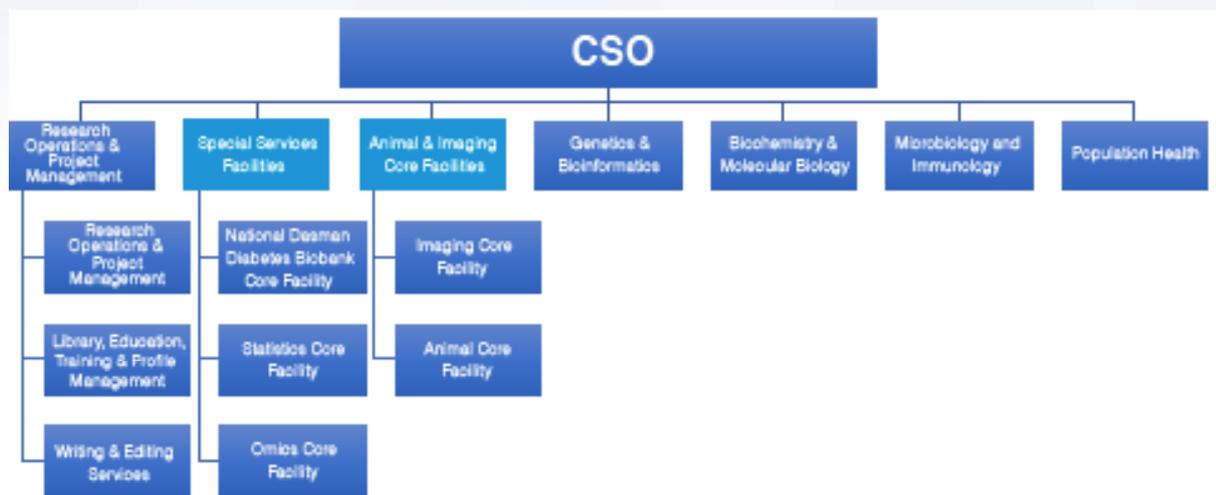


DDI’s Multidisciplinary Research Approach

Research Sector Structure

The Research Sector is made up of four Biomedical Research Departments that carry out the research activities, which are overseen by the Chief Scientific Officer (CSO). The Research Departments are supported by Research Operations and Project Management and Core Facilities. These Research Departments focus on projects within the specific research themes in the Research Strategy:

1. Genetics/genomics related to diabetes and metabolic diseases
2. Epidemiology and public health aspects of diabetes and its complications
3. Pathophysiology of diabetes and its complications
4. Clinical care research and clinical trials



DDI's Research Sector Structure

RESEARCH SECTOR MANAGEMENT

Chief Scientific Officer

The Chief Scientific Officer (CSO) oversees the research activities carried out at DDI, providing a high-quality, solid infrastructural platform and an integrated translational research ecosystem for all aspects of research. The CSO responsibilities include:

- Critically evaluating the research methods and findings of health outcome studies
- Leading and maintaining DDI's reputation by fostering the highest level of cooperation, integrity, objectivity, responsiveness, and overall transparency in the analysis of evidence on health care interventions
- Participating as an active member of the senior management team with the Director General, Chief Operations Officer (COO), and Chief Medical Officer (CMO), to shape the strategic direction and ensure the operational excellence of DDI
- Managing a multi-center network of academic collaborators at both a national and international level
- Oversee, direct, and coordinate the implementation of the research strategic plan and ensuring collaboration among departments, enable succession planning and skills transfer
- Creating a multi-disciplinary research approach that enhances inter-collaborations to achieve strategic goals and objectives

The CSO is responsible for the overall steer and direction of research at DDI, and thus ensures DDI's research is focused on four key areas:

- **Basic Science:** Basic science researchers seek to understand fundamental aspects of genetics, molecular biology, cell and developmental biology, and tissue regulation.
- **Translational Research:** Translational research facilitates the movement of new ideas and treatments from the laboratory to the clinic, as well as the movement of clinical observations from the clinic to the laboratory.
- **Clinical Research:** Pushing the envelope of early detection and treatment, personalized care, and immunotherapy are key to achieving our mission.
- **Prevention and Personalized Risk Assessment:** Prevention is a cornerstone of DDI in preventing Diabetes.



Major Achievements 2020

1. Driving Innovation

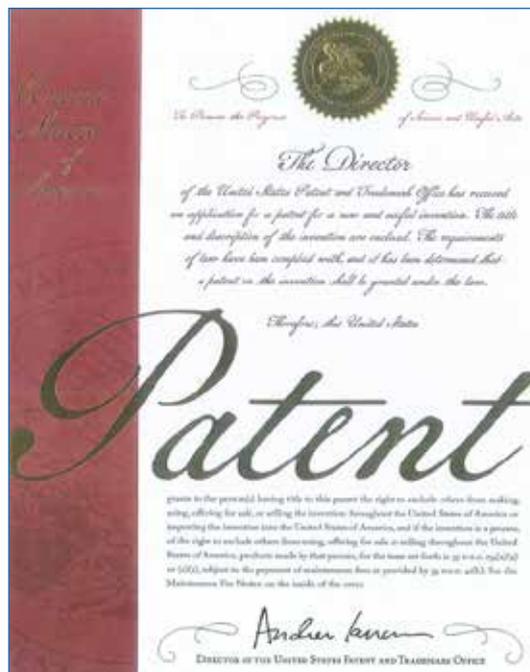
Patent and Research Translational Office

The Patent & Research Translation Office (PORT) supports the development while protecting the rights of DDI's research to transfer to industry, organize multinational collaborative relationships to conduct research while developing technologies of local, regional, and global value. Eight patents are in various stages, per below.

Patent Status/Stages	Value
New Patents Filed in 2020	1
Approved/Granted Patents in 2020	1
Ongoing Patent applications/filings from 2019	6
Total	8

Details of Approved Patent at the United States Patent and Trademark Office:

Docket No.	Title of Invention(s)	Inventors	Co-Inventor(s)
33024.00	Method for preventing progression to Metabolic Syndrome	Prof. Fahd Al Mulla	Rasheeba Nizam Dr. Ashraf Madhoun

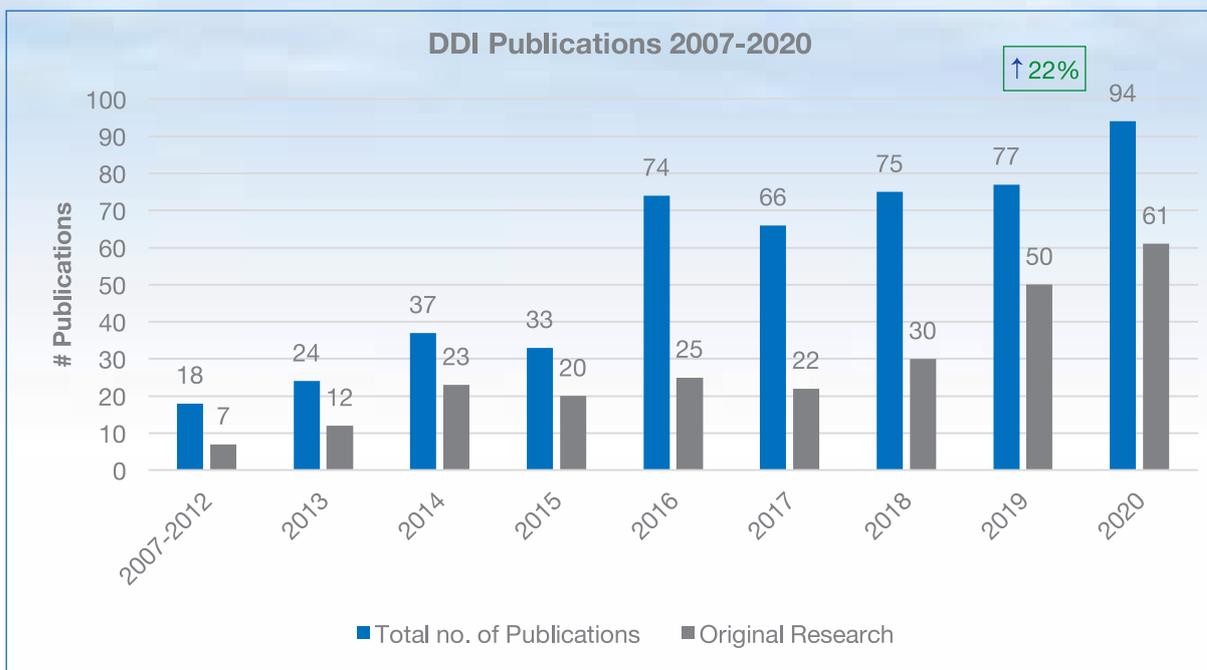


2. Enhanced Research productivity

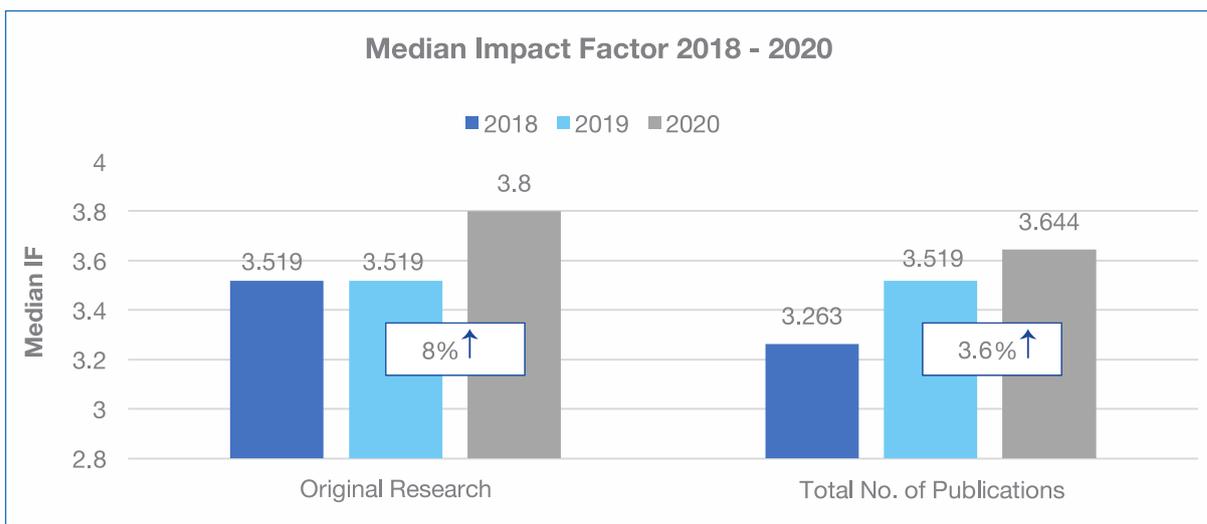
This encompasses all Research conducted within DDI.

2.1 Publications Output and Quality:

Publication output increased by 22% when compared to 2019.



2.2 Research Quality output increased by 8% when compared to 2019 for original research



3. Researcher Productivity enhancement via:

3.1 Research Evaluation Criteria (EC)

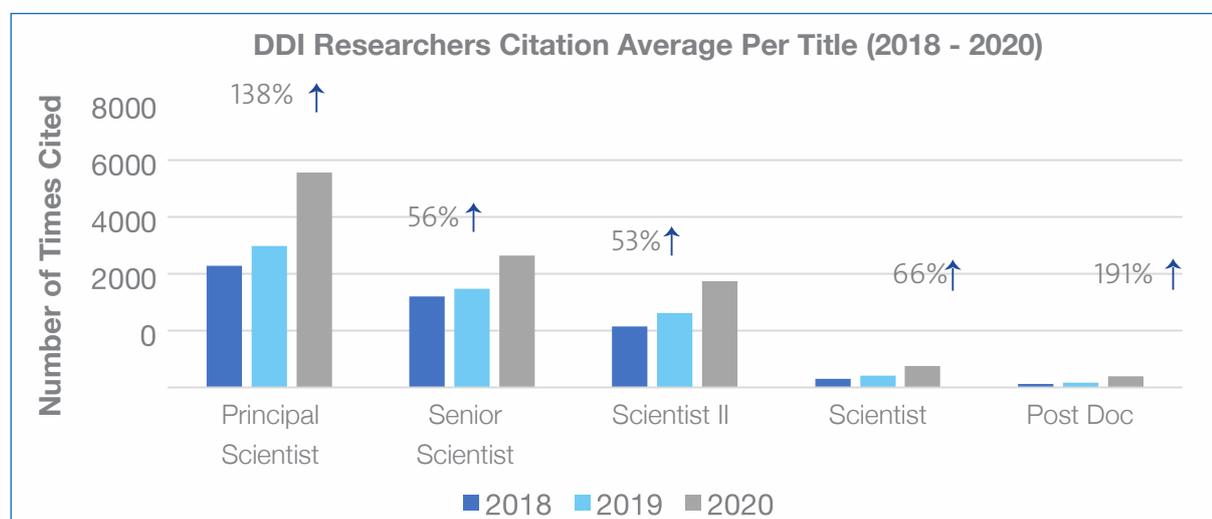
2020 witnessed a surge in researcher productivity in both quantity and quality, which is represented in the EC figures per scientific title below when compared to 2019:

Scientific Title	Increase from 2019 %
Principal Scientist	138%
Senior Scientist	56%
Scientist II	53%
Scientist	66%
Post-doc	191%
Average % Increase	118%

3.2 Researchers Citation Average per title:

As a result of the above, DDI also experienced an increase in the researcher citation average per scientific title, 2020 being the best year thus far, with Post-Docs achieving the highest percentage increase of 139% when compared to 2019:

Scientific Title	Increase from 2019 %
Principal Scientist	52%
Senior Scientist	33%
Scientist II	43%
Scientist	85%
Post-doc	139%
Average % Increase	71%



Public Office for Research Translation and Liaison (PORTAL):

PORTAL is an informative scientific educational platform for the public which conveys scientific discoveries and progress in a simplified way and educates the public about the important work happening at DDI by various research groups and leaders. It was established in 2019 to educate and engage the public and community in DDI's research performed and scientific breakthroughs while informing the public in a simplified/transparent way about the impactful research work happening at DDI.

Aims:



No breakthrough can be achieved in Research without the willingness of people to participate in discoveries for the benefit of all of humanity, which is embedded in DDI's culture. PORTAL aims to engage the public to and promote research to enhance research participation for the overall scientific enhancement in Kuwait.

Duties of the PORTAL Office

- Support the position of the institute as a reputable and leading diabetes research institute on a regional and international level
- Support with press/media releases to the general public and institutions concerning translational research updates, findings, and announcements
- Coordinate with the research and medical teams involved in research projects to develop content to promote research activities conducted at DDI

2020 Main PORTAL Videos

Many videos have been generated for public awareness on research. Each video can be located at: <https://www.dasmaninstitute.org/media/>

The main ones include:

1. Professor Fahd Al-Mulla explains the genetic sequence of the emerging COVID-19 virus
2. Genetic Adaptations to Extreme Conditions in the Middle East Linked to Metabolic Syndrome.
3. Combating SARS-CoV-2 with Precision Medicine
4. Hydrogen Sulfide Treatment Moderates Type Two Diabetes-Mediated Skeletal Muscle Loss
5. Performance of the Next Genetic Sequencing Platforms in Diagnosing ADPKD



Launch of the Quarterly Research Newsletter

To increase both internal and public awareness and showcase DDI's research activities and achievements, a research newsletter is published every quarter and circulated internally, amongst stakeholder and the public (figure 5). Please refer to Appendix II for the detailed newsletters or visit DDI's website for further information (<https://www.dasmaninstitute.org/>).



Committees

The CSO contributes and provides scientific leadership and steer in many committees within DDI in multiple capacities which include:

- Vice-chair on the Research Audit and Review Committee (RARC)
- Member of the Data Governance Council (DGC) at DDI
- Member of the MMI-DDI Supervisory Committee
- Member of the Patent and Research Translational Office
- Member of the Senior Management Committee

International collaborative consortiums

To enhance joint alliances, DDI joined 10-13 consortiums during 2020. Consortiums give multiorganizational groups the opportunity to coordinate, network and pull resources together for common well-defined scientific goals.

The main consortiums are outlined below:

Collaborative Consortiums	
1	Genetic Investigation of Anthropometric Traits (GIANT)
2	Global Lipids Genetics (GLGC) at Broad Institute (USA)
3	Weill-Cornell Medicine (Qatar and New York) on genome data sharing & integration
4	Science, Technology, and Innovation Partnership. European Union and GCC
5	Personalized Medicine Coalition
6	Global Initiative on Sharing All Influenza Data (GISAID)
7	NCD Risk Factor Collaboration (NCD-RisC)
8	COVID Human Genetic Efforts (CHGE)
9	COVIDIAB Registry
10	Global genomic medicine collaborative (G2MC)

Research Operations and Project Management Department

The Research Operations and Project Management (ROPM) Department provides administrative support in all areas of DDI research and facilitates the communication among the different departments. Working alongside the different research departments and core facilities, the ROM department is a management platform responsible for standardizing project and operations-related governance processes and enabling the sharing of resources, methodologies, tools, and techniques. The functions of the ROM department include but are not limited to:

- **Research Operations, Project Management and Strategy Planning:** All research-related projects are coordinated by the ROM department, which ensures the appropriate use of resources, budgets and timelines, compliance with guidelines, analysis of research outputs and overall management of research activities. In addition, the ROM supports research departments achieve their objectives by monitoring and managing their activities according to the DDI research Sector 5-year strategic plan.
- **Library, Education, Training and Profile Management:** In the scope of ROM, the library provides a collection of print and electronic resources that support the research needs of the Institute and offers a variety of educational programs for effective use of information sources. The library services also coordinate the organization of research scientific programs, seminars, and lectures, and catalogue all new publications from DDI.
- **Publication Management, Writing and Editing Services:** ROM supports researchers delivering their research outputs, in the form of publications in peer-reviewed journals, abstracts and presentations in internationally recognized conferences. The writing services provide a streamlined process to facilitate the writing and editing of research publications, by ensuring compliance with plagiarism and ethical guidelines, and improving the overall quality of the manuscripts prior to publication.

Department Staff

Role	Number of staff
Head of Department	1
Librarian	1
Specialist	2
Total	4

Key Objectives

The key objectives of the ROM Department are to establish, implement and maintain robust management supportive platforms across the research Sector, which include:

- Research Management System: for research proposals and project management, strategy roll out, implementation and monitoring, research outcome/output reporting
- Integrated Interface for Research and Operations Sectors: streamline all related operations-related activities within the Research Sector
- Publication Management and expert scientific writing/guidance platform
- Library management, education, and training support: a facilitative platform for journal and library access and researcher profiling

Committees

The ROPM team joins part of multiple committees within DDI, which include:

- Research Audit and Review Committee (RARC)
- MMI-DDI Supervisory Committee
- Patent and Research Translational Office Committee
- Purchasing and Procurement Committee

Major Operational Milestones 2020

Operational Management & Strategic Support:

- Reviewed & Validated 18-20 Research Evaluation Criteria Reports
- Support in the production of the National and International Benchmark Analysis

Project Management (Governance)

Number of Project Proposals: 15

All proposals follow a standardized ISAB approved project governance process. DDI's research follows an approved research strategy. DDI proposals are continuously refocused and streamlined to support in the attainment of DDI's Mission and Vision. Additionally, 2020 was an unprecedented year with the COVID-19 pandemic and as such, research proposals decreased by 60.5% vs. 2019.

Breakdown of the 15 project proposals is indicated below:

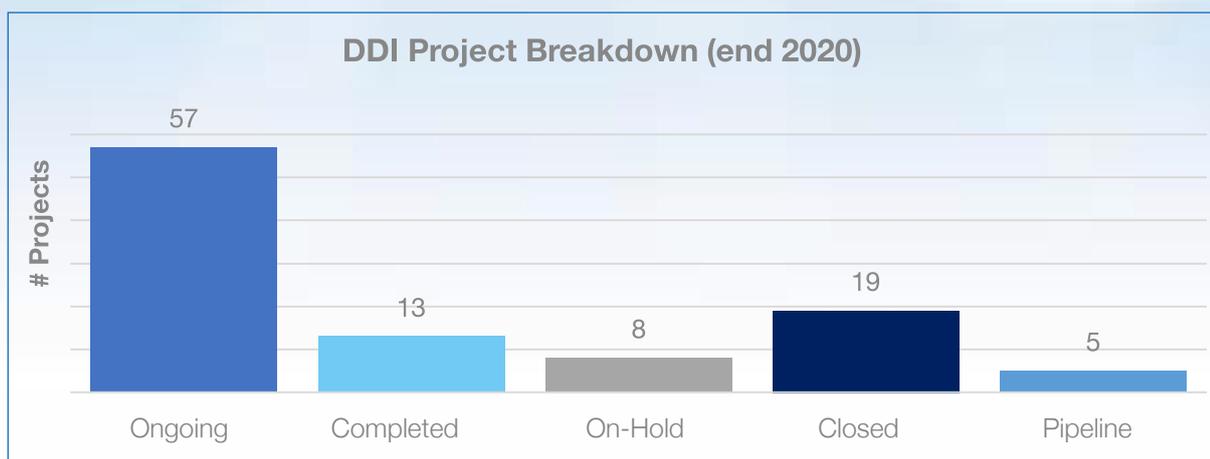
15 | Reviewed

10 | In process

5 | Approved

Research Management Systems

- Continued roll-out of Research Information Management System (PURE)
- Launch of the Project Monitoring & Evaluation System: Project status review below:
- There were 57 ongoing projects as at the end of 2020. Project approvals follow a standardized process for approval (ISAB approved project governance) with all new projects aligned and contributing to the approved DDI Strategic Plan, i.e. DDI Initiatives 1-3 and the Research Strategy.

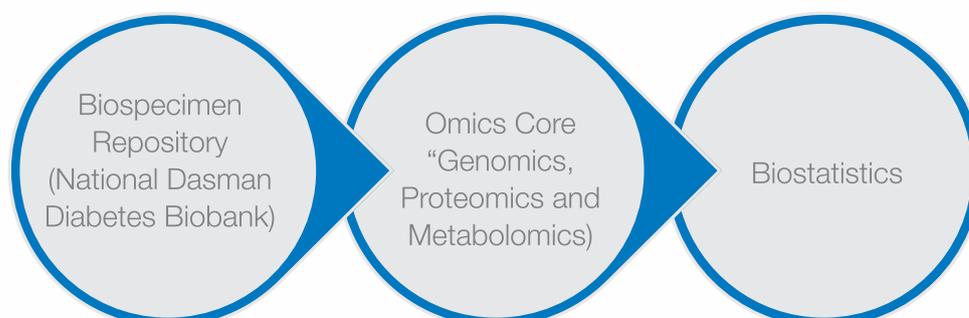


Note: the above project values are inclusive of all projects within DDI across all Sectors.

RESEARCH SECTOR DEPARTMENTS

1. SPECIAL SERVICES FACILITY

The Special Services Facility is a Core Facility and is composed of three main domains:



National Dasman Diabetes Biobank

The National Dasman Diabetes Biobank (NDDDB) offers DDI and collaborators repository services to conduct short and long-term research projects related to diabetes and its complications. The NDDDB's wide range of services include sample processing and fractionation, storage, testing and nucleic acid isolation, among others. The NDDDB is a member of the European, Middle Eastern and African Society for Biopreservation and Biobanking. It is a Biosafety Level 2 laboratory which specializes in the processing of blood and other body fluids, tissue samples (for histology and immunohistochemistry purposes) and cell culture. The NDDDB facilities include secure sample storage rooms with -80°C freezers and liquid nitrogen tanks. NDDDB houses over 37,580 research participants' samples and tracks more than 315,723 biological specimens for freezer inventory using a sample management system (Tissue Auditor, Infonetica Research Solutions, United Kingdom).

Omics Core Facility

The Omics Core Facility houses high-end genomics, proteomics, and metabolomics specialized equipment.

The Genomics Core, one of the most advanced facilities of its kind in Kuwait, is aimed at deciphering the genetic determinants of obesity and diabetes in Kuwait and its associated traits. Given the uniqueness of the genetic component of the population of Kuwait, special attention has been given to establishing a state-of-the-art facility that can decode the Kuwaiti Genome. This platform provides research technologies and instrumentation for high-throughput genomics, epigenomics and transcriptomics complemented with an extensive set of technologies to study genome structure, dynamics, and function.

Complementing its Genomics Core, DDI is also equipped with advanced Proteomics and Metabolomics Core equipment. Equipped with state-of-the-art mass spectrometry instrumentation (which include the Thermo Scientific™ Q Executive™ HF hybrid quadrupole-Orbitrap and the Orbitrap Velos mass spectrometer), the Proteomics/Metabolomics Core can accurately identify and quantify proteins, peptides, lipids, glycans and other small molecules. In addition, untargeted proteomics/metabolomics profiling helps identify and pathway-map the proteins and metabolites present in a biological system. Given that metabolites are the end-products of processes occurring in cells, tissues, and organs, metabolomics provides a snapshot of the biological system not possible with other techniques.

Biostatistics

The Biostatistics domain provides statistical consultation to DDI researchers and collaborators in project planning, study design, implementation, analysis, and presentation of research findings, ensuring statistically sound approaches for publication in peer-review journals. Analysis of DDI clinical data for efficacy of diabetes treatment on glucose level.

Department Staff

The department includes the following staff:

Role	Number of staff
Head of Department	1
Biobank Manager + Research Associate II	1
Omics Manager + Senior Research Assistant	1
Team Leader	1
Research Associate	2
Senior Research Assistant	2
Research Assistant	1
Senior Research Coordinator	2
Research Coordinator II	3
Research Technician II	1
Research Technical Specialist	1
Total	16

Key Objective

- Facilitate human sample collection and storage in the biobank.
- Provide a well-established omics platform for biospecimen analysis and statistical support for data analysis.

Number of Projects and Publications

All projects in DDI are supported by the Special Services Facility resulting in the involvement of special service facility activity in almost all DDI publications.

Number of projects: A total of about 86 projects currently in associated and collaboration with other departments. Support multiple ongoing clinical trials including one trial on a diabetes drug called Pioglitazone against COVID-19.

1200 | Number of research participants in 2020

2500 | Blood samples processed

9 | Number of research publications supported by Special Service Facility in 2020

2. ANIMAL AND IMAGING CORE FACILITY

The Animal and Imaging Core Facility offers researchers useful biological systems and imaging tools to facilitate diabetes research. Animal models are common in biomedical research since their biological systems, genetic structure and immunological responses closely mirror those of humans. Animal models are used at different stages of the research process, including the discovery, development and testing of new pharmaceuticals.

The Animal and Imaging Core Facility provides training on the use of animals for research, according to international guidelines and standards, and offers animal care and handling services, including animal breeding, drug treatment and blood/tissue collection. The Department has a state-of-the-art zebrafish housing facility, which aims to promote zebrafish research techniques, including embryo microinjection, CRISPR/Cas9 technology and morpholino oligonucleotide-mediated antisense gene-specific knockdowns. In addition, the department is equipped with advanced imaging

systems and equipment, which allow tissue microdissection using the Laser Microdissection System, intracellular trafficking of fluorescence proteins using Live Cell Image systems, and organ and tissue specific trafficking of molecules using in vivo imaging (IVIS) spectrum CT imaging system.

Department Staff

Role	Number of staff
Head of Department/Senior Scientist	1
Manager of Animal Facility/Scientist II	1
Veterinarian	1
Research technician II	1
Total	4

Key Objective

- Conduct of animal model research as per international and institutional guidelines and standards
- Guidance and hands-on training of DDI researchers and interns involving animal care and handling, biocontainment, inoculations, blood/tissues sampling, survival surgeries, euthanasia, etc.
- Assuring provision of rodents and fish for animal model research through continued in-house breeding
- Provision of in vivo imaging facility (IVIS)
- Broaden the scope of experimental animal techniques available to DDI researchers and collaborators

Awards and Achievements

- Guided, trained and/or helped 6 research staff in concern with animal use for research including animal husbandry, handling, injections, blood and organ collection, euthanasia, breeding, and other animal pathophysiology techniques and procedures
- Operetta Imaging System in operation
- Active in-house colony breeding: Rodents ≈740 rodents, Zebrafish ≈1230
- Animal use for experimental research: Rats = 77, Mice = 369
- Establishment of the 3 genetic knock-out (KO) fish models using CRISPR technique under a collaborative training and technology transfer initiative with Pierre Drapeau Lab in Montreal Diabetes Research Institute (MDRI-CHUM) Canada, as part of MMI-DDI project, targeting the use of zebrafish as a promising and cost-effective model for diabetes research

Number of Projects

4 | Overall 4 | Ongoing

Number of Publications Supported by the Animal & Imaging Facility

7 | Publications

Genetics and Bioinformatics Department

The Department primarily focuses on the identification and characterization of genes and gene variants increasing the risk of obesity, diabetes, and related complications in Kuwaiti populations. We utilize high throughput genome wide technologies and computational methodologies, including genome-wide association studies (GWAS), whole genome/exome sequencing, whole transcriptome profiling and high-resolution genotyping. The department also focuses on the clinical significance of the identified gene/variants to develop a translational medicine approach. The department investigates the molecular function of the identified variant using different cell types and animal models through innovative techniques such as intracellular signaling studies, CRISPR/cas9 technology, gene over-expression and chromatin immunoprecipitation (ChiP). Other current areas of research include investigating epigenomic alterations, gene-gene interactions, microRNA profiling and development of panels consisting of population-specific markers for predicting the risk outcomes of complex disorders.

Department Staff

Role	No of Staff (FTE)	Other Departments Research Support FTE	Secondments
Head of Department (CSO)		1	
Principal Scientist	1		
Senior Scientist (Animal & Imaging)		1	
Scientist	2		2
Post-doctoral Fellow	2		
Research Associate II	4		
Research Technical Specialist	1		
Total	10	12	14

Technician Support (Other Depts)

Role	Number of staff
Other Departments	
Research Technicians (Animal & Imaging Dept)	1
Total	1

Key Objective

- Establish a next generation sequencing (NGS) and bioinformatics pipeline for RNA sequencing, genome-wide miRNA sequencing and high-resolution human leukocyte antigen (HLA) typing.
- Delineate genetic factors predisposing to different forms of diabetes by family-based linkage studies, focusing on single/multigenerational Kuwaiti families with maturity onset diabetes of the

young (MODY), latent autoimmune diabetes in adults (LADA), gestational and neonatal diabetes, other congenital diabetes (autosomal dominant, recessive), and rare metabolic diseases.

- Develop Kuwait-specific risk assessment tools and panels for metabolic disorders.
- Perform genetic characterization of mitochondrial DNA variants linked to diabetes and related metabolic disorders.
- Establish functional assays and animal models to elucidate the regulatory role of specific variants/genes implicated in diabetes and obesity.
- Develop a Kuwait Variome database cataloging population and/or disease-specific genetic variants.
- Evaluate the role of identified risk loci in the prevention and treatment of diabetes through close collaboration with the medical Sector.
- Validate electrochemiluminescent (ECL) assays for the precise detection of diabetes-related autoantibodies.

Awards and Achievements

Number of Projects in 2020

5 | Completed 12 | Ongoing

Number of Publications

37 | Publications (including inter-departmental collaborations)

Number of Patents Approved

1 | Patent

Patent Details

1	A Method for determining predisposition to Metabolic Syndrome	Patent Filed and approved / granted
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International Collaborations

- McGill University
- University College London

Biochemistry & Molecular Biology Department

Type 2 Diabetes has reached alarming rates worldwide, in particular in the Gulf region and Kuwait due to high rates of obesity. The research of the Biochemistry and Molecular Biology department is focused on enhancing our basic understanding of metabolic signaling pathways involved in dyslipidemia, oxidative stress and insulin resistance, which will allow us to develop improved identification methods for those at risk of T2D. It will also advance our ability to predict the complications of the disease and aid in the design of precisely tailored different therapies. We are also interested in studying the impact of anti-diabetic treatments such as GLP-1/GIP receptor agonist (Tirzepatide) treatment vs bariatric surgery on insulin signaling and insulin resistance as well as lipid related biomarkers such as ANGPTL8. Deciphering the distinct mechanisms by which dual agonism of both GLP-1 and GIP receptors and bariatric surgery may improve glycemic control are of great importance.

Department Staff

Role	Number of Staff
Head of Department/Senior Scientist	1
Scientist	2
Post-doctoral Fellow	2
Research Associate II	1
Research Associate	3
Research Assistant	1
Total	10

Departmental Key Objectives.

1. Deciphering the role of ANGPTL related proteins and how they contribute to insulin secretion and lipid metabolism.
2. Assessing the impact of bariatric surgery on adipose tissue browning and the role of Meteorin-like protein and irisin.
3. Evaluating the effect of Tirzepatide (GLP1/GIP1 agonist) vs Bariatric Surgery on insulin signaling and insulin Resistance and Lipid Metabolism.
4. Investigating the role of pioglitazone, a PPAR- γ agonist in the treatment of type 2 diabetes people infected with SARS-Cov2.

Awards and Achievements

Number of Projects in 2020

2 | Completed 12 | Ongoing



Number of Publications

24 | Publications (including inter-departmental collaborations)

Number of Patents Approved

2 | Patents (underway: filing process)

Patent Details

1	Use of MicroRNA-103 as Inhibitor for dyslipidemia by repressing ANGPTL8 gene	Dr. Mohamed Abu-Farha, Dr. Jehad Abubaker & Prof. Fahd Al-Mulla
2	Use of MicroRNA-181d as Inhibitor for dyslipidemia by repressing ANGPTL3 gene	Dr. Jehad Abubaker, Dr. Mohamed Abu-Farha & Prof. Fahd Al-Mulla

International Collaborations

- Prof. Marc Prentki, MDRC director- The Montreal Diabetes Research Center MDRC – studying intracellular roles of ANGPTL8 in lipolysis.
- Prof. Abdul Ghani, UT health San Antonio, TX, USA- Differential regulation of ANGPTL proteins and other diabetic biomarkers by Insulin vs Glucose using euglycemic and hyperglycemic-hyperinsulinemic clamps
- Saint Lucas Andreas Hospital, The Netherlands, advanced treatments of OSA.
- The Forsyth Institute, Cambridge, USA. Obesity biomarkers in Kuwaiti children.

Immunology and Microbiology Department

Obesity/Type 2 diabetes and associated complications are rapidly growing and representing a serious threat to Kuwaiti population as well as worldwide. There is an urgent need to identify the novel immune/metabolic markers and signaling pathways to understand the mechanisms underlying high fat diet induced inflammation/T2D and related complications. Therefore, we hypothesize that immune-metabolic changes in adipose tissue driven by imbalances in high fat diet nutrients and their metabolites as well as their interaction with high levels of circulatory adipokines (individually or interactively) may play a key role in inducing, sustaining or promoting inflammation results in disrupting glucose homeostasis and insulin sensitivity. Our main research goal is: Studies on immuno-metabolic mechanisms to target metabolic inflammation associated with dysregulation of glucose homeostasis and insulin sensitivity.

Department Staff

Role	Number of Staff
Sr. Scientist/Head of Department	1
*Scientist II	1
Scientist	3
Research Associate II	2
Research Associate	1
Senior Research Assistant	1
Research Assistant II	4
Research Assistant	1
Research Assistant (part time)	1
Total	15

*Manager of the Animal Core Facility/ Group Leader of the Oxidative Stress Group

Key Objective

Our current activities focus on the immune receptors/biomarkers as well as their mechanistic interactions with high fat diet components and their role in the development of inflammation, reducing browning of adipose tissue, insulin resistance, diabetes and associated complications. The ongoing work is thematically summarized below:

- To study the epigenetic changes underlying effects of dietary nutrients/fatty acids in metabolic inflammation, Insulin/glucose resistance and lipid homeostasis including NAFLD/liver steatosis.
- To study signaling cross talk between adipokines IL-6 and TNF- α and its role in glucose/lipid homeostasis
- To investigate the role of nutrients' sensors TLRs/IRF3/IRF5/IRF7 and FOXO in obesity/T2D and islet inflammation.
- To study transcriptional regulators of tissue remodeling, brown and beige fat, under various nutrients' challenges
- To study the role of oxidative stress in metabolic inflammation
- To study how gut influences metabolic diseases.

Awards and Achievements

Number of Projects in 2020

1 | Completed 11 | Ongoing

Number of Publications

13 | Publications

Number of Presentations

10 | Poster/oral presentation

Number of Patents Approved

2 | Patents (underway: filing process)

Patent Details

1	Targeting Long Chain Acyl-CoA synthetase (ACSL1) for preventing SFA-triggered inflammation	Dr. Fatema Al-Rashed, Dr. Rasheed Ahmad
2	Targeting Long Chain Acyl-CoA synthetase (ACSL1) for preventing obesity-triggered inflammation	Dr. Fatema Al-Rashed, Dr. Rasheed Ahmad
3	The IL-33/ST2 axis is dysfunctional in the adipose tissue of early-stage untreated metabolic disease	Dr. Amal Hasan
4	Soluble ST2 is directly correlated with HbA1c in individuals with an average glycaemia in the normal/prediabetes range	Dr. Amal Hasan, Dr. Waleed Al-Dhahi
5	Targeting Signaling Crosstalk Between IL-6 and TNF- α for Preventing MMP-9 Induced tumor growth	Dr. Rasheed Ahmad, Prof. Fahd Al Mulla
6	TLR4-IRF5 signaling pathway is implicated in intermittent hyperglycemia trigger monocytic polarization and induces inflammatory response	Dr. Fatema Al-Rashed, Dr. Rasheed Ahmad

International Collaborations

- Harvard Medical School: Studies on immunometabolic mechanisms to target adipose tissue remodeling and diabetes- Role of diet induced epigenetic modifications in metabolic Inflammation/IR
- University of Central Lancashire, UK: Inflammation and T1D
- Stony Brook University, USA: Role of lipid metabolites in metabolic inflammation
- VSL Pharmaceutical INC.

Population Health Department

The Department of Population Health's overall goal is to contribute to improved health and well-being of individuals living with diabetes, or at high risk of developing diabetes, in Kuwait. We focus on planning and implementing high quality research in close collaboration with the Ministry of Health (MOH) to provide evidence-based information for policy makers to translate into large-scale implementation programs. The department's research themes include a strong focus on

clinical research in vulnerable groups, in particular children with type 1 diabetes and rare forms of diabetes (monogenic diabetes), diabetes registries by maintaining the Childhood-Onset Diabetes electronic Registry (CODER), established in 2011, joining the SWEET network as a pediatric diabetes Center of Reference and creating the National Diabetes Registry. We also expanded to a new collaborative initiative with the MOH: The National Population Health Survey (KNPHS) project, which aims to assess population health status to evaluate the impact of public health interventions to influence health policies, improve population health and prevent disease.

Department Staff

Name	Job title	FTE	Secondment from
Dr. Hessa Alkandari	Head of Department/Consultant Pediatric Endocrinologist	0.4	MOH
Dr. Doha Alhomaidah	Pediatric Endocrinologist	0.2	MOH
Dr. Doaa Khalifa	Senior Diabetes Specialist	0.2	MOH
Dr. Fahed Aljaser	Pediatric Endocrinologist	0.2	MOH
Dr. Saadoun Bin Hasan	Pediatric Specialist Pulmonologist	0.2	MOH
Dr. Abdullah Al Kandari	Post-Doctoral Fellow	1	NA
Ms. Sarah Qabazard	Senior Research Assistant	1	NA
Ms. Fouzeyah Othman	Research Assistant	1	NA
Ms. Fatima Al Juaila	Research Assistant	1	NA

Key Objective

- Support the establishment and maintain the National Diabetes Registries.
- Develop cohorts using the registries.
- Collaborate with MOH to develop National Population Health Survey.
- Establish DDI as a monogenic diabetes referral center.

Awards and Achievements

Number of Projects in 2020

3 | Completed 4 | Ongoing

Number of Publications

9 | Publications (including inter-departmental collaborations)

International collaborations

SWEET e.V. Diabetes Center for Children and Adolescents Hannover, Germany



**MEDICAL
SECTOR**

MEDICAL SECTOR

The Medical Sector at DDI uses a multi-faceted approach to deliver the best medical care and research outcomes by using unique and innovative methods. The sector tackles all aspects of research, training, education and health promotion to achieve DDI's mission.

The Medical Sector supported and delivered the following DDI strategic initiatives in 2020:

1. The Medical Sector provides ongoing support to the Research Sector in the delivery of the **Epidemiology, Etiology, Genetics and Pathophysiology of Diabetes: Biomedical, population health, clinical and multi-disciplinary research focused on identification of determinants to prevent and manage diabetes.**
2. Prevention and Management of Diabetes: Research activities to identify lifestyle and other interventions to manage diabetes and associated conditions across various population segments.
3. Education and Training Development: A framework for training, development and delivery of awareness-raising programs for patients, caregivers and the public through collaboration with MOH.

MEDICAL SECTOR STRATEGY

Through effective collaborations with internal and external entities, the Medical Sector has aligned its outcomes with DDI strategic objectives and initiatives. Using clinical expertise, the sector initiates research activities for the treatment, management, and prevention of diabetes. By measuring the impact and outcomes of the research initiatives, the Medical Sector continuously maximizes the use of its resources. These resources include:

1. Education and Training.
2. Clinical Skills Center.
3. Therapeutic and Patient Care: Physicians, Clinical Laboratory, Pharmacy, Podiatry, Nursing, and Health Information Management.
4. Diagnostic Imaging.
5. Lifestyle and Wellbeing: Medical Fitness Center and Nutrition.
6. Clinical Care Research and Trials.
7. Dose Adjustment for Normal Eating (DAFNE).
8. Healthcare Quality and Patient Safety.

All initiatives and research projects are overseen by the Chief Medical Officer (CMO).

Several clinical research projects are in progress.

CLINICAL OPERATIONS & GOVERNANCE OFFICE

Clinical Operations and Governance Office, headed by Clinical Operations Manager, was established to facilitate the daily operations of all Medical units to ensure high-quality outcomes and safety standards. The Office is responsible for organizing and maintaining the Medical Sector's Workplans, Key Performance Indicators (KPIs), budgets, procurement orders, and daily operations. The Clinical Operations and Governance Office is also responsible for the management of clinical services, which include the patient flow, clinical pathway, clinic schedule, healthcare professional training, patient liaison, health information management, and insurance claims. As per DDI's strategic plan of 2018 – 2022, the Medical Sector's organogram consists of:



RESPONSE TO COVID-19

With the emergence of the SARS-COV-2 virus, the Kuwaiti Government put forth a National plan on public health and social measures, such as partial and full curfew. As such, DDI closed all clinics and activities from mid-March until the government eased measures.

During this time, we were able to continue our patient care and meet their needs by switching to telemedicine (phone/video consultations) and delivery of medications to patients' homes. Below is a highlight of our response to COVID-19 in the Medical Sector:

- Installed a hotline to answer medical queries
- Conducted various webinars and virtual group therapy sessions
- Developed COVID-19 guidelines; one aimed for adults and one for pediatric patients. These were advertised and made available on the DDI website.
- We developed and circulated a patient survey regarding self-care during the lockdown and what services were lacking. The results assisted in tailoring our services and meeting patient needs during this time.
- Plans for resuming work were developed and implemented that included preparations for the facility to make it safe for patients and staff and training staff on appropriate PPE donning and doffing.
- We offered a telehealth psychiatry service for our healthcare professionals in collaboration with Al Amiri Hospital.
- Trained 120 medical students during the pandemic
- Gradually recommenced clinics by staggering times to ensure less crowding in waiting area. This was done once facility was fully ready to receive patients again in a safe manner.

CLINICAL CARE RESEARCH AND TRIALS

Research is the main mission of DDI, and clinical research and trials plays a big role in delivering the mission intended. With the unique setting of the clinical services of DDI, clinical research and trials are conducted in an easy and smooth manner, where all the needed recruitment and procedures are conducted within the Medical Sector.

COVID-19 and the resultant closure of DDI meant all our research activities were put on hold. Nevertheless, we ensured we followed up patients virtually until we were able to safely resume our research activities by implementing various measures, such as triaging participants, wearing PPE, and social distancing. We have also continued with our close research collaborations and established new ones, both regionally and Internationally; these include University of Glasgow, Tufts University, and Sunnybrook Research Institute.

Some of our ongoing studies include looking into the vascular brain changes in people with diabetes by undertaking brain MRI studies and implementation of the first Arabic cognitive battery in collaboration with Sunnybrook Research Institute, Toronto. We have also collaborated with the University of Glasgow on the acceptability and effectiveness of a home-based resistance exercise program on glycemetic control with over 140 Kuwaiti participants.

24 | Publications

2,965 | Impact factor

HEALTH INFORMATION MANAGEMENT (HIM)

The staff in the HIM unit were an integral part of the COVID-19 response in DDI. Staff fielded calls and facilitated the organization of medication delivery in collaboration with the Pharmacy team and the Kuwait Fire Fighting team. In addition, staff helped manage all virtual clinics.

This year also saw their direct involvement in revenue generation through AFYA and Global Med health insurance claims submission and processing. The team were able to achieve a reduction in percentage of rejected claims from 43% to 4%. Furthermore, staff members were involved this year in glucometer sales, which also contributed greatly to revenue generation for DDI. This year also saw a switch to paperless documentation; staff started scanning all patient files to assist in achieving this. A new WhatsApp line was also installed, which all staff members shared the responsibility at different sessions to answer patient requests during the lockdown.

Adult and Pediatric Clinics

3,709 | Total patients seen

28,163 | Total number of appointments

EDUCATION AND TRAINING

With COVID-19 and the disruption in services due to partial and full lockdown and curfews, the Education and Training (E&T) team were able to shift the paradigm of care to virtual-based clinics, with support from clinical services. The majority of DDI patients, whether adults or pediatrics, had 24/7 access to diabetes self-management education and support through telecare. Furthermore, the E&T's provided virtual group therapy sessions to support patients and caregivers with diabetes-related stress, especially during the COVID-19 crisis.

Patients Seen by Education and Training Team

1,241 | Total patients seen
January – December 2020

4,330 | DSME/S sessions for
Adults and Pediatrics

The Group Therapy initiative was specifically helpful during the pandemic to relief anxiety and disease-related distress in the target group, provide emotional support, offer a non-judgmental supportive environment of peers, and share experiences. The educators have facilitated 45 group therapy sessions for 176 persons through virtual meeting platforms.

The E&T team has continued to support the institute's mission in the five major programs of Education, Training, Research, Treatment, and Health Promotion. Recognizing the important role of health promotion in the integrated prevention of diabetes, E&T has developed its ongoing health awareness and promotion program by delivering health awareness webinars for the public, focusing on prevention of diabetes and its complications, and management of diabetes and prevention/management of COVID-19 in People with Diabetes (PwD).

Pediatric Group and Their Caregivers

5 | Webinars 386 | Total Attendees

Adult Group and/or Their Caregivers

5 | Webinars 322 | Total Attendees

Through the 10 webinars delivered in 2020, we aimed to improve patient/caregiver engagement, increase awareness, combat myths and validate the right behaviors to promote patient control and prevention of diabetes and its complications. Additionally, 4 new brochures were created and published on the DDI official website and educational videos were created and disseminated through DDI's official social media outlets for the public.

Since 2017, E&T has been involved in research, whether as a department or in collaboration with other units. That has yielded a total of 2 poster presentations in 2020, which were presented in international conferences. Furthermore, 6 manuscripts were published in collaboration with other departments/institutions.

As part of E&T's continuous contribution to the Accreditation process at DDI, 6 new policies were created as an addition to the department's Policies and Procedures. Additionally, the diabetes education curriculum was updated and reviewed against the American Diabetes Association (ADA) and International Society for Pediatric and Adolescent Diabetes (ISPAD) latest standards of care.

DOSE ADJUSTMENT FOR NORMAL EATING (DAFNE)

The dose adjustment for normal eating (DAFNE) team has continued to provide excellent care to new patients and all DAFNE graduates followed up along the years. Before COVID-19, 2 courses were conducted with a total of 12 patients.

36 | Virtual refresh courses on carbohydrate counting 287 | Patients attended (DAFNE graduates)

8 | Virtual refresh courses related to insulin 168 | Patients attended (DAFNE graduates)

4,799 | Virtual consultations conducted

851 | Face-to-face consultations conducted

473 | Patients followed virtually for their annual clinic

133 | Patients attended annual clinics at DDI

Since the closure of DDI and to limit the risk of infection, most DAFNE activities have shifted virtually to ensure continual care. There have been:

In addition, with the increase in DAFNE graduate numbers, the team trained 3 new educators over 12 weeks to ensure they have sufficient capacity to meet patients' needs and DAFNE program growth. The DAFNE team have also received training from the DAFNE UK team on conducting DAFNE courses remotely during the COVID pandemic.

The Kuwait DAFNE program is audited by DAFNE UK, and key performance indicators are published annually comparing sites. DAFNE Kuwait has continued to meet the targets specified and surpass other sites in the UK and internationally.

LIFESTYLE & WELLBEING

One of the main approaches for diabetes prevention is to maintain optimum lifestyle and wellbeing through healthy eating and exercise. The medical Sector combines both in a unique setting of nutritional clinics alongside the Medical Fitness Center, where participants go through regular exercises under the supervision of the medical team who regularly monitor and control the participants blood glucose levels and overall performance and progress.

NUTRITION

In 2020, the Nutrition Unit strived to continue our excellent patient care in light of COVID-19 and closure of DDI. All consultations were switched to virtual to meet our patients' needs. A total of 1,358 consultations were conducted across all Nutrition clinics (both virtual and face-to-face). During the lockdown, the nutrition team also engaged with our patients using a telehealth application which we piloted for 3 months to monitor our patients as they could not leave their homes to see their health care professionals. We have ensured all our patients have a 24-hour dietary recall completed at baseline and once annually thereafter. All the dietary recalls are entered into the Nutritics software which provides a detailed dietary analysis to assist our dietitians in meeting the needs of their patients. The nutrition team have also collaborated with the education team in the presentation of various webinars aimed at the public from April onwards. We have also piloted a group therapy session with our adult patients which received positive feedback.

The team have also worked diligently on updating and unifying all our materials. This includes new leaflets, videos, and the greatest achievement is the development of DDI's own resource on common Kuwaiti food items and their respective nutritional info in an accessible electronic book for our patients and the public. All of our new materials will be made available on our updated section on the DDI website.

For our patients with type 2 diabetes, we offer our remission clinic services to those interested or referred by their physician. The aim of this service is to provide a well-structured dietary plan to adults with T2D resulting with diabetes remission at HbA1c <6.5%, along with significant medication reduction. The uniqueness of this DDI T2D Remission service is that it welcomes patients with any duration of T2D and on any medication. We have been trying as a team to enhance the referral process within DDI, making more healthcare professionals aware of our service and achievements to encourage more referrals. To date, a total of 10 patients started the remission clinic diet in 2020, despite the total lockdown and closure of DDI premises that took place due to COVID-19 from the period of March 2020 – August 2020, which has majorly affected the progress and growth of the service. Out of the 11 enrolled remission clinic patients in 2020, 3 have completed their 3 months intervention plan in 2020 with an average weight loss of 10.0kg, mean A1c reduction of 3.1% and major reductions in diabetes medication. Of those, one patient was able to achieve

T2D remission with A1c of 5.3% and stopping all anti-diabetes medication except for Liraglutide to support in decreasing satiety and weight loss maintenance. Our remission clinic was featured in an international presentation during Obesity week, the largest obesity meeting in the world, as well as on the American Diabetes Association top news segment.

We also offer our pediatric patients the Kids In Control OF Food (KICK-OFF) Program which is an education program for children between the ages of 11-16 years old. With the closure of DDI due to COVID-19 and the high risk of infection, pediatric clinics did not recommence, and the team had to adapt and switch the delivery of the course to virtual. In collaboration with the Education and Training Unit, KICK-OFF Program; which is a 4-days structured education program for youth with type 1 diabetes and their parents, was delivered virtually in 2020 for the first time for 3 different groups (17 patients and 17 parents) and 2 refresher KICK-OFF sessions for 9 patients total.

MEDICAL FITNESS CENTER

The Medical Fitness Center (MFC) provides fitness and wellness programs to promote healthy lifestyle to the community as continuous support to the mission of Dasman Diabetes Institute. The MFC continued to conduct comprehensive assessments for all members prior to starting their fitness program. This assessment includes the following: Medical clearance by the medical doctor, blood tests, ECG, body composition analysis, anthropometric measurements and fitness assessment.

All members received individualized exercise prescriptions based on the results of the comprehensive assessment. MFC fitness instructors provided continuous supervision and training instructions for all members while performing exercises. Records were kept documenting vitals and progress. Fitness progress was tracked and assessed quarterly for members who attend the MFC regularly. HbA1c and waist circumference were also assessed quarterly for members with regular attendance. Furthermore, the MFC has supported the health and wellbeing of DDI employees by providing discounted membership fees, offering free group classes, and allowing DDI staff to use the walking track for free.

The MFC has also been involved in research; there is an ongoing study in collaboration with the University of Glasgow and it is the first study conducted with the MFC team. The study involves Kuwaiti nationals living with type 2 diabetes to study the effectiveness and acceptability of a home-based exercise program and the effect of resistance exercise on their glycemic control. Certain aspects of study were put on hold for several months due to COVID-19 and participant recruitment was extended throughout October. Thus, there were many participants still involved in home-based and post-intervention program.

The MFC continuously aims to achieve its goal to increase the numbers of members joining, to generate more revenue, as well as focusing to improve the health and well-being of our members and participating in DDI health awareness programs.

DIAGNOSTIC IMAGING CENTER (DIC)

Diagnostic Imaging Center (DIC) is a state-of-the-art facility with the latest equipment used for imaging that supports both DDI medical services as well as the various research projects conducted across all Sectors of DDI.

In 2020, the following hardware/software was upgraded:

- The MRI 2 1.5T GE Optima 450W with GEM was upgraded to the state-of-the art GE Signa Artist in August 2019. The upgrade began on 22nd Aug 2019 and the revamped machine was handed over in Oct 2019. While the magnet and gradients were retained from the previous installation, computes the shell, majority of the coils, MRI couch, etc. were entirely upgraded. Major software upgrade (to DV26.0_R03) was done to support the latest features

of the Signa Artist. Further to this, a software upgrade (to DV26.0_R05) was done on 7th July 2020. A minor upgrade (to DV26.0_R05_ServicePack01) was done on 23rd Nov 2020 to fix certain bugs in the existing version. Upgrade for MRI 3T is in pipeline.

The DIC performed approximately 1,156 investigations through a comprehensive range of MRI, CT, X-Ray, Ultrasound, BMD and Vascular Examinations.

There has been a drastic decline in the number of investigations and the revenue due to COVID-19 pandemic and lockdown.

DIC have two ongoing research projects (RA 044, RA 033) for which we have completed the recruitment and studies and now are in the process of data analysis. In addition, we are collaborating in several research projects across DDI and internationally.

CLINICAL SKILLS CENTER

The Clinical Skills Center (CSC) was established as a training facility to meet the growing needs of students, healthcare professionals, and the general public for health, safety, and simulation courses. Since then, it has partnered with the Kuwaiti Boards establishing the Center as an optimal place to hold the Residents' Objective Structured Clinical Examinations (OSCEs). It is also an approved American Heart Association (AHA) International Training Center and all the courses are registered at Kuwait Institute for Medical Specialization (KIMS).

The Center is accredited by:

- American Heart Association
- Public Authority for Applied Education and Training
- Kuwait Institute for Medical Specializations
- Accreditation of the American College of Pathology.
- Accreditation of the Executive Office of the GCC Health Ministers Council as a GCC Reference Center.

The Center offers:

- Life Support courses. These courses are for the general public.
- Simulation courses. These courses are designed for healthcare professionals.
- Internship programs. Summer assistant training opportunities at CSC
- American Heart Association courses designed for healthcare professionals.

The COVID-19 pandemic has affected the number of courses offered by the Clinical Skills Center and subsequently the revenue generated by the Center. Nevertheless, the center applied and was awarded a grant to train 120 medical students during the COVID-19 pandemic to prepare them to work in the field.

Number of Courses Conducted

196	AHA courses	857	Total attendees
88	Simulation courses	271	Total attendees
1	ATLS course	14	Total attendees

THERAPEUTIC & PATIENT CARE

The Therapeutic & Patient Care Department within the Medical Sector was established as an outpatient setting to deliver optimum medical services, educational sessions, as well as to support clinical research and trials. The clinics tackle all aspects related to diabetes and its complications through the following clinics:

- Adult Diabetology
- Pediatric Diabetology
- Ophthalmology
- Dental
- Neurology
- Nephrology
- Cardiology
- Dermatology
- ENT
- Physical Medicine & Rehabilitation
- Painful Diabetic Neuropathy
- Podiatry

PODIATRY

The Podiatry Department consisted of 3 full time Podiatrists. The department operates 3 clinics, 5 days a week. The Podiatry department provides high quality, evidence-based assessment and treatment of patients with Diabetes. All patients are assessed, screened, and categorized by their risk of foot ulceration according to National Institute of Clinical Excellence (NICE) guidelines, and they are given an individualized care plan and education tailored to their individual needs. All patients are reviewed in a timely manner according to their risk status and current foot health status.

From 1st January 2020 – 31 December 2020, the Podiatry department had **2,628 consultations**, an average of **328 appointments booked per month**, when adjusted to allow for COVID-19 Closure and 2 weeks remaining to the end of the year (4 months removed). This consisted of 490 (19%) new patient contacts, 1,563 (59%) review contacts and 575 (22%) contacts that did not attend. From 1st January 2020 – 31 December 2020 the Podiatry department saw **61 diabetic foot ulcers**, of which **22 (36%), fully healed 21 (34%) were referred on and 20 (33%) were lost to follow-up. Twenty-four (39%) wounds were neuropathic, 36 (59%) neuro-ischemic, and 1 (16%) ischemic. One hundred percent of all neuropathic wounds were fully healed within 12 weeks of initial presentation.**

In 2020 the Podiatrists were actively involved in participant recruitment for two Podiatry led research projects. The podiatry team has also developed a number of videos and social media posts for public awareness campaigns on footcare. They have also collaborated with the Education and Training team on a footcare webinar aimed at the public. The team has also developed a nurse training module in foot screening and piloted this training with DDI nurses. The team also presented 3 posters at DFCONonline conference.

NURSING

The Nursing Unit is contributing to DDI's strategic plan by implementing, auditing, and monitoring a multitude of activities and parameters that are significant to nursing practice, patients', and staff's safety. By providing safe, effective, efficient, and high-quality nursing care, the Unit aligns with the mission and vision of DDI. A number of 6 quality indicators are assessed and reported to the Quality and Patient Safety committee. Targets were set for each indicators and quarterly reports



submitted. During Q2 the institute was closed to patients due to COVID-19. Clinics gradually restarted from August 2020. Therefore, audits have been done from data of Q1, Q3 and Q4.

1- EHR - compliance with documentation of vital signs and other measurement
Target: **99%**. Achieved: **99.02% Q1-Q4**.

2- FRAC assessment-sample size: all files:
Target **90%**. Achieved: **97% Q1 -Q4**.

3- Panic labs values, response from physicians
Though met throughout the year, there was a drop in Q3 which is likely to be due to partial opening of the clinics and not all physicians were back at work in DDI.
Target **90%**. Achieved: **94.8% Q1 -Q4**.

4- Hand hygiene compliance
Target **90%**. Achieved: **97.37% Bi-Annually**

5- CSSD batch number tracking
Reviewed all instruments used in 3 clinics (ENT, Dental & Podiatry).
Target **99%**. Target not achieved **96.45% Q1 -Q4**.

6- Allergy documentation
At the start of the year sample size 50 files/month. This was changed in August as we moved to electronic recording due to COVID-19. Training was given but retraining was required.
Target **95%**. Achieved: **96.20% Q1 -Q4**.

In addition to the indicators reported to the committee, other indicators are monitored and reported to the nursing manager.

• **EHR (Hello Health) and files audits-**

Q1	Q2	Q3	Q4	Annual average Target 99%
99.1%	Clinics Closed	99.4% Only Aug & Sept	99%	99.02 % Q1-4

• **Allergy documentation**

When the clinics were reopened, we moved from paper documentation to electronic documentation. A new Allergy Assessment note type was created in Hello-Health (EHR), and a new updated template was developed.

Q1	Q2	Q3	Q4	Annual average Target 75%
100%	Clinics Closed	81.8%	97.68%	96.20%

• **Incident reports from Nursing department:**

Q1	Q2	Q3	Q4	Total (Q1 - Q4)
0	DDI closed to patients	0	7	7

- **Medication Administration Record (MAR): 100%**
- **Safety**

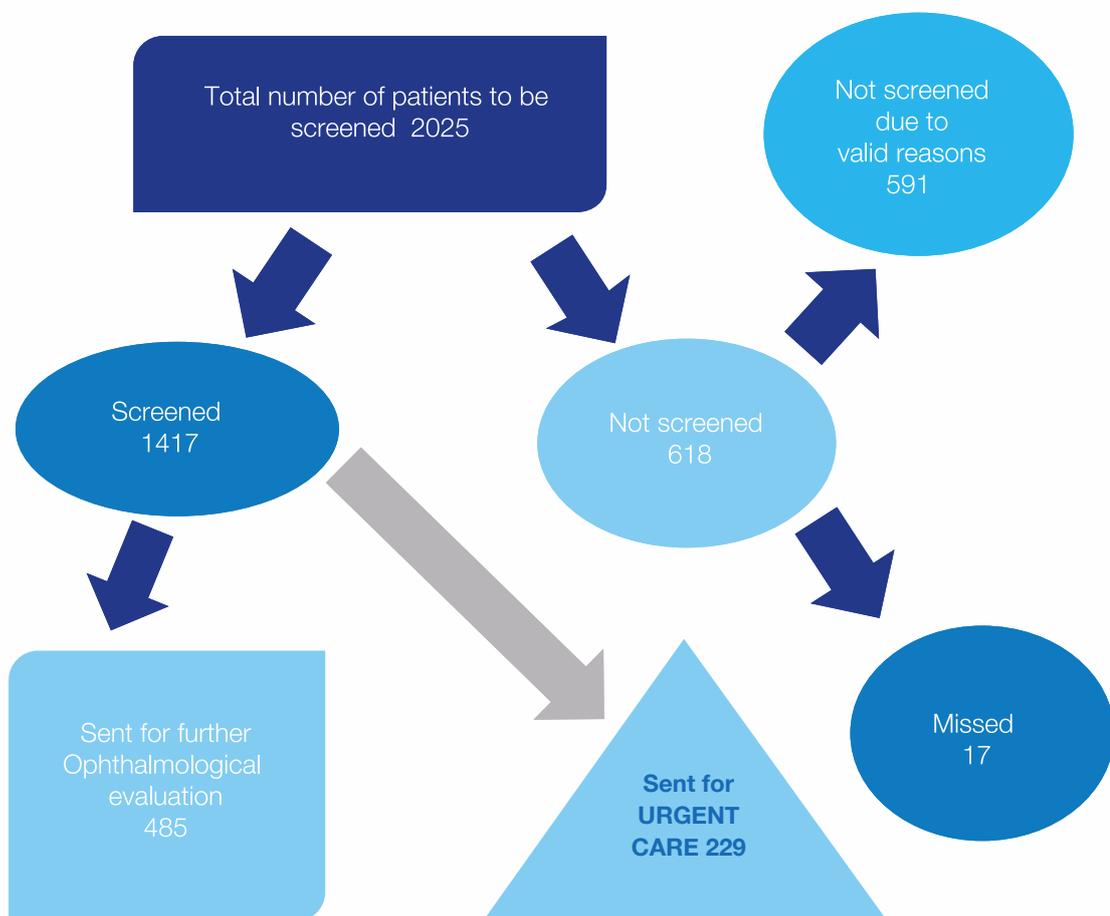
Patients' safety is paramount to all clinical staff. Fall risk assessment is done in all clinics that nurses work in. A high compliance rate was noted and FRAC (Fall Risk Assessment Checklist) was done as per protocol:

Quarterly reports	Q1 2019	Q1 2020	Q2 2019	Q2 2020	Q3 2019	Q3 2020	Q4 2019	Q4 2020	Annual average 2019	Annual average 2020
FRAC compliance	98%	100%	97.66%	Not done COVID closure	98.50%	95.10%	97.66%	96.75%	97.8%	97%
% High Risk	39.43%		42.70%		41.43%		40.03%		40.08%	

FRAC was moved to be an online documentation in Sept 2020. This was partly due to COVID-19 and partly to streamline nursing documentation. There is now a template in EHR that the staff used to complete the assessment. There are no more paper documents.

- **Retinal screening**

99.16% of those who attended appointments were screened. Q1 96.77% of patients attending all clinics or had appointment were screened. Q3 & Q4 moved to a specific Ophthalmology screening clinic. All those attending were screened (100%). It was noted that in Q1 26.05%, Q3 23.62%, Q4 25.85% were no show/ cancelled. Q1 also include those who refused screening.



- **Mandatory and Continuous education**

Due to COVID-19, we moved to online -Microsoft Teams presentations. This enabled us to continue with our mandatory lectures whilst we were in lockdown and when we were still closed to patients. We have continued to have our sessions online even with return to open clinics so that we are not all gathering in one area as a big group. It also enabled more staff to attend each session.

- **Work Environment Safety**

The Infection Control (IC) nurse and the IC links are conducting regular environmental rounds, based on checklists approved by the Nursing Manager and IC Consultant. They also observe the compliance with the hand hygiene practice. This was still completed even with the lockdown period.

- **Environmental safety**

Evaluates the cleanliness and state of repair of the equipment, furniture, floors, walls, etc., in clinics, patients' waiting areas, DIC, MFC, and Phlebotomy.

Q1	Q2	Q3	Q4	Annual average
99.8%	closed	99.8%	99.8%	99.85%

- **Hand hygiene (HH) compliance.**

The WHO "5 moments for hand hygiene" program was monitored across DDI in all clinical areas. Healthcare providers were observed for a minimum of 200 opportunities for hand hygiene (HH) actions (either by soap and water or alcohol-based hand rub).

(Semester 1 (Jan-June	(Semester 2(July-Dec	Annual average
93.3%	97.93%	97.37%

As well as the environmental safety round and hand hygiene program, this year we had to accommodate how to work safely with COVID-19. This meant that we implemented new signage to encourage social distancing, removed papers/ leaflets in waiting areas, change the layout of the waiting areas to have more space between patients when waiting and also brought in barrier to reduce numbers of patients coming up to reception desk at a time. We also changed our nursing practice to work as paperless as possible. We introduced iPad for staff to enter data immediately, rather than writing on paper. All staff were also trained and assess for their donning and doffing PPE skills.

- **Tracking of sterilized instruments**

Tracking is done so that we can recall instruments should we have an autoclave failure.

Q1	Q2	Q3	Q4	Annual average
96.4%	Closed	96.32%	96.72%	96.45%

- **Processing of panic lab values**

Clinical laboratory is communicating specific lab test results, as per the established list of tests and agreed upon values. According to treating physician's response, there will be different

actions taken (referral to hospital, early appointments, repeat labs, patient education, etc.). The number of reported labs where the physician did not answer is being monitored and reported. Target is for response is 90%. We reached our target in Q1 and Q4. Unfortunately, in Q3 there was a slight problem due to not all clinics being open and not all the physicians working.

	Q1	Q2	Q3	Q4
Total number of critical labs	77	closed	18	59
Dr Responded to notification	72		16	58
% of those responded to	93.51%		88.89%	98.31%
Not responded	5		2	1
% of those not responded to	6.49%		11.11%	1.69%

• **Nursing staff involved in research**

	Q1	Q2	Q3	Q4	Annual
No of nurses	11	2	2	2	x
New research projects	0	0	0	0	0
On-going research projects	14	1	1	1	1
On hold due to COVID-19	0	13	12	12	12
Research project Closed	0	0	1	0	1
No. of hours spent in research	1151.58	120	520.5	435	2227.08

• **Outreach campaigns**

We managed to participate only in the following two Outreach campaigns before COVID and all other outreach activities were suspended for safety reasons. The two events were:

- 08 Jan 2020 - Bayan Rawdet Al Nowear School - 20 attendees, Nursing staff - Blood Glucose and Diabetes Lecture.
- 18 Feb 2020 - MoH Awareness campaign, Private Education Building Hawally; 36 Attendees

CSSD- in 2020, 52 steam sterilization cycles were performed, serving Podiatry, Dental, ENT clinics, as well as laboratories and animal facility. The processing of 2218 instruments was undertaken.

Point of Care Testing (POCT) - quality control was performed for all instruments - glucometers, Accu-Check and HbA1c analyzers - 100 % compliance. Testing has been done daily when the clinics have been open, and the paperwork submitted to the Clinical Lab Manager as part of the CAP accreditation requirements.

Clinical Skills Center- courses held by nursing staff – nursing staff are trained as instructors for multiple courses offered by the Clinical Skills Center.

Number of courses taught by nursing team in 2020: 197

CLINICAL LABORATORY

The Laboratory effortlessly works on complying with local, international Occupational Safety and Health Administration (OSHA), Accreditation Canada (ACI) and College of American Pathologist (CAP) Accreditation programs safety standards and requirements. Laboratory safety was designated to the laboratory safety team, the chemical hygiene coordinator, and the lab safety officer.

2020 ergonomics evaluation was conducted by Emergency and Safety Task Force Group for the lab personnel together with all DDI staff, to ensure that all laboratory staff are aware of the most fit positions and best practices in order to optimize human well-being and overall system performance. Currently the Laboratory Department increases its safety measures to comply with ACI and CAP requirements by the following:

- Adding 2 digital, self-monitoring thermometers for room temperature & humidity.
- To reduce the number of used mercury in the lab for safety issues. Therefore, the number has been reduced to 1 mercury thermometer for the samples transfer box. 2 digital thermometers were received for the refrigerators in Phlebotomy room and Microbiology lab. The thermometers are supervised by the Biomedical Engineering Department.
- Eye wash performance checked weekly.

Staff Continuous Medical Education (CME) and Competency Assessment programs to comply with CAP and ACI requirements:

- 16 topics were represented for the staff to update their knowledge.
- CAP Competency Assessment was done online for most of the staff with calculation of their CME points.
- Other training programs were also conducted for the staff through DDI, such as Microsoft Office, Safety training, BLS, and incident management system, ADA, Diabetes on -line course, a lot of webinar training courses and on -line conference.
- The CME for CAP Competency Assessment is also calculated for staff, depends on the number of CAP Competency Assessments that has been done by the majority of the lab staff.

STATISTICS:

Biochemistry Tests from January - December 2020

97,142	Biochemistry Profiles	18,521	Hormones
16,495	Special test ordered	2,245	Vitamin D
1,254	PTH	778	C-peptide
2,803	HbA1c	139,238	Total number of tests

Hematology Tests from January - December 2020



A new document control program was designed to meet the ACI and CAP document control requirements and it was based on the CLSI guidelines. A plan to develop the laboratory processes related policies and procedures was also created and tasks distributed to laboratory management and senior staff. Laboratory policies index were prepared and reviewed by the laboratory head and introduced to laboratory team.

- The new (LIS) software and HIS went live on 9/11/2017, with the laboratory and IT department still working on requirements, and a validation study was done for the new LIS software, and validation report was generated.
- The new LIS software was improved with the following:
 1. Electronic Inventory system.
 2. Sample acknowledge system in the lab.
 3. TAT for routine lab tests, STAT TAT, Critical values TAT, Samples Transport TAT.
 4. Number of pages for the printed lab results.
 5. Test methods for some of the lab tests.
 6. Generate new lab statistics for the LIS.

Quality indicators and occurrence management also play major roles in process control, by monitoring critical processes throughout the pre-analytical, analytical, and post analytical phases. This is used to identify, report, investigate, track, trend, and document occurrences that do not conform to the laboratory's established policies, processes, procedures and/or do not meet the laboratory's customer expectations and needs.

Customer Satisfaction is a major component of a quality management system, and a significant focus in CAP and ACI standards. The laboratory employs continuous monitoring by defining the laboratory clients and making the laboratory staff understand the importance of their customer's satisfaction. The laboratory has a range of clients/customers including physicians, nurses, podiatrists, patients, and laboratory staff.

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 to counseling and education. The Unit worked to organize the workflow, developed new services, achieved the tasks required, helped patients and research participants, and met the standards required by Accreditation Canada.

In 2020 and during the COVID-19 pandemic, the Pharmacy team continued to operate fully in terms of dispensing, counselling, medication reconciliation, compounding, and inventory management to make sure that all DDI patients do not have any shortages in their medications during this difficult time. To ensure patient and staff safety, a new medications home delivery service was implemented in collaboration with Kuwait Fire Service Directorate and various volunteers, where patients request their medications via WhatsApp and the request get processed and packed by the pharmacists using the new delivery software designed for this service. Orders then get picked

up by volunteers and firemen to be delivered to DDI patients' houses. After entering phase 2 of our government plan, a new medications pickup service was implemented, where patients request their medications via WhatsApp and the request get processed by the pharmacists using the new pickup software designed for this service.



QUALITY AND PATIENT SAFETY

Since 2009, the Medical Sector has provided diabetes-related activities, integrating clinical care research and trials, education, prevention, and management to ensure patient safety and quality. It is a fundamental pillar for promoting enhancements in prevention, education, diagnosis, and therapies by combining disciplines, resources, expertise, and techniques within its function. Quality activities were focused on a defined set of quality dimensions that were proposed by Accreditation Canada; population focus, accessibility, safety, work-life, client-centered services, continuity of services, effectiveness, and efficiency.

Quality Plans:

- In collaboration with the Quality and Patient Safety (QPS) team, each Unit at the Medical Sector works toward raising the level of quality through incorporating quality activities into their workplans.
- Units were encouraged to use quality improvement tools such as the Plan-Do-Study-Act (PDSA) cycle in conjunction with quality indicators results to guide improvement efforts in the Medical Sector.
- Patient complaints are being reviewed and managed through the Public Relations to improve the quality of services provided to patients. In addition, a Patient & Family Advisory Council (PFAC) has been introduced and is planned to be operational once patients are being recruited as members.

Standards of care:

The Medical Sector Units comply with the Accreditation Canada standards, and policies and procedures are continuously being developed and updated in alignment with these standards. The patient care pathway has been redesigned to be aligned with the strategic objectives of prevention and management of diabetes and its complications.

Patient safety :

Patient safety activities are implemented through the joint effort of the Medical Sector Units, QPS Team, and the Emergency & Safety Committee at DDI.

Performance measurement:

- Through the Quality & Patient Safety Team, several quality indicators were developed to measure processes and outcomes of healthcare and safety to ensure the continuous improvement of quality of care for patients using the services offered, evidenced by the process and outcomes of care.
- Data collection and analysis methods underwent major modifications and updates in order to extract data directly from the electronic medical record (Hello Health) in collaboration with the Information Technology Unit

Policies and Procedures:

- Policies and procedures have been developed encapsulating all units and aspects of DDI Medical Sector.
- All units create policies to support clinical practice and promote quality of care and safety. Editing and reviewing policies is the responsibility of Heads of Units.
- All policies are updated at 3 yearly cycles, except for Diagnostic imaging and Clinical Laboratory which up-date departmental policies at two years and one-year respectively. These policies and procedures are tracked and shared by the Strategy Management Office.
- All Policies and procedures are made available on the DDI staff SharePoint to ensure the updated policies are readily accessible.

Ethical framework:

- DDI worked closely with its Sectors developed DDI's Ethical Framework, which is a resource to improve and guide ethical practice to all DDI employees and patients/clients who are faced with difficult ethical decisions.

KUWAIT OBESITY ACADEMY

The establishment of the Kuwait Obesity Academy is yet another achievement of the Dasman Diabetes Institute towards achieving its mission together with the World Obesity Federation. Dr.Ebaa Al Ozairi, the Chief Medical Officer is the Director of this Academy. This Academy, in collaboration with the Strategic Centre for Obesity Professional Education (SCOPE), is offering a certification in "Obesity Management". Upon successful completion of this intensive course, a graduation will follow. This is a highly skilled course and was supposed to be delivered within the span of three months – from December 2019 until March 2020. But due to COVID-19 pandemic, the deadline of completion of the course had to be extended. The course is planned with contacts lasting for three days, including lectures/seminars, hands on training and workshops, in addition to on-line training modules. The first set of lectures and workshops were held on December 22, 2019, conducted by very eminent experts in the field. **Most of the candidates have successfully completed the 16 SCOPE e-learning modules and are now doing SCOPE Core Path Modules.** The hands-on training and examinations will be planned, taking into account the pandemic situation in the country. There was an enormous response from the medical community to join this Academy, but due to limited seats, **a total number of candidates enrolled was 47.** The Dasman Diabetes Institute and the World Obesity Academy strongly stand behind Kuwait Obesity Academy for its success.

WHO COLLABORATION

Another one of DDI's achievements is our collaboration with the WHO. This collaborative endeavor was in the development of a training course for the prevention and management of diabetes foot by primary health care providers, run by our podiatry clinic at DDI. The level of foot care knowledge is low, and the course will be tailored to mainly focus on the prevention and management of diabetic foot by primary care providers. This course will equip participants with the essential knowledge and skills for effective diabetic foot prevention and management. The curriculum has been developed under the guidance of the WHO and will be conducted in 2021.

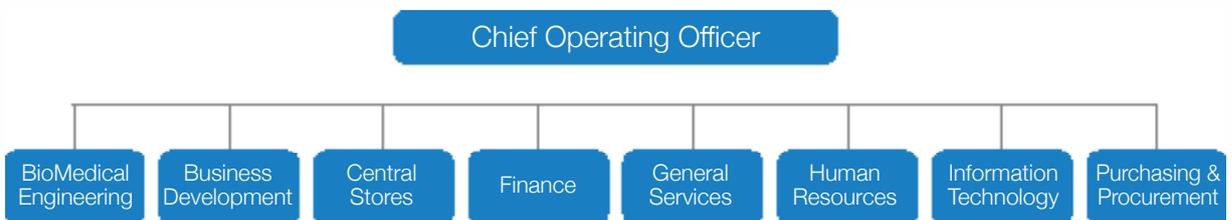


OPERATIONS SECTOR

OPERATIONS SECTOR

The Operations Sector in DDI plays a crucial role in the Institute. The mission of the team rests in being ‘enablers’ to meet institutional objectives and is a partner in supporting the Mission, Vision and Values of DDI. The team serves in various capacities of operations including Information Technology, Human Resources, Finance, Business Development, Material Management and Procurement, and General Services. The team also coordinates maintenance, upgrades and contractual duties of all scientific and medical equipment through the Bio Medical Engineering department. The team’s ethos is adoption of best practices and innovative solutions to drive continuity, sustainability and improvement of the work carried out in DDI.

The Institute has undergone multiple expansion and renovation exercises in infrastructure to enable key scientific projects and remains up to date in all facets of IT solutions and programs by using Cloud-based and other enterprise platforms. The hire of top talent and the continuous training across all departments have added depth to the capabilities and resources of the Operations Sector through its people.



BIO MEDICAL ENGINEERING

The Biomedical Engineering Department offers its services to most DDI Departments. The goal is always having an uninterrupted service; to achieve that goal, the Biomedical Engineering Department selects the equipment, installs it, commissions it, trains users on it and keeps maintaining it.

Mission

- To provide the Biomedical Engineering services required to support DDI's research laboratories and clinical departments.

Major Achievements

- There was 0% equipment downtime throughout the year.
- The Department was fully operational during the pandemic crisis.
- Transferred Equipment from DDI to Jaber Al-Ahmad Hospital. Setting up a lab to facilitate two of DDI's research projects.

Future Plans

- Become a paperless department- digitize all work.

Summary

- The Biomedical Engineering Department managed to support the Institute during the pandemic crisis. We will continue to offer full technical support needed to both, the Research and the Medical Sectors.

BUSINESS DEVELOPMENT

Business Development Department assists with the development and execution of marketing strategies. We also facilitate branding and create potential avenues for grants and income to aid DDI's Mission and objectives. We are also responsible for marketing the Institute's services and facilities for revenue generation.

Mission

The Business Development Department's mission is to provide value for all DDI departments. With the use of business analysis and project management, we can properly execute marketing plans to increase revenue and efficiency.

Major Achievements

- Business Development Department contacted companies to promote the courses offered by the Clinical Skills Center.

16	Banks	15	Hospitals	10	Private Schools	14	Private Companies
17	Medical Companies	11	Hotels	9	Medical Providers	4	Insurance
96	Total Contacted						

- Target for Additional Revenue Through Clinical Skills Courses.

10,000	Target (KWD)	17,419	Achieved
7,419	Sales Above Target		

- Secured a deal with a Major Private Hospital to train all Medical staff at DDI's Clinical Skills Center exclusively for the next year.
- Submitted 5 proposals to DDI Management of which 3 were accepted:
 - Proposal to Decrease monthly spending with Sweans marketing company.
 - Analysis of Diagnostic Imaging Center revenue for the past 3 years.
 - Medical Fitness Center Re-opening proposal.
- Created a Clinical skills plan for letter distribution that for 2020 targeting new customers with monthly letters distributed.
- Started on the process of documenting business continuity with all operations departments.

Future Plans

- To start recruiting whole hospitals with binding contracts to provide all training through DDI's Clinical Skills center.
- To include all DDI to the business continuity plan to ensure that every department is aware of their role when a disaster happens, and ensure business continues.
- To promote DIC through letters to established healthcare providers
- To Focus on existing revenue streams of DDI to increase efficiency.

Summary

- 2020 has hindered a lot of projects due to the current pandemic but has given us the opportunity to focus on DDI's existing revenue streams and find ways of streamlining all processes involved. By focusing on the Clinical Skills Center, Business Development has surpassed its target for the year. We will continue to focus on existing revenue streams and start to find new ways to implement this in other avenues.

CENTRAL STORES

The Central Stores Unit is a storage and issuing facility that supplies essential items such as consumables, reagents, stationary, for all sectors within DDI. The Central Stores acts as an intermediary between the Purchasing & Procurement Department and the end users.

Mission

- Our mission is to provide quality office stationery, supplies and equipment solutions under one roof.
- We make sure that all needs are met without any decrease in the Institute.
- The Inventory Control maintains accurate and up-to-date records of DDI property and provide reports.
- Inventory control, also known as stock control, is regulating, and maximizing the Institute's warehouse inventory. The goal of inventory control procedures is to maximize profits with minimum inventory investment, without impacting customer satisfaction levels.

Major Achievements

- MOH orders are being placed regularly.
- Created a system (IPS) to ease and organize ordering for all DDI staff. The IPS system allow staff to order sanitizers and masks for a month.
- All PPE equipment are available at the stores and are ordered regularly.

Future Plans

- Adding all items (research and stationery) to IPS system.
- Using bar coding system for all stores.

FINANCE

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.

Major Achievements

- 2021 Budget approved.
- DDI 2021 budget report submitted to BOT.
- Monthly budget reports sent to all units with no delays.

COVID-19 Impacts

- After board members agreement, DDI projected budget has been reduced because of the COVID-19 Pandemic. The decrease was mainly in staff cost through elimination of staff bonus (KD 350K), annual increments (KD 145K) and terminated employees (KD 230K).

Future Plans

- 2021 budget will be uploaded in the Dynamics, hence all purchase requests submitted by the units will have a live feedback on budget availability.

Summary

- We continue to smoothly provide relevant financial information to all stakeholders, seeking new ways to increase transparency and efficiency.

GENERAL SERVICES

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, firefighting etc.

Mission

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

Major Achievements

- A robotic cleaning of AC ducts done to improve air quality.
- Domestic Water By-pass Line installed to ensure uninterrupted water supply in the building during an emergency.
- Water Protection Tray installed to avoid humidity water seeping into the lab
- Upgraded Fire Alarm System with additional smoke detectors for Fire safety
- Cold Room in Lab have Stand-by unit installed to avoid interruption.
- For security and night patrol, motion sensor lights have been installed.
- To ensure patients and visitors safety in the washrooms, an emergency calling device (pull cords) has been installed.
- Built new storage facility for Medical sector.

COVID-19 related Jobs

- As part of COVID-19 precautionary measures, storages were converted into Outpatient clinics, and portable air-condition units installed.
- Cleaning, disinfection, and sanitization of offices (weekly); Clinics & waiting areas (Daily); and Labs (daily) in the building.
- COVID-19 precautionary checks done by Security for all incoming visitors, patients, staff, and cleaning staff.

Future Plans

- Water-proofing Works around the building
- To control humidity levels in the MRI-1 space, the AC duct was modified.
- The Window Cleaning Facade's (cradle) faulty Traversing Motor was replaced to ensure smooth function.
- A second Stand-by unit will be installed for a different cold room to avoid interruption.

Summary

- Planned Preventive Maintenance (PPM) is carried out for all Electro-Mechanical Equipment and its components done periodically. i.e., Monthly, quarterly, semi-annually, and annually.
- All kinds of AC filters are being replaced periodically, to avoid clogging and maintain clean air in the building.
- Chillers Maintenance: Oil Analysis done, Evaporating and Condensing Temperature controls, Condenser tubes cleaned regularly, Oil and filters replaced as per requirement.
- Fire Alarm system tested periodically, Fire drill performed, Fire License Renewed, Fire extinguishers are checked monthly.
- Monthly Load test done for Un-Interruptible Power System (UPS) and Generator.
- Public Address System (Announcement system) being testing weekly.
- Painting, Carpentry, and minor maintenance works carried out on Day-to-Day basis.

HUMAN RESOURCES

Mission

- The mission of the Human Resources Department is to be a progressive business partner supporting all Sectors in DDI. We also aim to achieve the overall institutional objectives while striving to be a center of excellence, build on the foundations of professional development and qualitative HR services, policies, programs and initiatives.

Major Achievements

- COVID-19 pandemic corrective measures:
 - Complied with the government and MOH rules for sharing the government safety guidelines with all employees and maintaining the percentage of allowed employees to attend work.
 - Applied a system for COVID-19 emergency leave.
 - Followed with the managers for the monthly staff attendance plan, working from home reports, updated employee vaccination details and other related issues.
- Organizational Excellence projects: Initiated and completed lot of projects to improve the overall HR scope and establish an internal framework of overall standards and processes through HR SOP, revised Employee Handbook, updated Organization Structure, Position Mapping across DDI and updated HR policies.

Future Plans

- HR Process Automation: Performance Appraisal process and many HR Requests will be automated to improve overall work efficiency.
- Organizational Excellence: Continuing on some projects from 2020, some new projects such as Career Progression Framework and Compensation Management review, rolling the Succession Planning and focusing on many activities aimed to enhance DDI culture and employee engagement and motivation while be the primary focus in 2021.

Summary

- Due to the COVID-19 pandemic in 2020, lot of plans and projects could not be completed as per the timeline and had to be pushed into Q4 2020 or 2021. The focus for 2021 will continue to be on COVID-19 pandemic along with automating HR processes, leading HR Organizational Excellence projects and continue to deliver on the regular HR tasks through 2021.

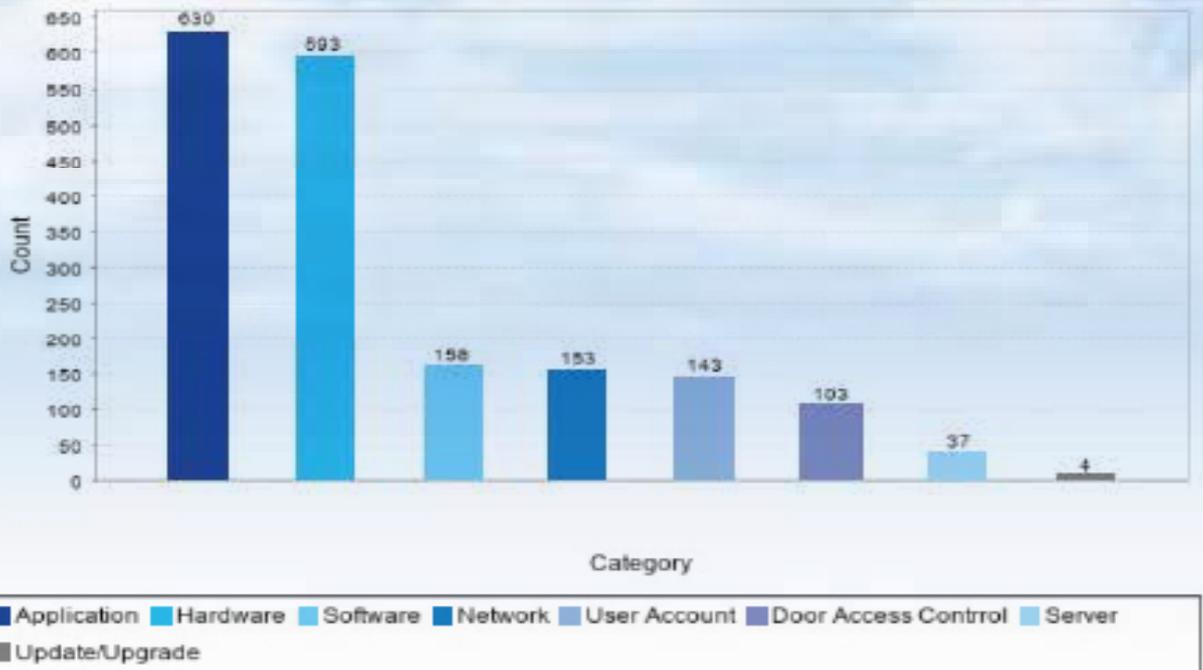
INFORMATION TECHNOLOGY

Mission

- Information Technology (IT) Department is a main core to the mission set by the Institute. As a service department, the IT provides various services to all the departments within DDI, allowing for their projects to be executed more efficiently.
- The IT Department services included support for DDI departments and units within Research, Medical, and Operations Sectors.
- Throughout 2020 and the COVID-19 pandemic, the IT Department continued providing different services on and off site. New services have been implemented and published to support other departments during this crisis. This focus is seen in this year's work plan and the projects the Department has taken part of.

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 the year. This year's targets were built around improving the quality of data captured, to allow for better, efficient, and more effective use of data.
- The Department also continued last year's improvements on existing 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 and security, etc.
- In addition, the range of services provided internally to support DDI's operations continued to include several categories. The most major services revolve around the applications and tools used by employees, email services, clinical systems, networks services, hardware/software, printing services, telephone services, as well as web portal. In total, DDI's IT Department has served around 1821 helpdesk tickets during the year 2020, and the distribution of those ticket is best illustrated in the chart below.



Because the users are our main priority, an IT satisfaction survey was disseminated to all DDI employees in December 2020, and the Helpdesk team has received a 98% satisfaction rate.

Major Achievements

- The IT Department was several internal projects that included both IT Department projects (projects that only impact its own operations) and DDI projects (internal and external). The projects vary in nature and size. The IT Department's involvement can take different nature and size as well. Below, we offer an overview on noteworthy projects that IT has either solely worked on, or significantly contributed to, with a brief description of each of the project. This includes IT collaborations.

ORGANIZATIONAL-LEVEL PROJECTS

Thermal Camera

- Installed 3 thermal cameras in the 3 main entrances of the facility to monitor the employees and visitor's temperature before entering the building. Installed 4 thermal attendance cameras in 4 different floors to replace the attendance fingerprint devices. These cameras are integrated with the HR system.

Pediatric/Adult COVID-19 Registry

- A registry system to record the medical information for COVID-19 patients was delivered during this year to the MOH. The system is live online and in use.

HIPAA Compliance

- Renewed the HIPAA compliance seal of year 2020.

Pharmacy System

- Developed a system for online medication request, with a full workflow for dispensing packaging and delivery tracking to keep serving DDI's patients under the current pandemic.

IPS

- Internal Procurement System to finalize internal requests from DDI stores related to COVID-19 safety packages and stationary consumable.

MFC Booking System

- Implemented a MFC booking system that allows the customers to book the date/time of their class.

Childhood Onset Diabetes Registry:

- A registry system for childhood onset diabetes is developed and published online to be used by the Population Health team.

Novel Vox System

- A new IVR desktop agent under Clinical Services hotline integrated with EHR system, so the operator will have brief about the patient upcoming appointments and his file ID from his phone number, also operator will have screen to manage missed calls and add notes. This system has a reporting interface for management to follow up and quality control.

Summary

- In summary, during the COVID-19 pandemic, the Department has focused its efforts on helping other departments to continue providing their services and reach optimal levels of efficiency in utilizing their resources. In addition, we have helped empower DDI staff at all levels with the tools they need to do their job better, and more efficiently. This can be observed not only in the hardware and software support provided over the year, but also in the types of focus areas of 2020 such as more types of online solutions and trainings, enhancing safety and security, data management, as well as enhanced reporting dashboards.

PURCHASING & PROCUREMENT

Our mission is to improve the procurement process and continuously enhance the procurement process to obtain the best products and services in a timely and transparent manner.

Mission

- Procurement Department is committed to facilitating the purchase of high-quality goods and services at competitive prices in support of the DDI's mission.

Major Achievements

Purchasing & Procurement Department was successfully able to:

- Ensure the availability of all clinical consumables and Personal Protective Equipment (PPE) required to ensure the safety of the employees in COVID-19 situation.
- Fully automate the purchase requisition process.
- Reduce the average handling time of approving purchasing requisition by 50%.
- Reduce the workload and manual process by automating the Cash process.
- Close all pending purchase orders and speed up the process of delivery.

Summary

- 2020 was full of automations. We have successfully automated a lot of manual processes that produced positive impacts on the lifecycle of issuing POs. a lot of the tasks have been either eliminated or shorten in terms of time, which increase the customer satisfactions. Moreover, the workload in some areas has reduced by excluding Procurement department from some of the current cross-functional process such as cash request.

