

A Mubadala Company

OUTCOMES REPORT 2016



<mark>عـقدمـن الـتـميــز</mark> A DECADE OF EXCELLENCE

CONTENTS

Message from the Chairman	01
About Imperial College London Diabetes Centre	03
Diabetes Trends	11
Research Streams at Imperial College London Diabetes Centre	21
Public Health Awareness	23
Continuing Medical Education	25



MESSAGE FROM THE CHAIRMAN

A year of milestones

2016 was a milestone year for all of us at Imperial College London Diabetes Centre. The opening of our new state-of-theart Zayed Sports City branch with a UK royal visit capped a year that saw us mark 10 years of operations. By end- 2016, we were conducting more than 800 consultations a day as we approached a total of 200,000 patients. With over 70 diabetes professionals and endocrinologists under one roof – more than anywhere else in the region – we are making a palpable difference across 11 specialist practice areas.

Demonstrating continual progress in effective treatment, the impressive outcomes seen in this report reflect the dedication and commitment of our professional teams to combatting diabetes in the UAE and the wider region.

As a holistic one-stop community healthcare resource focused on prevention, treatment, education and research, the Centre has always approached diabetes care from a unique perspective. We combine an international team of expert partners and healthcare professionals with culturally relevant methods of treating the condition that affects nearly one in five of the UAE's residents.

In 2016, the Centre brought on board new treatment options including a Bariatric and Metabolic Surgery Centre and antenatal services in partnership with Healthpoint. In addition, we built on our strategy as leaders in diabetes management and innovation through continuing our public outreach efforts, resulting in an 84 per cent increase in public engagement across our Abu Dhabi and Al Ain communities compared to 2015.

We also established our first clinic exploring the genetics of diabetes in the region in collaboration with the Clinical Genetics Department at University of Exeter in the UK, using specific genetic screening methods to accurately diagnose monogenic diabetes. Patients with this uncommon form of diabetes are often misdiagnosed as type 1 or type 2 diabetics and receive incorrect treatment for their needs. Since the clinic's inception, we have served 165 patients with monogenic diabetes and other genetic endocrine disorders, successfully relieving six patients of insulin due to screening that allowed for targeted treatment to correctly manage their condition.

When it comes to the training and education of healthcare professionals, we are fast approaching a milestone, with a total of 1,453 people attending our continuing medical education events last year – 40 per cent more than in 2015. Our structured training and events address key developments that affect the work of our healthcare professionals and enhance our high standards of care for the benefit of all.

Current trends indicate that a significant number of the UAE population are unaware they have diabetes or prediabetes. When the International Diabetes Federation announced it would focus on diabetes prevention in 2016, we launched a new public health awareness initiative to promote the importance of early diabetes testing, diagnosis and treatment – the HbA1c testing campaign. Response rates have been promising, with more than 2,000 people tested thus far.

We truly stepped up our efforts to make a difference in 2016, and would like to thank everyone for their contribution as we continue to maximise our impact over the next year.

Suhail Mahmood Al Ansari

Chairman, Imperial College London Diabetes Centre Executive Director, Mubadala Healthcare

'We are making a difference to people with diabetes as well as members of the wider community, who are more engaged, aware, fit and healthy than ever before. The Centre is a cornerstone of Mubadala's network of world-class healthcare providers.'

ABOUT IMPERIAL COLLEGE LONDON DIABETES CENTRE

Imperial College London Diabetes Centre (ICLDC) is a one-stop, state-of-the-art outpatient facility specialising in diabetes treatment, research, training and public health awareness. The Centre opened in Abu Dhabi in 2006 as the first healthcare facility established by Mubadala Development Company in partnership with Imperial College London.

Imperial College London is one of the world's leading scientific, engineering and medical research and teaching institutions. The partnership has enabled clinical collaboration and knowledge transfer between London and Abu Dhabi. The Centre implements Robust Process Improvement (RPI) concepts and methodology in designing and updating clinical and managerial processes with an emphasis on quality of care as well as patient safety and satisfaction.

ICLDC holds ambulatory care accreditation and diabetes management certification from Joint Commission International (JCI).

MISSION

To understand, tackle and prevent diabetes.

To address the patient, their families and the community in preventing and treating diabetes and its related conditions by using holistic clinical care, health promotion, scientific research, and providing continuous patient education and professional training.

VISION

To be first choice for providing quality diabetes services in the region.

To serve as a national and international leader in the treatment and education of diabetes and endocrine diseases, and to find the best evidence-based treatment for all forms of diabetes and its related complications through holistic clinical care, basic research, and a superior patient experience.

Imperial College London Diabetes Centre has developed a holistic approach towards diabetes care, addressing the needs of Abu Dhabi, the UAE and the wider region.



TREATMENT

Having developed a specific approach to diabetes care based on the needs of Abu Dhabi, the UAE and the wider region, ICLDC offers the highest level of specialised patient care from first diagnosis to the management of diabetes and associated complications.

PUBLIC HEALTH

In 2007, ICLDC launched the community campaign, Diabetes. Knowledge.Action, now the longestrunning public health awareness campaign in the country.



Through a host of lifestyle activities and events, the campaign promotes the importance of adopting a balanced diet, maintaining healthy body weight and engaging in daily exercise. Major activations include an annual walkathon that coincides with the World Diabetes Day in November.

TRAINING AND EDUCATION

Education is one of the four key pillars of ICLDC's approach to tackling diabetes. The Centre organises specialist conferences that provide Continuing Medical Education (CME) credits for healthcare professionals, as well as weekly in-house seminars for resident doctors.



RESEARCH

ICLDC conducts world-class epidemiological, basic, clinical and genetic research of diabetes in the UAE, as well as general surveys among the participants of its campaign activities.

Our research focuses on explaining the high prevalence of diabetes and obesity in the country, with the aim of identifying mechanisms to slow down and reverse the trend.



THE TEAM

Our multi-disciplinary team comprises consultants with vast local and international experience recruited from, and trained at, globally recognised institutions. Imperial College London Diabetes Centre provides a comprehensive range of treatments at its branches in Abu Dhabi and Al Ain across the full spectrum of diabetes and related complications:

- Diabetes
- Adult and paediatric endocrinology
- Metabolic and electrolyte disorders
- Pre- and post-bariatric surgery care
- Antenatal care
- Heart disease prevention (non-invasive cardiology)
- Nutritional advice
- Ophthalmology
- Nephrology
- Podiatry
- Radiology
- Laboratory
- Pharmacy

A DECADE OF EXCELLENCE



London Diabetes Centre in Abu Dhabi, the first project to emerge from the partnership between Imperial College London and Mubadala that aims to address high prevalence rates of diabetes in the UAE and the wider region.

Construction begins

on Imperial College



Distinguished guests from the UK, His Royal Highness Prince of Wales and Her Royal Highness Duchess of Cornwall, tour Imperial College London Diabetes Centre together with Her Highness Sheikha Fatima bint Mubarak, Chairwoman of the General Women's Union Supreme President of the Family Development Foundation, and President of the Supreme Council for Motherhood and Childhood, and other dignitaries.

2007

The Centre launches its

campaign Diabetes.

Knowledge.Action

community to raise

awareness of the

walk, public health

that engages with the

condition that affects

one in five people in the UAE. The campaign

Marking its innovative approach to public health awareness, the Centre welcomes distinguished guests from the UK, His Royal Highness Prince Andrew, Duke of York, and, on a separate visit, Duchess of York.



The Centre reaches an important milestone as it becomes the first healthcare institution in the world to receive the prestigious ambulatory care accreditation and diabetes management certification from Joint Commission International (JCI).

2004 2005 2006

Mubadala Development Company signs an agreement with Imperial College London that covers cooperation in education, healthcare, R&D and industrial development. One of the first collaborative initiatives is set to bring clinical expertise to the region, reducing the need for people to travel abroad for treatment.



His Highness Sheikh Suroor Bin Mohammed Al Nahyan, a senior member of Abu Dhabi's ruling family, inaugurates Imperial College London Diabetes Centre, Mubadala's first healthcare asset.

The flagship centre, located next to Zayed Military Hospital, brings a holistic one-stop-shop approach to diabetes treatment, management, prevention, research and awareness to the community.

- Patients treated at the Centre: 779
 Doctors practising at
- the Centre: 8 • Prevalence of diabetes
- in the UAE: 19.5%
- the Centre: 7, 775
 Doctors practising at the Centre: 12
 Prevalence of diabetes in the UAE:

• Patients treated at

 Number of people engaged via Diabetes. Knowledge.Action: 5,000

The Duchess, along with a team of the Centre's doctors, launches a children's educational programme in collaboration with the Emirates Foundation

as part of the Diabetes.

Knowledge.Action

campaion.

2008 2009

The Centre's first Play for Life corporate community football tournament attracts 160 players from companies across Abu Dhabi as well as 1,500 spectators.

- Patients treated at the Centre: 9,367
 Doctors practising at
- the Centre: 15 • Prevalence of
- diabetes in the UAE: 19.5%
- Number of people engaged via Diabetes. Knowledge.Action: 11,500



The first patient survey reports an 89% satisfaction rate, demonstrating the positive impact the Centre has had on the community it serves.

- Patients treated at the Centre: 15,680
- Doctors practising at the Centre: 17
- Prevalence of diabetes in the UAE:
- 18.7% • Number of people
- engaged via Diabetes. Knowledge.Action: 18,000

With the total number of patients having doubled between 2009 and 2011, the Centre opens its second branch in Al Ain, reinforcing Mubadala's vision of providing accessible, internationally



 Patients treated at the Centre: 31,722 Doctors practising at the Centre: 28 Prevalence of diabetes in the UAE: 18.82% • Number of people engaged via Diabetes. Knowledge.Action:

recognised quality care to people across the emirate

of Abu Dhabi.



diabetes management as the only facility in the UAE to hold this unique double endorsement.



The Centre hits the milestone of reaching more than one million people across the community through public health campaigns and patient programmes since its opening.

2010 2011

The Centre has treated more than since its opening – a testament to its winning combination of highly accessible, patientfriendly, convenient and professional services and facilities with tailored and management programmes for families, making staying

- Patients treated at the Centre: 23,289
- · Doctors practising at the Centre: 20
- diabetes in the UAF: 18.7%
- Number of people engaged via Diabetes. Knowledge Action: 18 500



received two endorsements from the Joint Commission International (JCI) in Ambulatory Care and Clinical Care Program for Diabetes Management, cementing the Centre's growing reputation.

The Al Ain facility

- Patients treated at the Centre: 44,705 Doctors practising at
- the Centre: 36 Prevalence of diabetes in the UAE:
- 18.87% • Number of people engaged via Diabetes.Knowledge. Action: 21,011

امش Walk 2013



The Centre hosts the Endocrinology Clinical

- Patients treated at the
- Doctors practising at the Centre: 44
- in the UAE: 19% Number of people
- Knowledge.Action: 23,740

Four thousand participants of Walk 2014 share their BMI and related data as part of a survey that tracks the correlation between activity levels and health.

- Patients treated at the Centre: 76,541
- Doctors practising at
- Number of people engaged via Diabetes. Knowledge.Action: 26,294
- the Centre: 53

- Prevalence of diabetes
- engaged via Diabetes.



More than 100 activities promoting healthy living take place across the emirate, including the record-breaking Walk 2015 on World Diabetes Day with a total of 21,000 participants including more Emiratis than ever before.

- Patients treated at the Centre: 81.503
- Doctors practising at the Centre: 60
- · Prevalence of diabetes in the UAE: 19.3%
- Number of people engaged via Diabetes. Knowledge.Action: 25.318

focuses on explaining the high prevalence of diabetes and obesity in the UAE. In addition, it opened the first fully operational research tissue bank in the emirate of Abu Dhabi.

The Centre launched a research institute that

The Centre renews accreditation and

- 2012 2013 2014 2015

2016 HIGHLIGHTS



Launch of the third Imperial College London Diabetes Centre specialist branch marks a decade of the Centre serving the community.



From left: Waleed AI Mokarrab AI Muhairi, Deputy Group CEO and Emerging Sectors CEO at Mubadala; Professor Sir Steve Bloom, Head of Division for Diabetes, Endocrinology and Metabolism, Chair of the Academic Section of Endocrinology and Investigative Medicine at Imperial College London and Lead Clinician for Clinical Chemistry at Imperial College Healthcare NHS Trust; Her Excellency Professor Maha Taysir Barakat, Director General of Health Authority – Abu Dhabi, Suhail Mahmood AI Ansari, Chairman of Imperial College London Diabetes Centre and Executive Director of Mubadala Healthcare.



Her Royal Highness Duchess of Cornwall visits ICLDC Zayed Sports City in November 2016 – a royal vote of confidence in Abu Dhabi's campaign against diabetes.



Her Royal Highness Duchess of Cornwall (second from right), Her Excellency Professor Maha Taysir Barakat, Director General of Health Authority – Abu Dhabi (right), Suhail Mahmood Al Ansari, Chairman of Imperial College London Diabetes Centre and Executive Director of Mubadala Healthcare (second from left), Ihsan Al Marzouqi, Associate Director of Mubadala Healthcare and board member of Imperial College London Diabetes Centre (left).

DIABETES TRENDS



Figures from the International Diabetes Federation (IDF) revealed that in 2015, 19.3% of the UAE population between the ages of 20 and 79, or almost one in five people, had type 2 diabetes.

In 2015, there were over 1 million people living with diabetes in the UAE, placing the country 13th worldwide for age-adjusted comparative prevalence. It is important to note that diabetes is a regional affliction with Saudi Arabia, Bahrain, Kuwait and Qatar all featuring in the top fifteen countries in terms of prevalence worldwide. One of the key areas of our research at Imperial College London Diabetes Centre is to develop an understanding of the high prevalence of diabetes and obesity in the UAE and wider region. This will enable us to create a strategy around prevention and cure of these conditions.

2016 trends indicate that the prevalence of diabetes in the UAE is rising at a faster rate than in the MENA region and the rest of the world. Rapid economic growth and the convenience it brings, sedentary lifestyle and unhealthy diet characteristic of the UAE are all risk factors leading to the number of people with diabetes doubling to an estimated 2.2 million by 2040. However, a growing population and a greater understanding of the condition among the community have also contributed to the increase in the number of patients diagnosed with diabetes.

DEMOGRAPHICS AND BASELINE STATISTICS

The number of patients at ICLDC has seen a significant jump between **2009 and 2016** with more than a fivefold increase (or an annualised growth rate of 28 per cent). The opening of our new facility at Zayed Sports City (ZSC), Abu Dhabi, in November 2016 has provided additional scope for growth. The Al Ain facility has gone from strength to strength since its opening in Q4 2011, serving almost 40 per cent of the Centre's patients (Figure 1).

1.4%





*The total includes patients who visited more than one of the facilities only once

The highest annualised growth rates over the past seven years were evident among prediabetes patients (45 per cent) as well as patients with diabetes other than type 1 and type 2 (39 per cent) (Figure 3). The number of patients with other endocrine conditions grew by 32 per cent year on year, while the growth among type 1







and type 2 diabetes patients was 18 per cent and 22 per cent respectively (Figure 3). Despite the increase in the number of patients seen, we have maintained the improvement in our quality markers, as the following sections demonstrate.

Fig. 3: Total number of patients seen by diagnosis



Total number of patients seen

Fig. 4: Age distribution of diabetes patients seen in 2016



Age distribution of diabetes patients seen in 2016 [n=36,483]

Fig. 5: Gender distribution of diabetes patients seen in 2016



HBA1C

8.000 7.000

6,000

5.000 4.000 3,000 2.000 1.000 0

> 2.50-2.99 .00-3.49 50-3.99 1.00-4.49 .50-4.99 .00-5.49 50-5.99 5.00-6.49

Number of patients

HbA1c is a marker that indicates the body's ability to control blood glucose levels over the previous three months. The American Diabetes Association sets the target HbA1c level at seven per cent or less. The higher the HbA1c level, the worse the blood glucose control. HbA1c measurement is an integral part of the agenda of regular patient visits to ICLDC. The average HbA1c for all patients seen in 2016 (latest visits) was reported at 7.3 per cent (Figure 6).

Fig. 6: HbA1c distribution of diabetes patients seen in 2016



11.00-11.49

%

11.50-11.99

12.00-12.49 12.50-12.99 13.00-13.49 13.50-13.99

Fig. 7: Mean HbA1c measurements for first versus follow up visits of diabetes patients

5.50-6.99 .00-7.49 .50-7.99 8.00-8.49 8.50-8.99 9.00-9.49 9.50-9.99 10.00-10.49 10.50-10.99



Fig. 8: Average HbA1c for diabetes patients.

14.00-14.49 14.50-14.99 15.00-15.49

Figure 7 compares first visit results to improved

results during follow-up visits. On comparing the

average HbA1c levels for all patients seen from 2009

to 2016 (Figure 8), a statistically significant reduction

of nine per cent from 8.1 to 7.3 is also evident – a true

Average HbA1c for diabetes patients

15.50-15.99 16.00-16.49 16.50-16.99 17.00-17.49 17.50-17.99



Note: Differences and p-values pertain to 2016 vs 2009 changes

14

BLOOD PRESSURE

More than 60 per cent of our diabetes patients suffer from high blood pressure (hypertension) that is largely treated with blood pressure lowering medication.

High blood pressure significantly increases the risk of cardiovascular and kidney disease in patients with diabetes, and is carefully monitored at the Centre. The American Diabetes Association changed its guideline blood pressure limits for patients with diabetes

Fig. 9: Blood Pressure distribution of diabetes patients seen in 2016



Fig. 11: Mean diastolic blood pressure for first versus followup visits of diabetes patients





from 130/80mmHg to 140/80mmHg in 2013 and to 140/90mmHg in 2015.

The average blood pressure for all patients seen at ICLDC in 2016 (latest visits) is 127/71mmHg (Figure 9). The line graphs compare first visit results to improved results during follow-up visits (Figures 10 and 11). The proportion of patients with blood pressure at or below guideline levels increased from 57 per cent to 80 per cent between 2009 and 2016 (Figure 12).

Fig. 10: Mean systolic blood pressure for first versus follow up visits of diabetes patients

Mean systolic blood pressure for first versus follow up visits of diabetes patients







Notes: Differences and p-values pertain to 2016 vs 2009 changes Guideline limits are: * 130/80 for 2009 to 2012 ** 140/80 for 2013 to 2014 *** 140/90 for 2015 2016

CARDIOVASCULAR DISEASE RISK

Fig. 13: Percentage of diabetes patients with

heart disease [n=36,484]

The successful UK Prospective Diabetes Study (UKPDS), sponsored by University of Oxford, modelled an equation to predict the risk of patients with diabetes developing heart disease in the future. Known as the UKPDS risk engine, the risk calculator is used for all diabetes patients without known heart disease registered at ICLDC. The variables include age, gender, smoking, duration of diabetes, blood pressure, cholesterol and HbA1c. The model allows physicians to tailor treatment to every patient to ensure maximum heart disease prevention (including lipid-lowering and high blood pressure medication in addition to tight glucose control) for highrisk individuals. Of the 36,484 diabetes patients seen in 2016, 7.9 per cent already had heart disease (Figure 13). Figure 14 displays the UKPDS cardiovascular risk scores for the remaining patients. It is important to note that these scores include patients whose risk has been successfully minimised with lipid-lowering medication, blood pressure control medication, smoking cessation education and tight glucose control. More than 93 per cent of patients without heart disease and with moderate to high cardiovascular risk scores are on lipid-lowering therapy (Figure 15).



Fig. 14: Distribution of UKPDS scores for diabetes patients with no heart disease [n=35,814]



Fig. 15: Percentage of patients with moderate to high cardiovascular risk on lipid lowering therapy [n=14,513]



Figure 16 shows improvement of the UKPDS cardiovascular risk scores between first visit and follow-up visits in patients who do not have heart disease.

Fig. 16: Mean UKPDS cardiovascular risk scores for first versus follow-up visits of diabetes patients with no heart disease

Mean UKPDS cardiovascular risk scores for first versus follow-up visits of diabetes patients with no heart disease



In addition, the UKPDS cardiovascular risk scores saw a statistically significant drop of 10 per cent between 2009 and 2016 (Figure 17).

Fig. 17: Average cardiovascular risk for diabetes patients with no heart disease





Note: Differences and p-values pertain to 2016 vs 2009 changes

BMI

One of the greatest risk factors for developing diabetes is weight gain, particularly when this results in obesity. The medical definition of obesity is when the Body Mass Index [BMI = weight (kg)/height (m²)] is 30 kg/m² or above, while a BMI between 25-30 kg/m² signifies being overweight.

The vast majority of patients with diabetes at ICLDC are either obese or overweight, which may have played a role in their predisposition to the condition. Once diabetes is diagnosed, obesity is certainly not ideal, as it may lead to further complications including high blood pressure and high cholesterol levels. It is critical for overweight and obese individuals, both with a family predisposition to diabetes and those who have developed the condition, to try to lose weight and maintain a healthy lifestyle.

The average BMI for all patients seen in 2016 (latest visits, above 18 years) was 31 kg/m² (Figure 18).

Fig. 18: BMI distribution for diabetes patients over 18 years old



BMI distribution for diabetes patients over 18 years old [n=35,416]

Several international diabetes control trials have revealed a link between weight gain and glucose control improvement. Therefore, of all parameters healthcare providers try to improve in patients with diabetes worldwide, BMI is the most challenging. Despite this, diabetes patients at ICLDC have seen improvements in their BMI between their first and follow-up visits (Figure 19), as all members of our clinical staff continuously emphasise the importance of weight loss, or at least weight maintenance, for the improvement of glucose control.

Fig. 19: Mean BMI for first versus follow up visits of diabetes patients

Mean BMI for first versus follow up visits of diabetes patients



SPECTRUM OF COMPLICATIONS

The figure below provides an overview of the various complications of diabetes detected at ICLDC, while Table 1 shows the range of diagnostic procedures.

Our specialists conduct comprehensive examinations to ensure early detection of complications.

Diabetes related complications (≥18 years only)



Table 1: Diagnostic procedures used to detect complications

Procedure Statistics				
	Abu Dhabi	Al Ain	ZSC	TOTAL
Pathology tests	2,060,839	1,152,207	15,201	3,228,247
Retinal photographs	18,859	8,646	145	27,650
DEXA Bone densitometry scans	1,842	3,176	0	5,018
X-rays	545	351	0	896
Echocardiograms	715	969	0	1,684
Stress tests or stress echocardiograms	302	345	0	647
Retinal laser scans	302	135	0	437

Nodules in the thyroid gland are often detected by either palpation or imaging examinations. However, these tests cannot determine whether a nodule is cancerous or non-cancerous. For this purpose, biopsies of the thyroid are performed, usually under ultrasound guidance. The results are then matched to one of the diagnostic classifications shown in Table 2.

Classification	Definition
	Abu Dhabi
Thy1	Non-diagnostic for cytological diagnosis
Thy1c	Non-diagnostic for cytological diagnosis, cystic lesion
Thy2	Benign
Thy2c	Benign; cystic lesion
Thy3	Neoplasm possible - possible malignancy
Thy3a	Neoplasm possible - possible malignancy; atypia/non-diagnostic
Thy3f	Neoplasm possible - possible malignancy; suggesting follicular neoplasm
Thy4	Suspicious of malignancy
Thy5	Malignant

Table 2: Diagnostic classifications for thyroid biopsies

In 2016, the Centre performed 253 fine-needle aspiration (FNA) procedures, resulting in 299 biopsies completed with a 97 per cent sampling adequacy rate.

Figure 20 shows the results of the FNA biopsies with classifications as defined above.



Fig. 20: Results of FNA biopsies conducted in 2016

PATIENT SATISFACTION AND QUALITY OF CARE

In July 2016, we handed over our Patient Experience Survey to Health.Links – Press Ganey, a company that supports healthcare providers in understanding and improving the entire patient experience. The survey was conducted independently over the phone and online to ensure dependable feedback from our patients.

The respondents answered questions on a five-point scale. Figure 21 shows the mean rating for the patients' overall satisfaction with their experience during their latest visit. The results were benchmarked against Press Ganey's global database that includes more than 1,105 facilities and 203,647 physicians, in addition to a GCC-specific database of 26 facilities and almost 649 physicians. As evident from Figure 21, ICLDC achieved an astounding 92.3% patient satisfaction, ranking in the 99th percentile amongst its GCC peers.

Health.Links – Press Ganey divided patient feedback from the survey into five categories – Access, Environment, Care and Treatment, Communication, and Humaneness – to identify the most important areas of improvement. **Fig. 21:** Overall satisfaction mean rating 2016 (by month) Total responses received [n= 4,652]





RESEARCH STREAMS AT IMPERIAL COLLEGE LONDON DIABETES CENTRE



Imperial College London Diabetes Centre is committed to a holistic approach to diabetes and its complications with research oriented towards a greater comprehensive understanding of the condition, its causes and its treatment. In collaboration with international academics at Imperial College London and the University of Oxford, to name a few, ICLDC Research Institute conducts research that concentrates on genetic, behavioural and psychological factors of diabetes and its complications, with research teams covering specific areas of medical and scientific concern in the region.

Our researchers seek to identify the aetiology and risk factors of diabetes and obesity, including genetic and biological contributors as well as environmental factors such as lifestyle and nutrition. Understanding the multifactorial processes driving high diabetes prevalence rates in the UAE allows doctors at the Centre to tailor treatment to each patient, and will ultimately improve patient outcomes and contribute towards global progress in the treatment of diabetes.



Also part of ICLDC Research Institute is ICLDC Repository, the first research tissue bank in the emirate of Abu Dhabi approved by the Health Authority - Abu Dhabi (HAAD) which has now been operational for two years and is actively recruiting participants. It supports a diverse range of research intended to improve prevention, diagnosis and treatment of illness, and promotion of health throughout the UAE society.

Additional research studies currently being conducted at the ICLDC Research Institute include:

CLINICAL

Clinical research studies focus on human health and well-being through identifying novel ways to treat, cure or prevent illness. Projects include:

- The Role of Gut Hormones and Hepcidin in Type 2 Diabetes Mellitus
- Cardiovascular Diseases Risk Factors in UAE Adolescents and Young Adults with Type 1 and Type 2 Diabetes Mellitus
- Continuous Glucose Monitoring (CGM) Analysis during Ramadan Fasting
- Ramadan and Energy Expenditure (RAMEE) Study



GENETIC

Genetic research studies examine genes, mutations and molecular interactions, leading to a better understanding of human disease. Projects include:

- Genetic Diversity and Functional Genomic/ Pharmacogenomic Mapping in Emirati Population with Type 2 Diabetes
- Application of Urine C-peptide: Creatinine Ratio (UCPCR) as a Testing Tool for Identification of Maturity-Onset Diabetes of the Young (MODY) Patients in the UAE
- Genetic Contribution to Increased Risk of Type 2 Diabetes in the UAE
- Genetic Causes of Hypercholesterolaemia in the Emirati population
- Genetic Causes of Gestational Diabetes in the Emirati population

EPIDEMIOLOGICAL

Epidemiological studies analyse the patterns, causes and effects of health and disease conditions in defined populations, specifically the UAE population. Projects include:

- Abu Dhabi Diabetes and Obesity Study (ADOS)
 - A Study on the Aetiology and Associated Risk Factors of Patients with Obesity/Diabetes within the Emirati Population
- Abu Dhabi Sleep Apnoea (ADSA) Study

PUBLIC HEALTH AWARENESS



Diabetes.Knowledge.Action, the nationwide campaign by Imperial College London Diabetes Centre, is dedicated to a healthier UAE. Launched in 2007 under the patronage of Sheikha Fatima bint Mubarak, Chairwoman of the General Women's Union, Supreme President of the Family Development Foundation, and President of the Supreme Council for Motherhood and Childhood, it is now the longest-running public health awareness campaign in the country. The initiative promotes an active lifestyle through an ongoing calendar of events for the whole community – from football tournaments and walkathons to patient education forums and outreach workshops for schools, universities and organisations.

WALK 2016

The 10th Walk, coinciding with our 10th anniversary, saw thousands across the community come together at Yas Marina Circuit to #WalkOn and beat diabetes. Supported by HAAD and the Centre's sister facilities, Healthpoint and Cleveland Clinic Abu Dhabi, the fun-filled family day encouraged people to engage in at least 30 minutes of exercise a day, adopt a balanced diet and take a more proactive stance in their health decisions.

HBA1C TESTING CAMPAIGN

As part of our public health awareness campaign, we launched a series of healthy lifestyle workshops and mini screening sessions onsite for private and public sector organisations in June 2016.

Run by our nurses and dietitians, the screening sessions comprise health checks including height and weight, blood pressure, HbA1c non-invasive blood tests and a diabetes risk assessment questionnaire. Along with the results, participants receive recommendations, including the necessity to seek further medical advice from their family doctor.

The workshops cover:

- Diabetes
- · Healthy weight
- Food labels
- Healthy lunch/healthy plate
- Additional health related topics on demand







To date, the HbA1c testing campaign has had significant impact in terms of awareness raising amongst our primary target audience – UAE nationals. The campaign dovetails with the International Diabetes Federation's Eyes on Diabetes theme for 2016 that aimed to highlight the urgent need for early diabetes screening, diagnosis and treatment to maximise outcomes, efficiency and targeted interventions.

To expand the reach of the campaign, we have partnered with organisations such as the Emirates Red Crescent, the Family Development Foundation, the General Women's Union, Dar Zayed and HAAD.

Since the HbA1c campaign launch:

- 1,197 people tested (877 in Abu Dhabi and 320 in Al Ain)
- More than 3,308 individuals were reached an 84 per cent increase over 2015

PLAY FOR LIFE 2016

Six leading companies battled it out on the football field in the annual Play for Life tournament in April. Now in its ninth year, the event attracted more than 200 players and thousands of spectators. Abu Dhabi- based legacy trading company Saif Bin Darwish and the Environment Agency – Abu Dhabi were key sponsors.

CONTINUING MEDICAL EDUCATION



In 2016, Imperial College London Diabetes Centre hosted more than 20 HAAD-accredited events targeting medical practitioners. The Centre recorded 1,453 participants, representing a 40.2% increase over 2015. Since 2006, a cumulative total of 19,172 practitioners attended ICLDC's Training and Education series.

HAAD-accredited events organised by ICLDC throughout the year include:

Journal Club

A weekly review of medical journal articles led by ICLDC doctors, open to all ICLDC healthcare professionals

Diabetes & Endocrine Forum

A series of monthly forums connecting specialists and healthcare professionals from ICLDC Abu Dhabi and Al Ain via webcast

• Diabetes & Endocrine Update

Case study presentations discussing common diabetes and endocrine problems, held at ICLDC AI Ain three to four times a year

Royal College of Physicians Programme

A programme preparing junior doctors for the MRCP (Member of Royal College of Physicians) examination, held three to four times a year

European Society of Endocrinology Clinical Update

An annual lecture and workshop event that provides an in-depth update on current clinical practices and encourages networking between trainees and established endocrinologists

Advanced Diabetes Conference

An annual two-day conference discussing updates to the guidelines on the treatment and management of diabetes, as well as related challenges and lifestyle choices

Advanced Medicine Congress An annual lecture and workshop event covering all medical fields

Additional non-accredited events held at ICLDC include:

Imperial Diabetes Educator Training Course

A multi-disciplinary course that equips students for work as health professionals in diabetes education and management in a variety of settings, held bi-weekly over nine months



EDUCATIONAL PROGRAMMES (FELLOWSHIPS, INTERNSHIPS, RESIDENCIES)

The ICLDC Fellowship Training Programme for Endocrinology and Diabetes Mellitus (FTPED) started in 2015. Approved by HAAD and sponsored by Abu Dhabi Health Services Company (SEHA), FTPED is based on the UK's Joint Royal Colleges of Physicians Training Board (JRCPTB) endocrinology curriculum. The three-year programme provides comprehensive training in the pathophysiology, evaluation, diagnosis and management of endocrine diseases and diabetes. The curriculum also covers thyroid, adrenal, pituitary and neuro-endocrine tumours, as well as antenatal care, gonadal diseases, calcium and bone metabolism, perioperative management and diagnostic endocrine investigations.

FTPED aims to train the UAE's next generation of diabetologists and endocrinologists to reverse the growing diabetes prevalence in the UAE. Graduates will be prepared to practice independently to rigorous, internationally recognised standards.





COLLABORATION

ICLDC collaborates in several fields with a host of world-renowned partners:

- **Clinical:** Imperial College London, Royal College of Physicians, European Society of Endocrinology and Cleveland Clinic Foundation.
- Research: Imperial College London, University
 of Oxford, University of Aberdeen, University
 of Exeter Medical School, Campus Bio Medico University of Rome, and George
 Washington University School of Medicine and
 Health Sciences.
- Locally: Zayed University and UAE University

The Centre continues to add new events and training courses to its education calendar.



MEDIA

With 431 hits in 2016 – a 116 per cent increase over 2015, ICLDC has secured top-line coverage as the go-to source for comment and insight on diabetes and related complications.

SOCIAL MEDIA

As part of its commitment to public health awareness and diabetes prevention, ICLDC reaches out to the community through an active presence in conventional media as well as social media. Via Facebook, Twitter and Instagram, the Centre engages the population in conversations about health and encourages participation in its wide range of educational and lifestyle events. Imperial College London Centre's commitment to providing world-class treatment, research, training and public health awareness remains central to its operations.

LOOKING TO THE FUTURE

We will continue to develop innovative ways to engage with the community, implement new public health initiatives and train the next cadre of worldclass healthcare professionals – all integral parts of a holistic approach to the treatment of diabetes.

ICLDC's comprehensive network of offerings will further expand to deliver the highest level of specialised care and enhance the patient experience, welcoming the addition of new joint service lines with Healthpoint, such as pre- and post-bariatric surgery service, antenatal service, and thyroid and endocrine service.

Our increased capacity will welcome more diabetes professionals and endocrinologists under one roof than anywhere else in the region, allowing us to spearhead the fight against diabetes.

Our future plans focus on empowering the population of Abu Dhabi in combatting diabetes, as well as building valuable partnerships with other healthcare providers, government and private entities to help drive public health outcomes.

OUR LOCATION

IN PARTNERSHIP WITH

Imperial College London A research and teaching affiliate





IMPERIAL COLLEGE LONDON DIABETES CENTRE, ABU DHABI Al Khaleej Al Arabi Branch Next to Zayed Military Hospital

Zayed Sports City Branch Between Entry Gates 1 & 6

PO Box: 48338, Abu Dhabi, UAE Tel: +971 2 40 40 800 Fax: +971 2 40 40 900

IMPERIAL COLLEGE LONDON DIABETES CENTRE, AL AIN Next to Tawam Hospital

PO Box: 222464, Al Ain, UAE Tel: +971 3 74 64 800 Fax: +971 3 74 64 900

www.icldc.ae