Annual Report

2013

College of Medicine & Health Sciences
& Sultan Qaboos University Hospital
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Dean's Message

It is my pleasure to present to you the report of the College of Medicine & Health Sciences and the Sultan Qaboos University Hospital for the year 2013.

The College of Medicine was founded in 1986 and became the College of Medicine & Health Sciences (COMHS) in 2002 when the Nursing Program was added. From the beginning, the COMHS and Sultan Qaboos University Hospital (SQUH) have recognised teaching, research, training and clinical and community services as their core responsibilities. They aim for the highest standards of achievement in the quality of their medical and health education and services, in research and in their contribution to Omani society. They also aspire to become a role model for other medical and health science colleges and health care institutions in Oman and abroad.

In 2013, the College had a total of 86 faculty members including 17 Professors, 22 Associate Professors and 28 Assistant Professors. The COMHS has grown and diversified, with well-established programmes in the preclinical and clinical departments. The new curriculum, developed since 2008, is now in its second year of implementation. Student intake is around 125 per year and the total student numbers are around 1,100. The College runs an M.Sc. programme in Biomedical Sciences and Ph.D. programmes are now approved in eight study areas.

In 2013 the SQUH had 84 senior consultants and 72 consultants. It has had ISO 9001/2000 certification since 2005 and has introduced an electronic patient records system. SQUH and the COMHS have state of the art laboratories and equipment.

In 2013, the MD Programme was fully accredited for a ten-year period by the Association for Medical Education in the Eastern Mediterranean Region in association with and in accordance with the standards of the World Federation for Medical Education. The accreditation decision was made on basis that the M.D. Programme complies with the WFME’s “Basic and Quality Development Standards”. It is notable that COMHS’ “Quality Development Standards” are considered by the WFME as “Best Practice” thus conferring distinguished status on the COMHS’ M.D. Programme.

Prof. Omar Al-Rawas

Dean
College of Medicine & Health Sciences
Sultan Qaboos University

Chair
Hospital Board
Sultan Qaboos University Hospital
Executive Summary

The College of Medicine & Health Sciences (COM&HS) and the University Hospital (SQUH) continue to expand and develop their educational and clinical mission. This report documents their activities and achievements during 2013.

Education

In 2013, the COM&HS admitted into the M.D. programme a total of 130 students. Following successful completion of the Phase II of the M.D. programme, 99 students joined the clinical Phase III of the M.D. programme in September 2013. The training of B.Sc. Biomedical Sciences students is also among the responsibilities of the COM&HS and SQUH, of whom 18 graduated in 2013, all of them female.

The College of Medicine and the University Hospital graduated a total of 83 medical doctors in 2013. A total of 70 students have now graduated from the College’s Master’s programme in Biomedical Sciences, 12 of them in 2013. There are currently 18 Ph.D. students, 2 of them graduated in 2013. The number of SQU trained medical doctors joining the Oman Medical Specialty Board (OMSB) for postgraduate training, under the academic supervision of the COM&HS and SQUH, was 143 in 2013. These postgraduates joined 18 training programmes in different specialties. In this year the University also sponsored full scholarships for 4 Ph.D. students, and 8 Master’s students for between 1–5 years of training abroad (locations Canada, the UK, seen and Australia). The number of M.D. graduates who went abroad for residency and fellowship training in 2013 was 19 and 8 returned from training in this year. The locations were Canada, the UK, Australia, Ireland, Sweden and the Netherlands.

The College has continued to expand its e-learning system, with many departments making their teaching and course materials available on-line.

Research

In 2013, the College saw a major increase in research activity. It undertook 180 research projects (compared to 179 in 2010–11) to a total value of OMR 1,615,730. In 2013, staff of the College published a total of 328 research articles and 3 book chapters. In the same period, College staff made a total of 284 conference and seminar presentations. Of these, 33 were international oral presentations and 97 were international poster presentations. Also 44 Ph.D. and Master’s theses were supervised. The COMHS and SQUH organised 6 major conferences and 10 seminars or workshops in 2013.
Clinical Activity
By the end of 2013, the Hospital was opened at full capacity after the following developments:

- Significant development and increase in the different clinical specialties and services.
- Eight highly specialised doctors had returned from abroad while 19 scholars proceeded abroad for their studies in 2013.
- Continuous professional development policy established for doctors in fellowship and training.
- Purchase, commissioning, and installation of different types of new equipment.

The Hospital has continued to maintain ISO by bi-annual external review. The hospital decided to go ahead for accreditation by inviting Canadian Accreditation International to assess and implement the Canadian accreditation system.

By the end of 2013, the Hospital staff had increased to 2,804 employees including 439 doctors, 1,208 nurses and 521 technicians and 636 administrative/support staff.

Clinical activity at SQUH expanded in all areas. Outpatient visits were 124,206 compared to 121,482 in 2012 and inpatient admissions were 32,525 compared to 32,044 in 2012. The average length of stay stayed at 5 days. The number of day care patients was 14,566 compared to 12,969 in the preceding year. Finally, newborn live deliveries showed a 3.1% increase from 3,697 in 2011 to 3,812 in 2013.

Meriel Carboni
Annual Report Editor, Editorial Office, College of Medicine & Health Sciences

Thanks are due for the preparation of this report to the following staff of the Editorial Office in the College of Medicine & Health Sciences:

Joy Biruar, Design and Layout
Alaister Denoyo, Photographs
Natasha Smith, English Copy Editing
College of Medicine & Health Sciences - Overview

College Administration
The College Administration is the focal point of activities between the various Departments and the main University Administration. It consists of the Office of the Dean, the Director of Administration, four Assistant Deans (Preclinical, Clinical, Postgraduates Studies & Research, and Training & Community Service) and administrative staff.

The College Board met 11 times (9 regular meetings & 2 extraordinary meetings) between during January and December 2013. The following key matters were discussed:

[1] Accreditation of the MD Programme of the College of Medicine & Health Sciences (COMHS).
[2] Report of the Committee on strengthening bonds between the COMHS and Sultan Qaboos University Hospital (SQUH) at Sultan Qaboos University.
[3] Awarding Clinical Academic Titles to SQUH Medical Staff and Clinical Titles/Privileges to COMHS Faculty providing Clinical Service in SQUH.
[4] SQU Academic Health Science Centre (SQU-AHSC).
[6] Proposal for a Medical Research Centre.
[8] Non-practising MD academics’ and doctors’ salary scale.
[10] Khoula Hospital Department of Surgery for training COMHS Interns.
[11] Changing the name of BSc Medical Laboratory Sciences (MLS) degree to “BSc Biomedical Sciences (BMS)”.
[12] Quantification of teaching and protected time for Undergraduate teaching.
[16] Proposal on Master’s Program in Mental Health in collaboration with the World Health Organization.

[17] Revision of transfer criteria from MD to BSc MLS Programme of COMHS.

[18] Proposal to minimise Master’s programmes to 3 semesters.

[19] Appointment of Dr. Muhammad Athar Sadiq as Assistant Professor in Cardiology Unit, Department of Medicine, COMHS.

[20] Proposal for construction of Outpatient Department and National Positron Emission Tomography/Computed Tomography (PET/CT) and Cyclotron Center Project at SQU Hospital.

[21] Installation of CCTV cameras in the COMHS.

Staff

Dean
Professor Omar Al-Rawas

Assistant Deans
Dr. Ibrahim Inuwa, Preclinical Affairs
Dr. Arunodaya Gujjar, Clinical Affairs
Dr. Khalid Al-Balushi, Research & Postgraduate Studies
Dr. Yahya Al-Farsi, Training & Community Service

COLLEGE ADMINISTRATION

Dean’s Office
Sagar Hussain, Executive Assistant to the Dean
Amal Al-Jassasi, Clerk
Qassim Al-Salhi, Clerk

Administration Office
Mohamed Al-Bulushi, Director of Administration
Mahmoud Al-Abri, Deputy Director
Safaa Al-Harasy, Administrative Assistant
Zakiya Al-Omairi, Follow-up & Communications Officer
Salim Al-Khaldi, Clerk
Bakar Al-Hinai, Storekeeper
Salim Al-Farai, Storekeeper
Examinations Office
Alphonsus Okoro, Examinations Officer
Nasser Al-Mufarji, Coordinator (study leave)

Preclinical Affairs
Zulfa Al-Busaidi, Student Affairs Officer
Shabbir Patel, Coordinator
Turkiya Al-Amri, Clerk

Clinical Affairs
Glorio Almeida, Coordinator, Clinical Affairs
Muna Al-Alawi, Clerk
Aisha Al-Wardi, Administrator, Clinical Electives Office
Madiha Al-Abri, Coordinator for Affiliated Hospitals

Training & Community Affairs
Aisha Al-Senaidi, Administrator, Medical Internship Programme Office

Research & Postgraduate Studies
Asma Al-Siyabi, Coordinator
Fauzia Al-Abrawi, Staff

Support Staff
Salem Al-Salhi, Photocopy Technician
Khalid Al-Hinai, Messenger
Haitham Al-Hinai, Messenger

Education Programmes

PRECLINICAL PROGRAMME – B.S.C. HEALTH SCIENCES
The preclinical programme is part of the M.D. curriculum and consist of a foundational phase (Phase I) and an integrated systems-based phase (Phase II). These phases cover a period of 3-4 years (6-8 semesters) depending on the level of the student. Phase I consists of 34 credit-hour courses whilst Phase II consists of 69 credit-hour courses.

Students who successfully completed phases I and II and achieve a high cumulative grade point average (cGPA ≥ 2.5) have the option of spending an extra year (Intercalated Phase) to obtain a B.Sc. degree before re-joining the next phase (Phase III) of the M.D. programme. The B.Sc. Health Sciences degree is awarded to students after successful completion of 120 credit hours. The student intake is around 120 per year. See http://www.squ.edu.om/medicine-health/tabid/2455/language/en-US/Default.aspx for details of the curriculum.
CLINICAL PROGRAMME
This is a three-year clinical programme during which the knowledge acquired during the Pre-Clinical phases (I and II) is applied to the clinical practice of medicine (Phase III). An M.D. degree is awarded upon completion of this programme. See www.squ.edu.om/medicine-health/tabid/8421/language/en-US/Default.aspx for an overview of the M.D. programme.

CLINICAL ELECTIVE PROGRAMME
An 8-week Elective Placement Programme is part of the second year of the Clinical Programme and is an essential requirement to qualify for the M.D. degree. Students experience the working pattern and culture at prestigious medical universities abroad during this rotation. The programme provides students with an opportunity to gain further experience and skills, as well as widen their horizons by exposure to different cultures and environments. This programme is sponsored by the University.

INTERNSHIP TRAINING PROGRAMME
This consists of 3 rotations of 4 months each in General Medicine, Surgery and either Child Health or Obstetrics/Gynaecology in hospitals across Oman which have been approved for this purpose by the College of Medicine & Health Sciences. The programme involves not only SQU graduates but those of other medical programmes in Oman and also Omani medical graduates trained in institutions abroad. Approximately 230 graduates take part in this programme each year.

POSTGRADUATE STUDIES
The College introduced a two-year Masters Programme in Biomedical Sciences in 2001. It has the following eight specialisations: Biochemistry & Molecular Biology; Clinical Biochemistry; Clinical Pharmacy; Medical Microbiology; Epidemiology & Medical Statistics; Physiology; Medical Physics, and Human & Clinical Anatomy.

The College now offers the following 8 Ph.D. programmes: Biochemistry; Microbiology & Immunology; Epidemiology & Public Health; Genetics; Clinical Pharmacy; Physiology; Human & Clinical Anatomy, and Radiology & Molecular Imaging.

The Oman Medical Specialty Board (OMSB) was established in June 1994 and became an independent entity in November 2006. Its role is to train high calibre and internationally recognised Omani medical specialists in diverse disciplines. These specialists provide leadership in clinical, research and healthcare service and boost the manpower resources of Oman thus making an important contribution towards translating national health policies into reality.

The OMSB has representatives from the University, the Ministry of Health and the medical services of the Sultan’s Armed Forces and the Royal Omani Police. It supervises and coordinates postgraduate training programmes as well as providing guidelines to ensure that the training meets international standards. Special-
ty committees staffed by highly experienced professionals run these programmes on a day-to-day basis.

The OMSB Office sources overseas postgraduate residency placements, particularly in North American universities, Australia and the UK. Residents who have received residency and postgraduate training abroad are required to return to Oman to strengthen the country’s manpower development efforts by focusing on the training of junior colleagues and students.
Sultan Qaboos University Hospital - Overview

Sultan Qaboos University Hospital (SQUH), with a total of 680 beds is the only teaching hospital in Oman. It currently has 679 of its beds in use, with 89 beds in ambulatory areas such as day care and Emergency. The goals of SQUH are to provide teaching, research and high-quality patient-centred care in an environment that supports continuous improvement.

During the year 2013, a number of developmental activities took place in SQUH. It is worthy of note that the renal transplantation service continued to provide patients with quality service. One kidney transplant was done in 2013. A total of 27 bone marrow transplants were also done. A total of 124,206 outpatients and 32,525 inpatients were seen in the course of 2013. The staff strength as of December 2013 stood at 2,804 employees, comprising 439 doctors, 1,208 nurses, 521 technical staff and 636 administrative/support staff.

Hospital Management

The Hospital Management embraces the senior leadership of all the units in the hospital administration. The Hospital Director-General, Deputy Director-General (Clinical Affairs) and Deputy Director-General (Nursing Affairs) together with the Heads of Clinical Departments hold a monthly Medical Advisory Committee (MAC) meeting. The MAC, with representatives from all clinical departments, serves as a focal point for continued improvement of care, and makes a report of every meeting to the Hospital Board.

Similarly, the Hospital Board, comprising the top management team of the Hospital and representatives of academic staff, clinical staff and diagnostic staff, chaired by the Dean, College of Medicine & Health Sciences, meets monthly during the academic year. Through the recurrent agenda items from the Hospital Director-General’s office, the members are kept informed about important matters in hospital management and developments in patient-related activities.

During 2013, much discussion was devoted to accommodating the significant increase in patient flow and maintenance of standards of research, teaching and service in the face of continued budget constraints.

Staff

Dr. Abdullah Al-Asmi, Hospital Director-General
Dr. Abdullah Al-Harthy, Deputy Director-General (Clinical Affairs)
Mr. Ahmed Al-Kindi, Deputy Director-General (Admin. & Finance)
Ms. Shinoona Al-Harthy, Acting Deputy Director (Nursing Affairs)
Administrative Staff
Yousuf Al-Balushi, Head of Coordination & Follow-Up
Solomon Ola, Coordinator/Rapporteur of Hospital Board
Moosa Abdubaqi, Coordinator
John Faloye, Coordinator
Maria Al-Omairi, Clerk
Ahmed Al-Rusheidi, Chief Messenger Supervisor
Fahdil Al-Farsi, Messenger

DEVELOPMENTAL ACTIVITIES
SQUH is continuing the process of development and growth in order to fulfill its main aims which are health education, research and clinical services. Furthermore, the Hospital plays a significant role in the community and the Hospital Management is committed to providing high-quality care services in collaboration with the College of Medicine & Health Sciences with the continued support of the University Administration.

PIioneer IN HEALTH CARE SERVICES
By the end of 2013, the Hospital was opened at full capacity after the following developments:

- Significant development and increase in different clinical specialties and services
- Eight highly-specialised doctors returned from abroad while 19 scholars proceeded abroad for their studies in 2013.
- Continuous professional development policy for doctors in fellowship and training.
- Purchase, commissioning and installation of different types of new equipment such as:
  - Thrombectomy Generator System for Arteries and Veins
  - Immunohistochemistry Autostainer
  - Portable Ultrasound System
  - Echocardiogram Unit
  - Echocardiography System
  - Pulmonary Function Laboratory
  - MRI Patient Monitoring System
  - Auditory Otoacoustic Emission System
  - Operating Microscope
  - Endoscopic Ultrasound Machine
  - Gastrointestinal Videoscope
  - Intravascular Ultrasound (IVUS)
  - Digital Laparoscopic System
- Flexible Fiberscope
- DNA Sequencer
- Ophthalmic Coherence Tomography
- Long Term EEG Machine
- DNA and RNA Extractor
- Pulse Oximeter
- EEG Recorder
- Surgical Drill.

QUALIFIED HUMAN RESOURCES
The Hospital Management believes in the training of Omani professionals abroad in order to achieve the goals of SQUH. Therefore, a total of 5–10 physicians are sent abroad yearly for higher education and fellowship training, with a total of over 100 doctors sent to Canada, USA, Australia and UK. Nine of these returned in 2012 and 8 in 2013. Also, we have established and completed the CPD system for continuous professional development.

A total of 151 members of staff from different departments attended external courses conducted by the Directorate of Training & CPD in 2013. A total of 589 members of staff (467 Omanis and 122 non-Omanis) attended 21 unscheduled in-house courses. A total of 3,017 participants attended 224 scheduled in-house courses conducted in 2013.

RECOGNITION
The Hospital continued to be recognised as a centre of excellence by visiting experts and through receiving invitations from other health organisations in the community to conduct symposia and lectures in order to enhance the level of education services in other institutions. The Hospital has continued to maintain ISO accreditation by bi-annual external review. Striving for better quality, the hospital decided to go ahead for accreditation by inviting Canadian Accreditation International to assess and implement the Canadian accreditation system.

WORK IN PROGRESS
Based on the Hospital’s aims and vision, the Hospital Development Committee plans to develop/update the current services through the following projects already approved by the Hospital Board:

- Theatres/Radiology Extension (almost completed)
- A 6-floor Haematology Centre (project in progress)
- Emergency Department Extension
• Administration Building
• Extensions to the Intensive Care Unit (ICU) and Cardiac and Paediatric ICUs (20–40 beds)
• Extension to the Central Sterile Supplies Department
• Renal Dialysis Unit
• Outpatient Department Building plus Day Care Unit.

FUTURE DEVELOPMENT
- Laboratory Building Extension
- Postgraduate Centre
- Seminar Rooms, Offices and On-call Rooms-Complex
- Staff Residential Building
- Multi-Storey Car Park.

CLINICAL ACTIVITIES
The increase in patient activities over the years has relied on strong commitment by all the medical, nursing, technical and administrative staff. The Hospital Management would like to acknowledge all their efforts towards continuous improvement. Such developments are unattainable without proper in-house and external training which has witnessed yet further improvement during the year 2013.

The role of SQUH as a major Omani health service provider continued in this period with a total of 124,206 outpatients and over 32,525 inpatients seen during the year. A total of 27 bone marrow transplants were done in 2013.

The number of day care patients in 2013 was 14,566 compared to 12,969 recorded in the preceding year. The use of day care reflects a healthy trend as the encouragement of ambulatory care results in considerable savings in the cost of delivery as well as improved quality.

Inpatient admissions increased still further in 2013 to 32,525 surpassing the previous year’s figure of 32,044 (increase of 1.5%). The average length of stay for the year 2013 was 5.0 days, which was the same as recorded in the previous year.

Finally, newborn live deliveries stood at 3,812, comprising of 1,864 males and 1,982 females. This was an increase of 3.1% over the 2012 figure of 3,697 total deliveries.
The Department of Anaesthesia, Intensive Care & Pain Management is a dynamic and very productive department of Sultan Qaboos University Hospital (SQUH). Our key roles are in the operating theatre, anaesthetising patients for all surgical specialties and subspecialties and in the Intensive Care Unit (ICU), managing critically ill patients. The Department provides 24-hour elective and emergency anaesthesia services to the entire hospital, including referrals from other health institutions. We manage a 25-bed ICU. We are also involved in inserting venous access devices, both implantable and percutaneous, to patients from various clinical departments. Pain management is also part of our departmental functions with acute and chronic pain management services. Cardiopulmonary resuscitation is a significant function of the Department and now cardiothoracic anaesthesia has also been added. The Department forms a solid part of the SQUH Trauma and Disaster management services.

The Pre-anaesthesia Assessment Clinic (PAC) has been fully functional since March 2009 and is open five days a week. Patients who have to undergo surgery are assessed here for surgical fitness at the outpatient department (OPD) level. This was initiated with the main aim of reducing inpatient cancellations—a key factor in improving hospital efficiency.
Staff

Acting Head of Department
Amarnath Shetty, Consultant

Deputy Head of Department
Mohammed Al-Ismaii, Consultant

Faculty

Karin Nollain, Senior Consultant
Suresh Chengode, Senior Consultant
Ram N. Rao, Consultant
Sinnakirouchenan, Senior Consultant
Rajini Kausalya, Senior Consultant
Ali Al-Abady, Consultant
Nasser Al-Kemyani, Consultant
Intisar Al-Macki, Consultant
Jaswinder Sharma, Consultant
Binoy Zachariah, Senior Specialist
Rahul Shabadi, Senior Specialist
Pardeep K. Sharma, Senior Specialist
Jyoti Burad, Senior Specialist
Devaraj N. Dyamanna, Senior Specialist
Aravind Narayanan, Senior Specialist
Hatem A. El Ghany, Senior Specialist
Sanath Kumar, Senior Specialist
Rohit Date, Senior Specialist
Chander Lal, Specialist
Nisha John, Specialist
Babji Kalapati, Specialist
Ajai K. Arora, Specialist
Pradeep Kumar, Specialist
Sonali Deoskar, Specialist
Abdur R. Abid, Specialist
Wael Riad, Specialist
Mohammed Hatab, Specialist
Sheebu P. A., Specialist

Darshana Rathod, Specialist
Zahra G. Ahmed, Specialist
Ziad Waadallah, Specialist
Shaikh K. Shakeer, Specialist
Nigel Kuriakose, Acting Specialist

Support Staff

Leena Chacko, Coordinator
Ibrahim Al-Farsi, Coordinator

Technicians

Mohammed Al-Badi, Anaesthesia Technician
Maheswariamma, Anaesthesia Technician
Bipin Aravind, Respiratory Therapist
Kingsly Prabhkaran, Respiratory Therapist
Sathyarayarayan P. Bai, Respiratory Therapist
Anil Kalarickal, Respiratory Therapist
Jayachandiran, Respiratory Therapist
Praisemabel, Respiratory Therapist
Midhun Mohan, Respiratory Therapist
Carlos Gatdula, Respiratory Therapist
Deepthi Alias, Respiratory Therapist

Highlights of the Year 2013

Training Provided

The Department conducted a workshop on Ultrasound-Guided Peripheral Nerve Blocks in December 2013. It was facilitated entirely by the Anaesthesia faculty of SQUH. The response was positive and the workshop very successful.

New Services

The service of ultrasound-guided peripheral nerve blocks is functioning very well and we are performing more than 500 blocks per year. This has revolutionised the practice of regional anaesthesia. The
Department is proud to have introduced this new service and also vascular access under ultrasound guidance.

NEW SUB-SPECIALTY
The sub-specialties of Neuroanaesthesia and Paediatric Anaesthesia are functioning well. In Paediatric Anaesthesia, we are doing several procedures even on extremely preterm babies and some of them are being done for the first time in Oman.

Teaching Programmes

UNDERGRADUATE TEACHING – NEW CURRICULUM
The Department is involved in the Integrated Module and teaching in the Pre-clerkship, Junior Clerkship and Senior Clerkship. For the Junior Clerkship, students come to us for the Anaesthesia Rotation and in Senior Clerkship we teach the ICU rotation.

JUNIOR CLERKSHIP PROGRAMME
During the one-week Anaesthesia rotation of the Junior Clerkship, students participate in the Department’s clinical activities and we teach topics relevant to basic anaesthetic management. The students are given ‘hands on’ experience, on both manikins as well as patients, under the close supervision of anaesthesiologists. The tutorials are aimed at making the student understand the use of airway adjuncts, respiratory equipment, central venous and arterial cannulation, regional blocks and drugs used in anaesthesia and cardiopulmonary resuscitation.

POSTGRADUATE PROGRAMME
Oman Medical Specialty Board (OMSB)
A 4-year residency programme in anaesthesia was started in September 2007 under the OMSB. After successful completion, the residents will do a further year of specialised training. The Department is actively involved in teaching the residents in the Anaesthesia programme, evaluating and assessing them on a regular basis.

Training Courses & CME Activities
The Department is actively involved in the teaching of courses organised by the SQUH Directorate of Training & CPD. These include the Advanced Cardiac Life Support (ACLS) provider course; the ACLS Recertification course; the Basic Life Support (BLS) provider course; the BLS Recertification course; the Pain Management
Course, and the Central Venous Access Device course.

Every Monday there is a CME session in the Department covering topics of recent interest in anaesthesia and intensive care. Doctors of the Department present interesting topics for professional development and update the staff. Residents are encouraged to attend.

Members of the Department are also part of the Oman Society for Anaesthesia & Critical Care (OSAAC) which is involved in regular CME activities and scientific sessions.

Clinical & Diagnostic Services
A total of 7,039 anaesthetic procedures were carried out in 2013 compared to 6,668 in 2012 and 5,591 in 2011. In 2013, a total of 4,599 elective cases were carried out as well as 2,440 emergency cases.

Figure 1: Anaesthesia statistics in 2013

Research

RESEARCH PROJECTS
Comparison of conventional and ultrasound guided techniques for radial artery cannulation to find out a better technique in terms of number of attempts, ease of insertion, time taken, in various sub-groups of patients with different hemodynamic status

Investigator: Dr. Jyoti Burad, Dept. Anaesthesia & ICU, SQU.
Regional versus general anaesthesia for emergency caesarean section: Procedural impact on maternal and neonatal outcome. Single centre retrospective study at Sultan Qaboos University Hospital, Muscat, Oman

Code: MREC #673  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Devaraj Dyamanna, Dept. Anaesthesia & ICU, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International

National
1. Sharma PK. Airway and Ventilatory Management in Trauma patient. Trauma Course for Nurses, SQUH, Muscat, Oman, 3 Jun 2013.


Poster Presentations

International
Behavioural medicine is an interdisciplinary field of medicine concerned with the integration of knowledge in the biological, behavioural, psychological and social sciences relevant to health and illness. Therefore, the Department of Behavioural Medicine embraces expertise from diverse fields including psychological sciences, anthropology, sociology and clinical psychiatry. The service is one of the best in the country and was one of the very first to provide modern diagnosis and research on behavioural medicine. For its clinical services, the Department provides state-of-the-art treatment and care of psychiatric disorders, much of it based on the innovative research done by our faculty. The Department has fully functioning services that address mental healthcare needs for all developmental milestones from the ‘cradle to the grave’. Thus, the Department provides child and adolescence mental health services, general adult mental health services as well as geriatric psychiatry. The Department strives, as an academic and clinical department, for excellence in learning, teaching and research and to be the flagship department in its field in Oman and the region. There is ample evidence to suggest that most illnesses, whether physical or psychiatric, are invariably influenced by biology, psychological and social factors and so a biopsychosocial approach is necessary. Therefore, in the approach to learning, teaching and research, efforts are made to determine how biopsychosocial-factors are central to the predisposition, onset, course and outcome of most disorders.
Whilst communicable diseases continue to be a source of attrition in a country like Oman, there is also the ‘silent epidemic’ of non-communicable diseases, often precipitated and exacerbated by an individual’s behaviour and lifestyle which can result in serious distress and often fatal diseases. Research in the Department has specifically focused on the psychosocial determinants of health and ill-health since biological sciences alone are not sufficient in the prevention of and intervention in matters related to disease. This has led the Department’s researchers to consider cultural variations when establishing psychological services in Oman. Research coming from the Department indicates that the incidence of psychological distress in Oman is common, with some minor differences in the incidence of the types of reaction.

We have come a long way since the time when the relevance of behavioural input in medical science was considered to be a ‘luxury’ only affordable in the industrialised world. Now the question is not how relevant behavioural medicine is for Oman, but how Oman is implementing behavioural medicine in its healthcare infrastructure. Given the rising magnitude of non-communicable diseases, there is immense relevance in a scientific approach to the study of human behaviour.

Staff

Head of Department
Samir Al-Adawi, Professor

Faculty
Ala’Aldin Al-Hussaini, Professor

Ziad A. J. Zaidan, Associate Professor
Marwan Al-Sharbaty, Associate Professor
Harith Al-Ghassany, Assistant Professor
Rodger Martin, Senior Consultant
Ather S. Jafri, Senior Consultant
Amre El Guenedi, Consultant
Hamed Al-Sinawi, Consultant
Ahmed S. B. Amer, Consultant
Yousif A. Obeid, Senior Specialist
Ahmed Al-Harrasi, Senior Specialist
Aziz Al-Naamani, Specialist
Nonna Viernes, Specialist
Amaal Ambusaidi, Specialist
Amira Al-Hosni, Specialist
Hassan Mirza, Specialist
Ibrahim Elzein, Senior House Officer
Zena M. Al-Sharbaty, Clinical Psychologist
Samira Al-Hamdan, Psychologist
Salwa Al-Redha, Psychologist
Abdullah Al-Sulaimani, Social Worker
Ahmed Al-Salmi, Social Worker
Khamis Al-Balushi, Social Worker
Khoula Al-Wahaibi, Social Worker
Younis Al-Hashim, Social Worker

Support Staff
Ravindran Kozhapatil, Coordinator
Govindan Mundayadan, Coordinator

Highlights of the Year 2013

As in previous years, the year 2013 witnessed enormous growth and expansion in the Department. The psychiatric residency programme had yet another year of substantial development. In line with changes in medical education, the Department has been instrumental in embracing the new curricu-
lum with its integrated approach to teaching. This approach has been shown to be in the vanguard for the much needed holistic approach to learning medical skills.

The Department has been active in local and international research collaborations and published a number of papers on various aspects of health trends in Oman. In this period, a number of articles have been published on issues pertinent to child and adolescent emotional, cognitive and behavioural functioning. These studies are timely as they form a much needed database on the mental welfare of ‘tomorrow’s people’ in Oman—as the bulk of the Omani population are either children or adolescents. Such a database is expected to provide enlightened views to safeguard their development. Road traffic safety is increasingly recognised as a health ‘enemy’ in Oman with many people either maimed or killed in road accidents. In response to this challenge, the Department has secured grants in collaboration with others to examine the biopsychosocial issues that contribute to this situation. Some preliminary data as well as a Ph.D. project have been completed in order to lay the groundwork for evidence-based good practice to mitigating road traffic crashes and their aftermath.

As testimony to its international stature, the Department has duly participated in the Classification of Mental and Behavioural Disorders in Arab Countries and the World Health Organization Expert Consultation Group on Feeding and Eating Disorders in order to shape the content of the forthcoming International Classification of Diseases, ICD-11.

The Department has been active at the national level in the anti-stigma campaign, ‘All for One’, which aims to eradicate the social stigma associated with people with compromised cognitive and emotional functioning.

As Oman has an increasing number of elderly people, the Department has been at forefront of promoting the well-being of these people. The Aging and Dementia Research Group was formed in order to advance research on Alzheimer’s and dementia as well as provide a venue to discuss care for those living with this disease and to establish a self-help group for caregivers.

There are a total of 24 members of nursing staff in the psychiatric unit: 22 staff on the ward and 2 staff in the outpatient department (OPD). An important feature of the Department’s clinical services is the essential role of nurses. Members of the nursing team won the awards for ‘Best Innovative Nurse’, ‘Best Documentation Nurse’ and ‘Best Nurse-Overall’, a major accomplishment.

Teaching Programmes
The main thrust of the Department’s teaching approach is to equip future Omani doctors with the ability to prevent, diagnose and treat various mental illnesses in the community at large and to expose our students to the empirical evidence that distress, disease and treatment are experienced in the context of cultural and social processes, as well as to introduce the idea of integrating mental health services into primary care.
The academic component includes: a regular seminar on the therapeutic skills of teaching and consultation; teaching on current issues in psychiatry, developmental psychology, behavioural medicine, psychological assessments, personality, bereavement, cross-cultural psychiatry and eclectic approaches to psychological intervention; a clinical clerkship in psychiatry; teaching of psychiatry residents; teaching liaison psychiatry in hospital; clinical OPDs; ward rounds and ward work, and the new liaison psychiatry service. To keep abreast with the development of psychiatry elsewhere, a regular Journal Club is held. External speakers are also part and parcel of this endeavour.

DEVELOPMENT OF THE NEW MEDICAL CURRICULUM

The Department has been active in developing its new curriculum for the new medical degree programme. Behavioural medicine lectures, tutorials and seminars are now fully integrated into the pre-clinical system modules of Phases 1 and 2 and the integrated modules. The Phase 3 clinical curriculum for behavioural medicine is being developed. Its primary focus is on the Pre-clerkship and Junior Clerkship training although it will be a contributing theme throughout the Senior Clerkship and Junior Internship phases. The Department will be contributing specific lectures, case studies and training in the Pre-clerkship stage on the topics of clinical assessment (young people, working adults and older adults); vulnerability for mental health (genetic versus environmental influences); models of stress and coping, and health psychology and chronic illness management. In liaison with other College departments, teaching is provided on specific clinical communication skills (e.g. working with psychotic patients) and clinical ethics (e.g. confidentiality and suicide management). The Junior Clerkship stage will focus on the advanced training of medical students in the clinical application of the basic skills learned within the Pre-clerkship stage, giving them clinical exposure to a wide range of psychiatric conditions and their medical and psychotherapeutic treatment.
POSTGRADUATE PROGRAMME
The Department continued in this period to train Family Medicine & Community Health residents and contributed to revising the programmes for the examination for Membership of the Royal College of General Practitioners (MRCGP), the Arab Board of Psychiatry and the Oman Medical Specialty Board (OMSB) residency training programme (including writing the curriculum, preparing for examinations and writing their programmes).

Training Courses & CME Activities
The Department conducted a number of workshops on various aspects of stress and coping; the psychology of chronic disease management; research methodology, and issues pertinent to social medicine.

Clinical & Diagnostic Services
On the hospital side, the combination of referrals from all part of Oman and prompt service delivery put the Department in the vanguard of psychiatric services in the country. The Department is one of the few in Oman which provides for specialist tertiary referrals. It has a multidisciplinary team approach designed for the optimum treatment of patients and training of medical students. The Department has a support staff of psychologists, nurses, social workers and other clinicians.

The Department strives to offer comprehensive liaison psychiatry with other branches of medicine as well as psychosocial intervention and various social work services with its fully-functioning team of psychiatrists, psychologists and social workers. The Department offers unique clinical and diagnostic services—including a wide range of assessments relevant for the diagnosis of cognitive disorders and personality testing. The assessments provided by our staff employ specialised testing procedures to integrate medical, neurological and behavioural data with the findings in order to answer any of a number of referral questions. Referrals to our services typically consist of, but are not limited to, questions concerning: (a) differential diagnoses between functional and organic syndromes (e.g. depression versus dementia); (b) the delineation of spared and impaired cognitive functions secondary to central nervous system dysfunction; (c) the establishment of behavioural baseline measures to monitor the recovery or progression of a central nervous system dysfunction; (d) the comparison of pre- and post-pharmacological states, surgical, and behavioural interventions; (e) the assessment of cognitive/behavioural functions for the formulation of rehabilitation, management strategies, and/or educational or employment placement, and (f) the evaluation of neurocognitive status for the purpose of tests for disability, compensation and liability determinations. One of the new developments in this regard was the establishment, from September 2010, of an Old Age Psychiatry service. It provides services for the increasing ageing population in Oman. A major undertaking is to develop cognitive testing for the elderly population in Oman as well as to liaise with nuclear medicine and radiology to obtain neuro-imaging data.
Research

RESEARCH PROJECTS

Effect of dietary supplementation of fruits grown in Oman on cognitive decline in Alzheimer’s dementia, mild cognitive impairment, vascular cognitive impairment and traumatic brain injury


Investigators: Dr. Mohamed Essa, Ms. Roopa Koshy, Dept. Food Science & Human Nutrition, SQU; Dr. Samir Al-Adawi, Dr. Hamed Al-Sinawi, Dept. Behavioural Medicine, SQU; Dr. Abdullah Al-Asmi, Dept. Medicine, SQU; Dr. Ragini Vaishnav, Dept. Pharmacology, SQU.

Internet addiction in a sample of secondary and university Omani Students


Investigators: Prof. Abdelmajid Bouazza, Dept. Information Studies, College of Arts, SQU; Dr. Marwan Al-Sharbati, Dept. Behavioural Medicine, SQU.

A study of the nutritional and metabolic factors contributing to the occurrence of autistic spectrum disorder among children in the Sultanate of Oman


Investigators: Dr. Mostafa Waly, Dept. Food Science & Nutrition, College of Agriculture, SQU; Dr. Marwan Al-Sharbati, Dept. Behavioural Medicine, SQU.

Prevalence of depression among adults with sickle cell disease

Code: MREC #718  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. Hamad Al-Sinawi, Dept. Behavioral Medicine, SQU.

Adolescent-onset psychosis: Demographic variables and clinical characteristics of inpatient psychotic adolescents at the Department of Behavioural Medicine at SQUH


Investigators: Dr. Hassan Mirza, Dept. Behavioral Medicine, SQU.

Public knowledge of dementia in Oman

Code: MREC #735  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. Hamad Al-Sinawi, Dr. Ahmed Al-Harrasi, Dept. Behavioral Medicine, SQU.
Stress and burden of care among dementia carers in Omani
Code: MREC #736 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigators: Dr. Hamad Al-Sinawi, Dept. Behavioral Medicine, SQU.

Average length of stay of elderly people in SQUH
Code: MREC #738 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigators: Dr. Hamad Al-Sinawi, Dept. Behavioral Medicine, SQU.

Genetic basis of schizophrenia in Oman
Code: MREC #759 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Hamad Al-Sinawi, Dr. Hassam Mirza, Dept. Behavioral Medicine, SQU.

Prevalence of depression among stroke patients and relation with demographic and stroke characteristics
Code: MREC #760 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Nawal Al-Zadjali, Dept. Behavioral Medicine, SQU.

Compassion fatigue among resident physicians in the Oman Medical Specialty Board
Code: MREC #771 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Ms. Zena Al-Sharbati, Dept. Behavioral Medicine, SQU.

Rates of nonadherence, discontinuation, relapse and readmission in patients with schizophrenia
Code: MREC #778 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Ahmed Al-Harasi, Dept. Behavioral Medicine, SQU.

Physical co-morbidities among patients with dementia seen at Sultan Qaboos University Hospital
Code: MREC #803 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Azza Al-Hinai, Dept. Behavioral Medicine, SQU.

Effectiveness of contact-based education in changing negative perceptions and attitudes towards mental illness among medical students at Sultan Qaboos University
Code: MREC #833 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Amaal Ambusaidi, Dept. Behavioral Medicine, SQU.
Schizophrenia profile

Code: MREC #834  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Amira Al-Hosni, Dept. Behavioral Medicine, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


Books & Book Chapters

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International

National
1. Al-Adawi S. Psychosocial sequelae of road traffic injuries: For whom the bell tolls. 1st International Mental Health Conference, Al-Masara Hospital, Oman, 1–2 Dec 2013.


5. Al-Adawi S. Occupational Stress. Lecture to Oman Cables Industry (SAOG), Al Bustan Hotel, Muscat, Oman, 15 Sep 2013.

6. Al-Adawi S. Procrastination is the thief of time. Lecture given to Oman Cables Industry (SAOG), Al Bustan Hotel, Muscat, Oman, 16 Sep 2013.


9. Al-Adawi S. Psychosocial sequelae of road traffic injuries: For whom the bell tolls? Public Health Forum, Khoula Hospital, Muscat, Oman, 9 Apr 2013.


Poster Presentations

International


Seminar Presentations

National


Thesis Supervision

Student Name: Omar Al-Farsi

Qualification: Ph.D.

Title: Stress and the quality of life of families having children with autism spectrum disorder.

Supervisor: Dr. Marwan Al-Sharbatly

Date of completion: On-going
<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Dr. Aziz Al-Naamani</th>
</tr>
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<tbody>
<tr>
<td>Qualification:</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Title:</td>
<td>Neuropsychiatric syndrome in Oman among the victims of acquired brain injuries</td>
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<tr>
<td>Supervisor:</td>
<td>Prof. Samir Al-Adawi</td>
</tr>
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<tr>
<th>Student Name:</th>
<th>Tayyiba Almarri</th>
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<tr>
<td>Qualification:</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Title:</td>
<td>Investigating alcohol consumption patterns, associated cognitions and behaviors of Arab nationals living in the Arabian Gulf countries</td>
</tr>
<tr>
<td>Supervisor:</td>
<td>Prof. Samir Al-Adawi</td>
</tr>
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<td>Date of completion:</td>
<td>On-going</td>
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</tbody>
</table>
The mission of the Biochemistry Department is to maintain excellence in service, teaching and research. The Department is involved in both pre-clinical and clinical teaching. In the pre-clinical years, teaching concentrates mainly on basic principles of biochemistry and metabolism. Teaching in the clinical years is devoted to clinical chemistry, including interpretation of biochemical data on patients. The Department is also engaged in teaching biochemistry to medical laboratory science undergraduates and to nursing students. It also offers a graduate programme leading to M.Sc. and Ph.D. degrees in biochemistry. The Department also actively participates in the postgraduate training of doctors under the auspices of the Oman Medical Specialty Board.

The Department’s research interests cover diverse aspects of biochemistry, as well as structural and molecular biology. Research focuses around the development of biochemical tests for detecting mutations and mapping various monogenic and polygenic disorders including hypertension, diabetes, deafness and hyperlipidaemias.

The Department also provides a clinical biochemistry service to Sultan Qaboos University Hospital (SQUH) on a 24-hour basis and serves as a referral laboratory for hospitals all over the Sultanate. A total of 21 biomedical scientists serve the Department at SQUH.
Staff

Head of Department
Khalid Al-Rasadi, Senior Consultant

Faculty
Riad Bayoumi, Professor
Nadia Al-Wardy, Associate Professor
Jumana Saleh, Associate Professor
Hamza Babiker, Associate Professor
Clifford Abiaka, Assistant Professor
Marit Delghandi, Assistant Professor
Yahya Tamimi, Assistant Professor
Yajnavalka Banerjee, Assistant Professor
Fahad Al-Zadjali, Assistant Professor
Nafila Al-Riyami, Consultant
Khalid Al-Waili, Consultant
Arwa Al-Kindi, Lecturer

Support Staff
Mohammed Al-Kindi, Superintendent (College)
Halima Aidid, Superintendent (Clinical)
Mater Al-Maney, Chief Biomedical Scientist (Clinical)
Adil Al-Wahaibi, Chief Biomedical Scientist (Clinical)
Younis Al-Musafir, Chief Biomedical Scientist (Clinical)
Sameera Al-Harrasy, Chief Biomedical Scientist (Clinical)
Zakiya Al-Zakwani, Chief Biomedical Scientist (Clinical)
Laila Al-Hinai, Chief Biomedical Scientist (Clinical)
Romulo Cipriano, Senior Biomedical Scientist (Clinical)
Suleiman Al-Riyami, Senior Biomedical Scientist (Clinical)
Hamed Al-Riyami, Senior Biomedical Scientist (Clinical)
Hameeda Al-Barwani, Senior Biomedical Scientist (College)

Abdulrahim Al-Abri, Biomedical Scientist (College)
Sana Hasari, Biomedical Scientist (College)
Khalsa Al-Lamki, College
Zainab Al-Hashami, College
Hala Al-Baadi, College
Zeyana Al-Dahmani, College
Manal Al-Khanbashi, College
Taruna Dutt, Coordinator (College)
Marina Bendecio, Coordinator (Clinical)

Highlights of the Year 2013
In the year 2013, Dr. Khalid Al-Rasadi was appointed as Head of the Department. Ms. Arwa Al-Kindi returned and joined the Department as a lecturer after completing her master’s degree from Sussex University, UK. Mr. Abdulrahim Al-Abri was awarded a His Majesty’s Scholarship to study for a Ph.D. New technical staff, Ms. Zeyana Al-Dahmani and Ms. Manal Al-Khanbashi, joined the Department.

Teaching Programmes

UNDERGRADUATE MEDICAL PROGRAMME
The Department teaches biochemistry in the new M.D. curriculum on the following courses: Molecular Biology & Introductory Genetics and Enzymology & Metabolism. The Department also participates in various system courses like the Hematopoietic System, Endocrine System, Respiratory System, Tissues, Urinary System, 7th year clinical rotations, the Integrated Lecture Series and the student Research Project.

B.SC. BIOMEDICAL SCIENCES (BMS)
The Department is teaching four courses in the BMS
degree in semesters 6 through 10. They are: Molecular Diagnostics; Systems Pathophysiology; Investigations of Endocrine Diseases; Advanced Clinical Chemistry, and Laboratory Operations.

NURSING DEGREE
The Department of Biochemistry offers one course in Biochemistry for Nursing students.

POSTGRADUATE PROGRAMMES
In the postgraduate programme, the Department offers the following four courses: Biochemical Basis of Disease; Instrumentation and Biochemical Techniques; Molecular Biology, and Methodology in Clinical Biochemistry. During 2012/2013, the Department had 14 students registered for an M.Sc. degree and 8 students studying for their Ph.D.

Clinical & Diagnostic Services

SERVICE PROVISION
The Department of Clinical Biochemistry provides a wide range of routine and specialised investigations. Some of the specialised tests such as neonatal screening for inborn errors of metabolism are unique in Oman and hence the Department offers a referral laboratory service for such investigations. Service is provided to SQU hospital on 24-hour basis. The number of tests performed from January to December 2013 was 1,571,293 (13.3% increase compared to 2012).

Figure 1: Diagnostic services in 2005–2013
The Clinical Biochemistry Department also manages the Commercial Laboratory Services offered to selected hospitals within the private sector, e.g. Muscat Private Hospital, Badar Al-Samaa Polyclinic and Hatat Polyclinic.

**NEW TESTS**
Plasma intraoperative parathyroid hormone, plasma amino acids, urine amino acids and cerebrospinal fluid amino acids analysis have been introduced in the laboratory.

**POINT-OF-CARE TESTING**
The Department maintains the quality assurance of the blood gas analysers outside the laboratory, i.e. in the Emergency Medicine Department, the operating theatre, and the Intensive Care and Neonatal units.

**Research**

**RESEARCH PROJECTS**

*The clinical and genetic characterization of type-2 diabetes mellitus in Omani*

**Code:** RC/MED/BIOC/10/01  **Dates:** 2010–2013  **Value:** OR 87,300  **Funder:** The Research Council, Oman

**Investigators:** Prof. Riad Bayoumi, Dept. Biochemistry, SQU; Prof. Mohammed Hassan, Dr. Sulayma Al-Barwani, Dept. Physiology, SQU; Prof. Nicolas Woodhouse, Dr. Omayma El-Shafie, Dept. Medicine, SQU; Dr. Mohammed Al-Shafae, Dept. Family Medicine & Public Health, SQU.

*Identification of novel therapeutics targets for inflammatory-associated human disorders*

**Code:** SR/MED/BIOC/13/01  **Dates:** 2013–2015  **Value:** OR 94,200  **Funder:** His Majesty's Strategic Research Fund

**Investigators:** Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU; Dr. Sulaiman Al-Hashmi, Dept. Genetics, SQU; Dr. Mohammed Boullassel, Dept. Haematology, SQU.

*Analysis of gene expression in ulcerative colitis*

**Code:** FURAP 2013 #1  **Dates:** 2013–2014  **Value:** OR 2,300  **Funder:** The Research Council, Oman - Faculty Mentored Undergraduate Research Award Program

**Investigators:** Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU.

*Family based associations of variants of SOCS2 gene and traits of type 2 diabetes*

**Code:** FURAP 2013 #2  **Dates:** 2013–2014  **Value:** OR 2,300  **Funder:** The Research Council, Oman - Faculty Mentored Undergraduate Research Award Program

**Investigators:** Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU.
Analysis of molecular epigenetic programming of diabetes mellitus
Investigators: Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU; Dr. Khalid Al-Balushi, Dept. Pharmacology, SQU; Dr. Starling Emerald, Dept. Anatomy, UAE University.

Population genetics of malaria parasites in relation to geographical, transmission intensities
Code: N/A  Dates: 2010–2013  Value: SEK 1,500,000  Funder: Swedish International Development Cooperation Agency
Investigators: Dr. Göte Swedberg, Dept. Medical Biochemistry & Microbiology, Uppsala University, Sweden; Dr. Hamza Babiker, Dept. Biochemistry, SQU.

Asian regional capacity development for research and social determinant of health
Investigators: Dr. Fahad Al-Zadjali, Dept. Biochemistry, SQU; Dr. Abdullah Al-Muniri, The Research Council, Oman.

A study of the effects of pregnancy-related thyroid autoimmunity and oxidative stress in Omani women from conception to parturition
Code: IG/MED/BIOC/10/04  Dates: 2010–2013  Value: OR 7,000  Funder: SQU
Investigators: Dr. Clifford Abiaka, Dept. Biochemistry, SQU; Dr. Lovina Machado, Dept. Obstetrics & Gynaecology, SQU.

Lipids of minor physiological abundance as modulators of thrombin generation.
Investigators: Dr. Yajnavalka Banerjee, Prof. Riad Bayoumi, Dr. Jumana Saleh, Dr. Khalid Al-Rasadi, Dept. Biochemistry, SQU.

Identification and characterization of novel pharmacologically active proteins from the venoms of snakes native to the Sultanate of Oman
Code: IG/MED/BIOC/12/01  Dates: 2012–2014  Value: OR 13,600  Funder: SQU
Investigators: Dr. Yajnavalka Banerjee, Prof. Riad Bayoumi, Dept. Biochemistry, SQU; Dr Khalil Al-Farsi, Dept. Haematology, SQU; Mr. Sayed Farooq, Small Animal House, SQU.

The analysis of SCN5A as a candidate gene for heart pacemaker control in Oman Family Study
Code: IG/MED/BIOC/12/02  Dates: 2012–2013  Value: OR 4,736  Funder: SQU
Investigators: Dr. Marit P. Delghandi, Prof. Riad Bayoumi, Dept. Biochemistry, SQU; Dr. Sulayma Al-Barwani, Prof. Mohammed O. Hassan, Dept. Physiology, SQU.
The suppressor of cytokine signalling 2 (SOCS2): role in the development of inflammatory bowel disease


Investigators: Dr. Fahad Al-Zadjali, Prof. Riad Bayoumi, Dept. Biochemistry, SQU; Dr. Ibrahim Al-Haddabi, Dept. Pathology, SQU; Dr. Amira Al-Kharusi, Dept. Physiology, SQU; Prof. Gunnar Norstedt, Karolinska Institute, Sweden.

Rapamycin derivatives differential inhibition of the mTOR signaling pathway in colorectal cancer

Code: IG/MED/DEAN/13/02 Dates: 2013–2014 Value: OR 9,000 Funder: SQU

Investigators: Dr. Yahya Tamimi, Dept. Biochemistry, SQU; Prof Mansour Al-Moundhri, Dept. Medicine, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International


THESIS SUPERVISION

Student Name: Sawsan Al-Sinani
Qualification: Ph.D.
Title: The clinical and genetic characterization of type 2 diabetes mellitus in Omani
Supervisor: Prof. Riad Bayoumi
Date of completion: On-going

Student Name: Bashair Al-Riyami
Qualification: Ph.D.
Title: Hormonal regulation of acylation-stimulating protein production and receptor expression in rodent regional adipose tissue
Supervisor: Dr. Jumana Saleh
Date of completion: On-going

Student Name: Amal Gadalla
Qualification: Ph.D.
Title: Factors influencing malaria parasites Plasmodium falciparum transmission strategies
Supervisor: Dr. Hamza Babiker
Date of completion: On-going
<table>
<thead>
<tr>
<th>Student Name</th>
<th>Amani Ahmed</th>
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<tbody>
<tr>
<td>Qualification</td>
<td>Ph.D.</td>
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<tr>
<td>Title</td>
<td>Genetic mapping of drug resistant <em>Plasmodium falciparum</em> in Sudan</td>
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<td>Dr. Hamza Babiker</td>
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<table>
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<tr>
<th>Student Name</th>
<th>Najma Al-Kharusi</th>
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<tbody>
<tr>
<td>Qualification</td>
<td>Ph.D.</td>
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<tr>
<td>Title</td>
<td>Genetic susceptibility to CVD and related metabolic disorders.</td>
</tr>
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<td>Supervisor</td>
<td>Prof. Riad Bayoumi</td>
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<tr>
<td>Date of completion</td>
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<tr>
<th>Student Name</th>
<th>Ibtisam Al-Lawatia</th>
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<tr>
<td>Qualification</td>
<td>Ph.D.</td>
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<tr>
<td>Title</td>
<td>Sleep deprivation and association with metabolic syndrome</td>
</tr>
<tr>
<td>Supervisors</td>
<td>Dr. Mohammed Al Abri, Dr. Fahad Al-Zadjali</td>
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<tr>
<td>Date of completion</td>
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</table>

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Amira Al-Kharusi</th>
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</thead>
<tbody>
<tr>
<td>Qualification</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Title</td>
<td>Mechanisms in control of prolactin and growth hormone sensitivity</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Prof. Gunnar Norstedt, Dr. Fahad Al-Zadjali</td>
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<tr>
<td>Date of completion</td>
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<tr>
<th>Student Name</th>
<th>Amna Al-Araimi</th>
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</thead>
<tbody>
<tr>
<td>Qualification</td>
<td>Ph.D.</td>
</tr>
<tr>
<td>Title</td>
<td>Molecular study of inflammatory processes and role of growth hormone</td>
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<td>Supervisor</td>
<td>Dr. Fahad Al-Zadjali</td>
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<td>Student Name</td>
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<tr>
<td>AbdulHakeem Al-Hinai</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Mohsin Al-Taqi</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Basma H. Al-Jabri</td>
<td>M.Sc.</td>
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<tr>
<td>Ward Al-Muna Al-Zidi</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Student Name</td>
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<tr>
<td>Elango Abhirami</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Afraa Al-Abri</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Raja Al-Sidairi</td>
<td>M.Sc.</td>
</tr>
<tr>
<td>Ishraq Al-Kindi</td>
<td>M.Sc.</td>
</tr>
</tbody>
</table>
The Department of Child Health is one of the pioneer Departments in the College of Medicine & Health Sciences (COMHS) and Sultan Qaboos University Hospital (SQUH). The Department accounts for more than a third of total SQUH admissions and provides the best of patient care from birth to adolescence, encompassing all subspecialties.

The Department has well-developed undergraduate teaching and training programmes collaborating with other sister institutions locally and internationally. Department members are actively involved in almost all of the COMHS educational activities and committees including the Curriculum and Examination committees. Department members have contributed significantly towards the development and implementation of the new curriculum. The Department trains many foreign undergraduate medical students during their elective rotations.

The Department also has a highly integrated postgraduate training programme and is equipped with excellent Clinical Teaching Units (CTUs) run by experienced teachers. Our Department started the first CTU in Oman and has been complimented on the initiative by a number of international medical educationalists and accreditation agencies. Various other departments have since followed our example. The Department teaches and trains junior doctors, preparing them for various examinations affiliated to the Royal College of Paediatrics & Child Health (UK), Royal College of Physicians & Surgeons of Glasgow and the
Arab Board. The Department is the only centre in Oman offering subspecialty training of paediatric residents in metabolic diseases, neurology, immunology and haemato-oncology. It also serves as the national referral centre for polio surveillance, various benign haematological conditions and leukaemia. The Genetic-Metabolic Unit has expanded and moved to a dedicated building, in order to cater to the overwhelming numbers and this is well supported by the Development Progress Clinic, started by Dr. Watfa Al-Mamari. The cardiology services have expanded over the last year and are exploring the possibility of starting paediatric interventional cardiology services; currently, there is a twinning programme with the Royal Hospital. The long-term follow-up clinics including the Post Bone Marrow Transplant Clinic and the Cancer Survival Clinic are in full swing, along with the Chemotherapy Clinic. Multi-disciplinary clinics for Haemophilia Comprehensive Care and the Haemostasis have also been started.

The Department conducts high-quality research with state-of-the-art support from the SQU genetic laboratories, leading to publications in high-impact peer-reviewed indexed journals. Collaboration with international centres of excellence in paediatrics has benefited a large number of sick children, especially those with haematological diseases.

To sum up, the Department strives to achieve excellence in the region in undergraduate and postgraduate education, research and patient-centered care. It also plays a major role in the achievement of excellence in all aspects of child healthcare in the country and the community. As a visionary strategic plan, we feel that the time is now right to develop an Institute of Child Health and a Children's Hospital.

**Staff**

**Head of Department**
Yasser Wali, *Professor*

**Faculty**
Zakia Al-Lamki, *Professor*
Muna Al-Saadoon, *Assistant Professor*
Zahraa A. H. Al-Lawati, *Clinical Lecturer*
Nawal Al-Shamli, *Clinical Lecturer*

**Hospital Staff**
Hussein Al-Kindy, *Senior Consultant*
Amna Al-Futaisi, *Senior Consultant*
Saif Al-Yaarubi, *Senior Consultant*
Ibtisam B. Elnour, *Senior Consultant*
Salem Al-Tamemi, *Senior Consultant*
Roshan L. Koul, *Senior Consultant*
P. C. Alexander, *Senior Consultant*
Siham Al-Sinani, *Senior Consultant*
Reem Abdwani, *Senior Consultant*
Matthew Zachariah, *Senior Consultant*
Abdulhakim Al-Rawas, *Consultant*
Khalfan Al-Senadi, *Consultant*
Mohamed Abdellatif, *Consultant*
Anas-Alwogud Abdelmogheth, *Consultant*
Hashim Javad, *Consultant*
Watfa Al-Mamari, *Consultant*
Asad U. Rahman, *Consultant*
Azza Al-Shadhani, *Senior Specialist*
Irfan Ullah, *Senior Specialist*
Masood Ahmed, *Senior Specialist*
Mohamed Elshinawy, *Senior Specialist*
Wafa Bashir, Senior Specialist
Mathew Kripail, Senior Specialist
Zenaida Reyes, Senior Specialist
Surekha Tony, Senior Specialist
Ismail Elbeshlawi, Senior Specialist
Mohammed A. El-Naggar, Senior Specialist
Mohammed Fazalullah, Senior Specialist
Hanan Fawzy, Senior Specialist
Akram Zakria, Senior Specialist
Eman Abdalla, Specialist
Aamir Qais M. H., Specialist
Maria F. Bataclan, Specialist
Cheryl Montemayor, Specialist
Naga R. Dhande, Specialist
Raghad Abdwani, Specialist
Yusriya Al-Rawahi, Specialist
Laila Al-Yazidi, Specialist
Renjit Mani, Specialist
Rana Abelrahim, Specialist
Shafiq U. Rehman, Specialist
Fatma E. Amer, Specialist
Mazen A. M. Abuanza, Specialist
Alldai M. Ahmed, Specialist
Sharef W. Sharef, Specialist
Marwa Fawzy, Specialist
Ashfaq Khan, Senior Medical Officer
Ashraf A. Saad, Senior Medical Officer
Hilal N. B. Al-Riyami, Senior Medical Officer
Mohammed Al-Nuaimi, Senior Medical Officer
Ahmed B. Idris, Senior Medical Officer
Hatem M. M. Al-Rawahi, Senior Medical Officer
Anwar H. Al-Omairi, Senior Medical Officer
Fatma J. M. Al-Amrani, Senior Medical Officer

Support Staff
Aisha Al-Maskary, Coordinator (College)
Jolina Balasta-Pogoy, Coordinator (Hospital)
Aisha Al-Rawahi, Social Worker
Fatma Al-Farsi, Play Therapist

Amna Al-Alawi, Play Therapist
Kawther Al-Khulaibi, Play Therapist
Fathiya Al-Huseini, Play Therapist

Highlights of the Year 2013

Scholarly and Academic Activities
The Paediatric Pulmonology team organised the 1st Cystic Fibrosis Family Day at SQUH and the Oman Thoracic Day at SQU was headed by Dr. Hussein Al-Kindy. The Paediatric Gastroenterology Unit, led by Dr. Siham Al-Sinani with the collaboration of the Paediatric Surgery Unit, arranged the visits of two distinguished specialists in hepatology, gastroenterology and nutrition from Kings’ College Hospital, London, and the Global Hospital, Chennai, India. They facilitated a symposium in SQUH called ‘Current Update in Pediatric Liver Diseases’. The Haematology/Oncology Team, under the headship of Prof. Yasser Wali with the assistance of COMHS and SQU Administration, co-organised and hosted the 1st Pediatric Oncology East Mediterranean Group (POEM) Business Meeting, which attracted a number of international speakers and guests from the USA, UK, Egypt, Lebanon and prominent Arabian Gulf countries as well as many participants from Oman.

Prof. Yasser Wali, Asst. Prof. Muna Al-Saadoon and Prof. Zakia Al-Lamki served in this period on the Editorial Board of the SQU Medical Journal (SQUMJ). Dr. Amna Al-Futaisi, Dr. Saif Al-Yaarubi and Dr. Reem Abdwani served in this period on the Editorial Board of the Oman Medical Journal (OMJ). Both of these journals are indexed in Scopus with full text articles available in PubMed. Dr. Roshan Koul was a member of the International Advisory Board to the Journal of Pediatric Neurology.
Prof. Yasser Wali was a reviewer for the Journal of Pediatric Hematology/Oncology, the Postgraduate Medical Journal, SQUMJ, OMJ and the Alexandria Journal of Pediatrics. Dr. Roshan Koul was a reviewer for SQUMJ, OMJ, the Saudi Medical Journal, Neurosciences, Neurology India and the Journal of Pediatric Neurology.

NATIONAL AND REGIONAL COMMITTEES
The Department members continuously contributed to various external and internal committees including: Dr. Siham Al-Sinani, Executive Board Member of the Oman Pediatric Society; Dr. Hashim Javad, Chairman of the Quality Development Committee dealing with the Accreditation Canada International (ACI) process, a continuous commitment to assure the quality improvement of SQUH, together with his deputies, Dr. Wafa Bashir, Dr. Alexander P. C. and Dr. Sharef Sharef; Dr. Salem Al-Tamemi, Member of the Immunization Committee, Ministry of Health; Dr. Amna Al-Futaisi, Member of the Medical Promotion Committee, Ministry of Diwan; Prof. Yasser Wali and Dr. Abdulhakim Al-Rawas, Members of the New Muscat Pediatric Hospital Committee; Prof. Yasser Wali and Prof. Zakiya Al-Lamki, Technical Experts and Members of the Higher Medical Committee (HMC) for haematology and oncology cases, Dr. Ibtisam El Nour for nephrology cases, Dr. Mohammed Abdellatif for neonatology cases, Dr. Amna Al-Futaisi and Dr. Roshan Koul for neurology cases. Dr. Roshan was also a member of the National Polio Surveillance Committee; Prof. Zakiya Al-Lamki, Member of the Research and Ethical Review Committee, Ministry of Health, and Asst. Prof. Muna Al-Saadoon, Member of the National Bioethics Committee, the National Maternal & Child Health Committee and the National Early School Improvement Task Force.

COMMUNITY SERVICE
We take great pride in continuing to serve the community, raising funds to serve children with all kinds of special needs in various ways. The School Health Education Programme has been an innovative initiative from the Department, addressing issues of healthy lifestyle, alcohol and drug abuse, obesity/healthy diet for children studying in various schools. We provide consultancies in national hospitals and in India for haematology cases. We offer parents counselling and education for home ventilation. The Department participates in medical missions at the Philippine Embassy for neonatal clinical services and takes part in radio and TV campaigns to raise awareness about paediatric hematology/oncology diseases; autism, asthma and immunological diseases. The Department also helps in awareness campaigns about genetic blood disorders and juvenile diabetes. We provide free paediatric services to sick children in orphanages in Oman.
Teaching Programmes
The Department is actively involved in undergraduate and postgraduate teaching.

UNDERGRADUATE PRECLINICAL PROGRAMME
The Department is committed to the process of delivering to undergraduate students the main concepts and principles of child health that will help them to undertake their internship duties safely and also decide on their future postgraduate studies.

The Department has structured teaching activities for students under the responsibility of the clinical year coordinators and the Education Committee of the Department. The students have different components of assessment during the rotations and at the end of the rotation, organised by the clinical coordinators and monitored by the Department’s Examination Committee.

Members of the Department are involved in the following courses in the preclinical studies of the COMHS: the Clinical Communication and Clinical Skills courses.

UNDERGRADUATE CLINICAL PROGRAMME
Phase III of the new curriculum has been successfully implemented, starting with the Pre-clerkship, followed by Junior Clerkship and Senior Clerkship thereafter. The Department also participates in Integrated Modules I to II which takes around 36 students every spring and fall semester.

POSTGRADUATE TEACHING
The morning meetings provide an hour of clinical teaching every day in the form of clinical meetings, case presentations, grand rounds, histopathology meetings and clinical radiological meetings. In addition to this, there are weekly presentations for interns, monthly journal clubs and mortality meetings.

The Department has around 10–14 interns at any one time. The Department is involved in teaching Oman Medical Specialty Board (OMSB) residents. At any time of the year, the Department will have 3–4 OMSB child health residents for training. Each year, three members of staff are invited to give presentations to Family Medicine & Public Health residents on common childhood diseases. One members of staff is invited yearly to deliver a clinical presentation to the Emergency Department residents.

Prof. Yasser Wali was the convener of the Clinical Ph.D. Programme, a new degree programme of the COMHS.

The Department conducts the examination leading to Membership of the Royal College of Paediatrics & Child Health (MRCPCH). In collaboration with the concerned international bodies, it is also the centre for the yearly Diploma of Child Health (DCH) examination.
Training Courses & CME Activities

The Department runs the following training courses: Neonatal Advance Resuscitation Course (three times a year); Paediatric Advance Life Support (twice a year), the MRCPCH Course (once a year) and contributes towards other courses offered by SQUH such as Basic Life Support (BLS) and Pain Management.

Clinical & Diagnostic Services

CLINICAL SERVICES

Under the headship of Dr. Reem Abdwani as Chairperson of the Outpatient Department (OPD) Committee, the Department, together with the SQUH Paediatric Outpatient Clinic and the Daycare Unit, succeeded in creating 15 OPD rooms and 11 beds in the new Paediatric Daycare Unit. The development of the OPD aims to follow-up children with chronic diseases and disabilities including patients with haematological malignancies. The Pediatric Haematology Clinic receives over 1,500 children and families for routine clinic visits annually, in addition to treatments such as regular blood transfusions, chemotherapy and invasive procedures such as bone marrow aspiration. Currently, we have expanded and all the paediatric subspecialties have their own days and allocated rooms for clinical services (see table below).

Table 1: Paediatric Outpatient Department

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td>Haematology</td>
<td>Cardiology</td>
<td>Nephrology</td>
<td>Neurology</td>
<td>Neonatal</td>
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<tr>
<td>Paediatric Surgery</td>
<td>Immunology</td>
<td>General Paediatrics</td>
<td>Pulmonology</td>
<td>Haematology</td>
</tr>
<tr>
<td>Nephrology</td>
<td>Endocrinology</td>
<td>Rheumatology</td>
<td>Endocrinology</td>
<td></td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>Hepatology (1st and 3rd week)</td>
<td>Neonatal</td>
<td>General Paediatrics</td>
<td>Cardiology</td>
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<tr>
<td>Genetics (3rd week)</td>
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<td>Surgery</td>
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Table 2: Paediatric inpatients

<table>
<thead>
<tr>
<th>Year</th>
<th>Admissions</th>
<th>% Average bed occupancy</th>
<th>Average length of stay in days</th>
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<tbody>
<tr>
<td>2013</td>
<td>4,430</td>
<td>72</td>
<td>3.9</td>
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</table>
Table 3: *Paediatric Daycare Unit*

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<thead>
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<th>Year</th>
<th>Admissions</th>
<th>Discharges</th>
<th>Average duration of stay in hours</th>
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<tr>
<td>2013</td>
<td>5,003</td>
<td>5,003</td>
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Table 4: *Paediatric outpatients*

<table>
<thead>
<tr>
<th>Year</th>
<th>Booked</th>
<th>Total seen</th>
<th>Admitted</th>
<th>Discharged</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>13,593</td>
<td>11,671</td>
<td>275</td>
<td>1,258</td>
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</table>

Table 5: *Neonatal Intensive Care Unit*

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<th>Year</th>
<th>Admissions</th>
<th>% Average bed occupancy</th>
<th>Average length of stay in days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>493</td>
<td>93</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 6: *Postnatal Ward*

<table>
<thead>
<tr>
<th>Year</th>
<th>Admissions</th>
<th>% Average bed occupancy</th>
<th>Average length of stay in days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>3,309</td>
<td>85</td>
<td>2</td>
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</table>

Table 7: *Paediatric Intensive Care Unit*

<table>
<thead>
<tr>
<th>Year</th>
<th>Admissions</th>
<th>% Average bed occupancy</th>
<th>Average length of stay in days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>241</td>
<td>82</td>
<td>7.2</td>
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</table>

Table 8: *Child Health Developmental & Autism Clinic*

<table>
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<tr>
<th>Year</th>
<th>Booked</th>
<th>Total seen</th>
<th>Admitted</th>
<th>Discharged</th>
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<tr>
<td>2013</td>
<td>463</td>
<td>721</td>
<td>1</td>
<td>0</td>
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</table>

Table 9: *Genetic services*

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<tr>
<th>Year</th>
<th>Services</th>
<th>Booked</th>
<th>Total seen</th>
<th>Admitted</th>
<th>Discharged</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>Clinical Biochemical Genetics</td>
<td>828</td>
<td>1,508</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Clinical Genetics</td>
<td>464</td>
<td>662</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Cancer Genetics</td>
<td>59</td>
<td>48</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
SERVICES TO EMERGENCY MEDICINE

An average of 350 children are seen every month in the Emergency Department and half of them are provided with a paediatric consultation by the on-call team.

The following specialised procedures are offered by the Department:

- Neurology: electroencephalogram (EEG), electromyography, nerve conduction velocity, brainstem auditory evoked response, somatosensory evoked potential, visual evoked potential and 24-hour video EEG
- Gastroenterology: endoscopy and colonoscopy
- Pulmonology: bronchoscopy and sleep studies
- Immunology: skin test
- Nephrology: peritoneal dialysis
- Haematology: exchange transfusions, plasmapheresis and portacath access.

Research

RESEARCH PROJECTS

Clinical and genetic characteristics of HBS in Oman: A severe unrevealed form of sickle cell disease

Code: RC/MED/CHLD/13/01  Date: 2013  Value: OR 35,700  Funder: The Research Council, Oman
Investigator: Prof. Yasser Wali, Dept. Child Health, SQU.

Towards understanding the genetics of familial Bronchiectasis

Code: IG/MED/CHLD/12/01  Dates: 2012–2013  Value: OR 12,541  Funder: SQU
Investigators: Dr. Hussein Al-Kindy, Dept. Child Health, SQU; Dr. Allal Ouhtit, Dept. Genetics, SQU; Prof. Omar Al-Rawas, Dept. Medicine, SQU; Dr. Qasem Al-Salmi, Dept. Pediatric Pulmonolgy, Royal Hospital, Oman; Dr. Erik-Jan Kamsteeg, Dept. Human Genetics, University Medical Centre St Radboud, Netherlands.

Enuresis in children: Biochemical and psychosocial factors

Code: IG/MED/CHLD/12/03  Dates: 2012–2013  Value: OR 5,000  Funder: SQU
Investigators: Dr. Muna Al-Saadoon, Dr. Ibtisam Elnour, Dept. Child Health, SQU; Ms Sana Hasari, Dept. Biochemistry, SQU; Ms Basma Al-Said, Dept. Behavioural Medicine, SQU; Ms Salima Al-Badri, BMS student, SQU; Ms Buthaina Al-Dhali, BMS student, SQU.

Genetics of systemic lupus erythematosus

Investigators: Dr Reem Al Abdawani, Dr. Fathiya Al-Murshidi, Dept. Child Health, SQU.
Genetic causes of primary immunodeficiency disorders in Omani patients

Code: IG/MED/CHLD/13/01  Value: OR 14,500  Funder: SQU

Investigators: Dr. Salem Al-Tamemi, Dept. Child Health, SQU; Dr. David Dennison, Dept. Haematology, SQU; Dr Mostafa Wali, Dept. Food Sciences & Nutrition, College of Agricultural, SQU; Mr. Isehaq Al-Husseini, Dept. Physiology, SQU.

Assessment of systolic and diastolic in children with propionic academia using conventional and newer echocardiographic techniques


Investigator: Dr. Khalfan Al-Senaidi, Dept. Child Health, SQU.

Cardiac assessment of children with osteogenesis imperfect using conventional, tissue Doppler, strain and strain rate echocardiographic techniques

Code: MREC #672  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Khalfan Al-Senaidi, Dept. Child Health, SQU.

Rigid spine muscular dystrophy and rigid spine syndrome: Report of seven children

Code: MREC #675  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Roshan Koul, Dept. Child Health, SQU.

Assessment of systolic, diastolic function and development of pulmonary hypertension in children with beta-thalassemia intermedia using conventional and tissue Doppler echocardiography


Investigator: Prof. Yasser Wali, Dept. Child Health, SQU.

Assessment of systolic, diastolic function and development for pulmonary hypertension in children with B-thalassemia and sickle cell disease (SCD) using conventional and tissue Doppler echocardiography

Code: MREC #689  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Prof. Yasser Wali, Dept. Child Health, SQU.

General quality of life in children and adolescents with type 1 diabetes mellitus in SQUH


Investigator: Dr. Saif Al-Yaarubi, Dept. Child Health, SQU.
Characteristics of children with type 1 diabetes mellitus: Sultan Qaboos University Hospital experience
Code: MREC #693  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Saif Al-Yaarubi, Dept. Child Health, SQU.

Epidemiological trends of retinopathy of prematurity in neonates with gestational age 32 weeks in a single tertiary center in Oman
Code: MREC #697  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Zenaida S. Reyes, Dept. Child Health, SQU.

Evolution of epileptic encephalopathy in an infant with non-accidental head injury
Code: MREC #724  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Roshan Koul, Dept. Child Health, SQU.

Time-based emergency department performance measures, involving children in a university hospital
Code: MREC #746  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Alexander P. C., Dept. Child Health, SQU.

Genetic studies of intellectual developmental disabilites (IDD) in affected Omani families
Code: MREC #751  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Watfa Al-Mamari, Dept. Child Health, SQU.

Evaluation of the clinical features of children with an autism spectrum disorder at the first developmental paediatrics clinic in Oman
Code: MREC #752  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Watfa Al-Mamari, Dept. Child Health, SQU.

Phenotypic and genotypic characterization of childhood hereditary spastic paraplegia in Oman
Code: MREC #753  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Amna Al-Futaisi, Dept. Child Health, SQU.

Celiac disease prevalence in Omanis with type 1 diabetes mellitus
Code: MREC #754  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Siham Al-Sinani, Dept. Child Health, SQU.
Descriptive study of sickle cell disease risk factors and magnitude in the Gulf Region based on TCD values
Investigator: Prof. Yasser Wal, Dept. Child Health, SQU.

Impact of RSV prophylaxis on respiratory illness and hospitalization of preterm neonates in SQUH
Code: MREC #761  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Asad Ur Rahman, Dept. Child Health, SQU.

Discharge against medical advice (DAMA) among Omani children attending tertiary hospital: Reasons and outcome
Code: MREC #763  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Muna Al-Saadoon, Dept. Child Health, SQU.

KAAPA: Key aspects of medical practice in patients with haemophilia A
Investigator: Prof. Yasser Wal, Dept. Child Health, SQU.

An open-label study to evaluate prophylaxis treatment, and to characterize the efficacy, safety, and pharmacokinetics of b-domain deleted recombinant factor VIII albumin free (morococog alfa [AF-CC]) in children with hemophilia A
Code: MREC #767  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Prof. Yasser Wal, Dept. Child Health, SQU.

Long-term glycemic control between insulin glargine and NPH in children and adolescents with type 1 diabetes: Single centre experience
Code: MREC #769  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Saif Al-Yaarubi, Dept. Child Health, SQU.

Clinical presentation, cerebrospinal fluid analysis and pattern of antibiotic sensitivity among children with bacterial meningitis
Code: MREC #777  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Ahmed B. Idris, Dept. Child Health, SQU.
Assessment process in COMHS: Students’ perception

Code: MREC #784  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Muna Al-Saadoon, Dept. Child Health, SQU.

The impact of bronchial asthma on school attendance among Omani children aged 6–16 years in Muscat Governorate in 2013

Code: MREC #788  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Muna Al-Saadoon, Dept. Child Health, SQU.

Rates and correlates of bullying and aggressive behavior among Omani youth in Muscat Governorate, Sultanate of Oman

Code: MREC #796  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Muna Al-Saadoon, Dept. Child Health, SQU.

Evaluation of sampling time and indications for therapeutic drug monitoring requests at Sultan Qaboos University Hospital

Code: MREC #798  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Sharef Waadallah Sharef, Dept. Child Health, SQU.

Evaluation of purified poloxamer 188 in children in crisis (EPIC): A phase 3 randomized, double-blind, placebo-controlled, multicenter clinical trial of MST-188 (purified poloxamer 188) injection in children with sickle cell disease experiencing vaso-occlusive crisis

Code: MREC #813  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Prof. Yasser Wali, Dept. Child Health, SQU.

Wrist drop in muscular atrophy (Werdnig-Hoffman disease)

Code: MREC #817  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Roshan Koul, Dept. Child Health, SQU.

The incidence, risk factors, clinical course and outcomes of hypoxic ischemic encephalopathy in Neonatal Intensive care Unit (NICU) in SQUH

Code: MREC #819  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Asad Ur Rahman, Dept. Child Health, SQU.
The pattern and causes of neonatal mortality at a tertiary hospital in Oman

Code: MREC #824 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Mohammed Abdellatif, Dept. Child Health, SQU.

Clinical and laboratory correlations of anti-streptolysin O antibodies: Rheumatological prospect

Code: MREC #835 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Reem Abdwani, Dept. Child Health, SQU.

A prospective, single arm study to assess the efficacy and safety of deferasirox 20 mg/kg BID in transfusion dependent beta<35 mg/kg OD


Investigator: Prof. Yasser Wali, Dept. Child Health, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International

National

Poster Presentations

International


Seminar Presentations

International

National
Ever since its establishment in 1986, the Department has been the leader in emergency medicine in Oman. Our high standards of care have inspired other hospitals in the country. The Department is one of the major tertiary care facilities in the governorate of Muscat having its own helipad used by different national agencies in the event of a disaster or other emergency situations. We treat approximately 65,000 patients annually and receive patients from every corner of the country. Acting as the first point of entry for the majority of the patients coming to Sultan Qaboos University Hospital (SQUH) and serving as the main hub for patients being admitted into various SQUH departments, it is no wonder that the Department is the busiest place in the whole hospital. Triage is a key focus and concern of the Department and continuous other improvements are made to keep pace with the ever increasing number of patients.

Most of the trauma patients are brought to the Department by the Oman Emergency Medical Services (EMS). Based on the Anglo-American system of EMS, the main catchment area of our hospital is the densely populated Seeb wilayat (district). Upon arrival in the hospital, EMS staff hand over patients to the trauma team which is geared up for major trauma cases. The trauma team comprises emergency physicians, surgeons, anaesthetists and orthopaedic surgeons. After initial management all
patients requiring surgery are transferred immediately to the operating theatre. The Department has very good patient survival rates.

At present, the Department has 29 beds with a fully equipped triage desk with one doctor and two nurses to ensure prompt medical attention for all patients. The Department has the most modern equipment, including different types of ventilators, conventional and non-invasive, sonographic machines and an arterial blood gas machine.

In order to fulfill the vision of the Department to be a national model for the development of emergency medicine of international standing, various training and learning activities are organised for the departmental healthcare personnel. In turn, a wide range of healthcare professionals receive training in the Department, including undergraduate and postgraduate medical and nursing students from Sultan Qaboos University’s (SQU) Colleges of Medicine & Health Sciences and Nursing; other SQUH staff; students of the Oman Medical Specialty Board (OMSB); medical staff of the Royal Court and Royal Affairs, the Ministry of Health, the Health Institute and the Royal Oman Police, and also interns of the Oman Medical College in Sohar.

The Department actively participates in different national and international research projects. The Department also regularly participates in various disaster drills organised by the concerned government agencies. These drills aim to familiarise participants with the procedures needed for real-time disasters and to eradicate any weaknesses in the national disaster plan.

Staff

Acting Head of Department
Khalfan Al-Amrani, Consultant

Medical Staff
Nabil Al-Zadjali, Senior Consultant
Abdullah Al-Reesi, Senior Consultant
Marwan Al-Raisi, Consultant (Paediatric)
Hilal Al-Barwani, Consultant (Paediatric)
Niranjan Lal, Registrar (Paediatric)
Yousef Al-Weshahi, Senior Registrar
Remanand Sudhir, Senior Registrar
Asma Al-Balushi, Senior Registrar
Awatif Al-Alawi, Senior Registrar
Amal Al-Shibli, Senior Registrar
Sabah Awad, Senior Registrar
Ashraf Ali, Registrar
Mohammed F. Khilji, Registrar
Mohammed O. Mubashir, Registrar
Rafael Hashmi, Registrar
Umar Shahzad, Registrar
Qazi Ziaullah, Registrar
Vinod Abraham, Senior House Officer
Mohammed Awaiz, Senior House Officer
Nowfal Sabri, Senior House Officer
Mohammad S. Khan, Senior House Officer
Bader Al-Amri, Senior House Officer
Quratulain, Senior House Officer
Mohammed R. Kabir, Senior House Officer
Aisha Al-Khamisi, Senior House Officer (in training abroad)
Suad Al-Abri, Senior Registrar (in training abroad)
Amal Al-Mandhari, Senior House Officer (in training abroad)
Aisha Al-Buraiki, Senior House Officer (OMSB Resident)
Nursing Staff
Chief Nurse Level 1 (2)
Chief Nurse Level 2 (1)
Chief Nurse Level 3 (3)
Staff Nurse Level 1 (10)
Staff Nurse Level 2 (53)

Support Staff
Ayida Al-Hadhrami, Coordinator
Abdullah Al-Rawahi, Coordinator (ED clinical area)
Sabeel Al-Zadjali, Ambulance Attendant
Florenda Sicat, Emergency Medical Technician (Ambulance)
Ahmad Al-Shaqsi, Emergency Medical Technician
Fahad Al-Abri, Emergency Medical Technician
Medical Record Clerks (2 per shift)
Medical Orderlies (12)

Highlights of the Year 2013

TRAUMA COURSE AND CONFERENCE WORKSHOPS
In 2013, the Department again organised a three-day Trauma Course for nurses with the goal of enhancing staff knowledge and refining trauma management skills, thus improving patient outcomes. Department doctors participated in teaching courses during the 2013 Gulf Cooperation Council Conference for Medical Students.

EMERGENCY MEDICINE INTERNATIONAL DAY
The Department celebrated the Emergency Medicine International day in October 2013. A stand was prepared to deliver a case presentation to visitors on non-invasive ventilation.

INTERNATIONAL VISITORS
During the year, the Department received various visiting consultants from different parts of the world and interacted with them to gain from their experiences. Many of them delivered lectures to our staff on state-of-the-art developments in emergency medicine.

EXPANSION OF EMERGENCY DEPARTMENT FACILITIES
The SQUH management approved the Department’s expansion plan. The official formalities were started prior to the commencement of the construction work.
PROFESSIONAL EXAMINATIONS
Many of our doctors presented themselves for international professional examinations. In 2013, one of our doctors gained Membership of the Royal Colleges of Physicians (MRCP) UK. Different parts of the Membership examinations of the College of Emergency Medicine (MCEM), UK, were passed by many of our staff. Most of the doctors updated their ACLS (Advanced Cardiac Life Support), PALS (Paediatric Life Support) and Advanced Trauma Life Support (ATLS) certificates.

PROMOTIONS AND FAREWELLS
Some of our doctors and nurses were promoted to a higher grade in recognition of their performance. In 2013, we also said goodbye to Dr. Daniel O. Ogunjumo, Senior Consultant, Dr. Asim Bilal, Senior House Officer and Ms. Mercy Neskumar, departmental Coordinator.

Teaching Programmes

UNDERGRADUATE CLINICAL PROGRAMME

Emergency Medicine for 6th year Medical Students: Old curriculum
The Department actively participated in the training and teaching of 6th year medical students in the old curriculum. We received 8 batches of students every year on a monthly rotation from August to May. Each batch was divided into 4 groups. Teaching sessions were held by consultants and included lectures along with bedside teaching. The teaching topics included basic life support, wound care, recognition and treatment of dynamic arrhythmias, and the use of defibrillators. In addition to these sessions, problem-based tutorials were also held regularly by consultants on important clinical emergencies like chest pain, shortness of breath, polytrauma, poisoning, etc. The student’s performance was assessed at the end of the rotation by a one-hour multiple-choice question examination based on the contents of the core curriculum. The Department received the last group of students in the old curriculum in April 2013.

New Curriculum
The Department started to prepare the ground for receiving the new curriculum students, taking into consideration the goal of the new curriculum to produce undifferentiated physicians ready to go and work in this field. To this end, the Department held several meetings both within the Department and with members of the College of Medicine & Health Sciences’ (COMHS) curriculum committee.
POSTGRADUATE PROGRAMME

Teaching and Training of Interns
Interns rotate through the Department on a one-month elective rotation during their General Surgery posting. Interns are given handouts and a one-day tour of the Department at the start of their rotation. During their rotation, the interns are exposed to real emergency cases like chest pain, polytrauma, poisoning, etc. They are taught procedures such as different types of suturing, foreign body removal, arterial blood gas testing, and the basic know-how of intubations and central lines placement, etc. Bedside teaching and regular CMEs are also provided. The shift supervisor assesses all interns at the end of every call and the final assessment is made on the basis of the performance in all the shifts. Apart from assessing knowledge, the following are also taken into account: punctuality, overall behaviour as part of a team, and performance under pressure during busy shifts.

Teaching and Training of Residents
The residents participating in the OMSB (Oman Medical Specialty Board) programmes of Emergency Medicine, Family & Community Medicine and Surgery rotate through the Department at various stages of their training. They are exposed to real emergencies and given a full chance to handle patients independently as an active member of the team under the supervision of the shift supervisor. They are also given the chance to practise and improve recently learned skills such as suturing and other simple procedures; they are also taught new skills like intubations, central line placement, basic bedside ultrasound, etc. Senior residents handle more critical patients in the bay area under supervision of the doctor in charge of the shift. Apart from the clinical activities, academic activities for a minimum 4 hours per week are mandatory. These activities include case or topic presentations, Journal Clubs, workshops, etc.

CLINICAL ELECTIVES & ATTACHMENTS
The Department welcomes international medical students doing electives. This year we received several students from different countries for electives. The Department also regularly receives foreign medical graduates for clinical attachments. This year several graduates from different countries joined us for their clinical attachment.

Training Courses & CME Activities
In 2013, the Department again organised a three-day Trauma Course for nurses. This course is now gaining in popularity and was attended by more than 50 participants from different hospitals including Khoula Hospital and the Armed Forces Hospitals.
The Department is an integral part of teaching staff of the SQUH’s Directorate of Training & Continuing Professional Development and is involved in carrying out the BLS (Basic Life Support), ACLS (Advanced Cardiac Life Support) and PALS (Pediatric Life Support) courses. All these courses are now American Hospital Association (AHA) certified.

The Department’s in-house CME activities include the long-held tradition of its popular fortnightly CME activity. Activities include interesting presentations, a Journal Club, quizzes etc. Sometimes the hands-on practice of different skills is also provided during CME activity in order to refresh the skills of the staff.

Clinical & Diagnostic Services
In 2013, the Department received 62,525 patients compared to 66,777 in 2012. The details of these patients are shown in the table below.

Table 1: Emergency Department statistics in 2013

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</table>

Total patients in 2013 = 62,525 (total patients in 2012 = 66,777)

B = blue category patients (unlikely to survive or those who need extensive care within minutes); R = red category patients (critical, may survive if simple lifesaving measures are applied); Y = yellow category patients (likely to survive if simple care is given within hours); G = green category patients (minor trauma, care may be delayed while other patients receive care); W = white category patient; F/U = follow-up patients; SSU = short stay unit; DEF = deferred cases; LWBS = left without being seen; ADM = admission cases; TRANS = transferred to other wards/hospitals; DOA = dead on arrival; DAA = died after arrival; SCD = sickle cell disease cases; RTA = road traffic accident cases; ED = Emergency Department.

**Figure 1:** Adult versus paediatric patients.
Research

Research Projects
Different consultants supervised the research projects of the OMSB residents.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International
Established in 1986, the Department of Family Medicine & Public Health is one of the major clinical departments in the College of Medicine & Health Sciences (COMHS) and Sultan Qaboos University Hospital (SQUH). The clinical services are provided through the University Health Centre and the Student Clinic. The Department is extensively involved in teaching medical students at different levels. The postgraduate programmes include the Masters in Epidemiology & Medical Statistics, the Ph.D. in Epidemiology & Public Health and the Family Medicine Residency Programme. The Department conducts the Membership of the Royal College of General Practitioners - International (MRCGP - INT) examination. The Department is also actively involved in research both independently and also in collaboration with other departments and external bodies.
Staff

Head of Department
Mohammed Al-Shafaee, Associate Professor

Faculty
Abdulaziz Al-Mahrezi, Senior Consultant, Deputy Head (Clinical Services)
Yahya Al-Farsi, Assistant Professor, Assistant Dean (Training & Community Service)
Shyam S. Ganguly, Associate Professor
Randa Youssef, Associate Professor
Syed Rizvi, Assistant Professor
Kamlesh Bhargava, Senior Consultant
Thord Theodorsson, Senior Consultant
Ahmed Al-Mandhari, Senior Consultant
Mohammed Al-Azri, Senior Consultant
Zakiya Al-Busaidi, Senior Consultant
Ahmed Al-Waily, Senior Consultant/Dermatologist
Hamdan Al-Habsi, Consultant
Mustafa Al Hinai, Consultant
Kawther El-Shafie, Consultant
Ana Maria Anido, Senior Registrar/Dermatologist
Rahma Al-Kindi, Consultant
Laila A. Ramadhan, Registrar
Aisha Al-Hinai, Registrar
Vrunda Pimpalkhute, Registrar
Nafisa Samir, Registrar
Imran Saad, Registrar
Teodorico Diputado, Registrar
Hanaa Al-Sumri, Senior House Officer
Wahida Al-Maskeri, Senior Chief Dietician

Support Staff
Perpetua Gabor, Coordinator
Zulfa Al-Tobi, Coordinator
Bahiya Al-Siyabi, Coordinator

Highlights of the Year 2013
The Department offered the 12th MRCGP-INT examination in September 2013. The examination was taken by 8 doctors. The Royal College of General Practitioners has appreciated and recognised the progress made in the development of this examination.

Teaching Programmes

UNDERGRADUATE PROGRAMMES
The Department offered courses in: Epidemiology & Medical Statistics; Data Analysis using SPSS (university elective); Epidemiology & Medical Statistics for B.Sc. Medical Laboratory Sciences; Biostatistics for the College of Nursing; Principles of Epidemiology; Special Epidemiology & Health Management for health statistics students from the College of Science; Nutrition & Health Education for the College of Agriculture; the Hospital & Community Attachment course for M.D. students in the new curriculum; the Research Methodology course and the Student Project for M.D. students in Phase II of the curriculum.

NEW CURRICULUM
The Department is involved in Phase II and Phase III of the new curriculum. In addition, the Department is involved in teaching of students from the intercalated phase.

PRE-CLERKSHIP PROGRAMME
The Department participated in the Pre-clerkship programme for the second time in 2013 by conducting 9 general assessment weeks and also participated in the final examination. The objectives of
the General Assessment week had been updated. The clinical teaching is done in staff and student clinics. About 120 students, 15 students per group, get the chance to take a focused history and conduct a focused physical examination on real or simulated patients. The aim of this course is to prepare the students for their clinical years.

JUNIOR CLERKSHIP PROGRAMME
About 122 students, in groups of 20, have a 5-week clinical rotation in the SQU Health Centre and in 5 of the accredited Ministry of Health (MOH) Health Centres. The aim of the rotation is for the students to practise focused history-taking and physical examinations, as well as making differential diagnoses and defining management plans. The emphasis is on the acquisition of knowledge that is required to manage a wide variety of health conditions (physical, social and psychological) in the context of family, culture, work and community. The rotation explores further the principles of patient-centred care; the holistic approach; taking account of the patient’s ideas, concerns and expectations; non-pharmacological and pharmacological treatments; recognition of risk factors; continuity of care; community medicine; health promotion, and preventive measures. The students also observe/perform common procedures typically conducted in family practice settings and participate in the different health services provided at the primary care level including: vaccination; antenatal care; the integrated management of childhood illness; school and community health, etc.

SENIOR CLERKSHIP
The Senior Clerkship students have an 8-week rotation in family medicine. During the rotation, they attend family medicine clinics for three weeks. The Senior Clerkship in Family Medicine explores further the principles and practice of patient-centred care which was introduced in the Junior Clerkship. The Senior Clerkship course takes place in an out-of-hospital setting either in the FAMCO clinic or in one of the nearby MOH clinics. The student learns how to deal with undifferentiated health problems presented to the family doctor as well as how to manage chronic illness among the members of the community. During the rotation, students have various assessments in the form of a mini-clinical evaluation exercise, a case-based discussion and case-based learning; each form of assessment is followed by feedback. In addition students, are encouraged to work on their portfolio which includes case summaries and procedures performed or observed during the rotation.

POSTGRADUATE PROGRAMME
Family Medicine Residency training programme
The Department, along with the Oman Medical Speciality Board (OMSB), is actively involved in the teaching, training and examination of the family medicine residents. There were 77 Residents in the programme in 2013 at various levels of training. The exit examination, MRCGP-INT, is accredited by the Royal College of General Practitioners, UK.
M.S.C. PROGRAMME
The following postgraduate courses were conducted by the Epidemiology & Medical Statistics Unit for
the Master’s Programme: Statistics & Computers; Advanced Principles of Epidemiology; Advanced Sta-
tistical Methods; Categorical Data Analysis; Applied Epidemiology; Statistical Methods in Quality Control. A
Research Methodology course was also offered as well as supervision of master’s thesis research projects.
During 2012–2013, the Department had 5 students in the Master’s degree programme.

PH.D. PROGRAMME
During 2012–2013, the Department had 3 candidates who joined the Ph.D. programme in Epidemiology &
Public Health.

Training Courses & CME Activities
In 2013, the Department continued to arranged CME activities through journal clubs and seminars. These
activities are open to doctors, nurses and paramedics from the Department, the MOH and also to other SQUH
personnel. The CME sessions are usually conducted by speakers from the Department or external speakers
from other departments. The main focus is on improving the quality of the service by updating medical staff
in clinical knowledge and recent guidelines and protocols. Other topics were quality sessions and audit proj-
ects, as well as updates of SQUH mandatory courses (Basic Lifesaving Skills and Fire Safety).

Clinical & Diagnostic Services
The SQU Health Centre is a pioneer primary care institution in Oman. It is the first health centre in the coun-
try to have received international accreditation as a “model health centre” by the Arab Board of Medical Spe-
cializations and by the Royal College of General Practitioners (RCGP), UK, for clinical services and the teaching
of family medicine. Our Health Centre is the leading star in primary healthcare (PHC) in Oman as regards
PHC ideology, quality, comprehensiveness of care and prevention.

Patient services are provided at the SQU Health Centre and the Student Clinic. A total of 39,904 patients were
seen at the Health Centre in 2013. The Department has separate diabetes, antenatal and postnatal clinics be-
sides the birth spacing and MOH infertility programmes and the extended programme of immunisation for
mother and child health. The Dermatology Clinic gets referrals from all departments in SQUH and different
parts of the country for various procedures including laser treatment. The Student Clinic serves the Universi-
ty students for all of their primary health needs. It offers the following clinics: General Appointments; Walk-
in; Diabetes; Antenatal & Postnatal; Immunisation/well baby; Birth spacing; Dermatology, and Counselling.
Table 1: *Clinical workload in 2013 for the Family Medicine & Community Health Centre*

<table>
<thead>
<tr>
<th>Type of patient/clinic</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with appointments</td>
<td>18,393</td>
<td>15,711</td>
<td>15,119</td>
</tr>
<tr>
<td>Walk-in patients</td>
<td>16,552</td>
<td>24,998</td>
<td>16,856</td>
</tr>
<tr>
<td>Vaccinations</td>
<td>8,744</td>
<td>10,739</td>
<td>10,193</td>
</tr>
<tr>
<td>Antenatal/Prenatal/Birth Spacing Clinics</td>
<td>1,336</td>
<td>1,599</td>
<td>1,305</td>
</tr>
<tr>
<td>Dermatology</td>
<td>5,414</td>
<td>4,673</td>
<td>3,251</td>
</tr>
<tr>
<td>Diabetes Clinic</td>
<td>301</td>
<td>322</td>
<td>318</td>
</tr>
<tr>
<td>Respiratory therapist</td>
<td>129</td>
<td>136</td>
<td>119</td>
</tr>
<tr>
<td>Dietician</td>
<td>233</td>
<td>341</td>
<td>430</td>
</tr>
<tr>
<td>Treatment room services</td>
<td>1,885</td>
<td>1953</td>
<td>2,022</td>
</tr>
<tr>
<td>Total patients seen</td>
<td>42,077</td>
<td>40,709</td>
<td>39,904</td>
</tr>
</tbody>
</table>

Table 2: *Student Clinic*

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients seen</td>
<td>14,885</td>
<td>15,199</td>
<td>14,326</td>
</tr>
</tbody>
</table>

Research

**RESEARCH PROJECTS**

An assessment of the application of LEAN thinking in the Omani health care sector

Code: SR/CCE/OMBS/12/01  Dates: 2012–2015  Value: OR 58,000  Funder: His Majesty’s Strategic Research Fund

Investigators: Dr. S. Al-Balushi, Dr. A. Al-Hajri, Dept. Operations Management & Business Statistics, SQU; Dr. P. Sohal, Dept. Management, University of Monash, Australia; Dr. A. Kumar, University of Melbourne, Australia; Dr. Yahya Al-Farsi, Dept. Family Medicine & Public Health, SQU.
Evaluation of risk factors for stroke in an Omani community


Investigators: Dr. Shyam Ganguly, Dr. Mohammed Al-Shafae, Dept. Family Medicine & Public Health, SQU; Dr. Arunodaya R. Gujjar, Dr. Abdullah R. Al-Asmi, Dept. Medicine, SQU; Dr. Santosh Kumar B., Dept. Neurology, Royal Hospital.

Transmission dynamics and spread of drug resistance of Mycobacterium tuberculosis in Oman


Knowledge and health beliefs toward sickle cell disease among Sultan Qaboos University students

Code: MREC #682 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Mohammed Al-Azri, Dept. Family Medicine & Public Health, SQU.

Comprehensive health assessment of elderly people in Al Dakhliyah Governorate

Code: MREC #694 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Randa Youssef, Dept. Family Medicine & Public Health, SQU.

Barriers in initiating insulin treatment in type 2 DM among physicians in wilayat Bowsher


Investigator: Dr. Thord Theodorsson, Dept. Family Medicine & Public Health, SQU.

Evaluating trauma care capabilities of primary care level in Oman

Code: MREC #731 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Kamlesh Bhargava, Dept. Family Medicine & Public Health, SQU.

A comprehensive investigation of the risky behavior of young drivers (17–25) in Oman

Code: MREC #733 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Abdullah Al-Maniri, Dept. Family Medicine & Public Health, SQU.
Identification of a mutation (A268G) in the THRB gene in a patient with thyroid hormone resistance in Oman
Code: MREC #734 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Kawther El-Shafie, Dept. Family Medicine & Public Health, SQU.

Quality of life among parents of children with autism spectrum disorder in Oman
Code: MREC #785 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Yahya Al-Farsi, Dept. Family Medicine & Public Health, SQU.

Public awareness of cancer among Omani population
Code: MREC #793 Dates: 2013 Value: OR 800 Funder: SQU
Investigator: Dr. Mohammed Al-Azri, Dept. Family Medicine & Public Health, SQU.

Point of care devices (P.O.C) awareness, usage and training: Targeting residents and trainers in Oman
Code: MREC #816 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Mohammed Al-Shafaee, Dept. Family Medicine & Public Health, SQU.

Dysbiosis of gut microbiota (DOMA) and risk factors of polycystic ovarian syndrome in the Sultanate of Oman
Investigator: Dr. Yahya Al-Farsi, Dept. Family Medicine & Public Health, SQU.

The prevalence of bullying among school students and its effect on mental health
Code: MREC #842 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Mohammed Al-Shafaee, Dept. Family Medicine & Public Health, SQU.

RESEARCH PUBLICATIONS & BOOKS

Research Publications


CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International


National

Poster Presentations

International


National


Seminar Presentations

National

1. Al-Farsi YM. Use of Lean Thinking in critical care. Mysteries in Critical Care Symposium, Rustaq Hospital, Oman, 17 Dec 2013.


3. Al-Asfoor DH, Al-Farsi YM. Health financing in Oman. First Round Table Discussion, Organized by Oman Public Health Society, Muscat, Oman, 8 Apr 2013.


THESIS SUPERVISION

Student Name: Hasina A. S. Al-Harthi

Qualification: M. Sc. Biomedical Sciences, Major in Epidemiology & Medical Statistics

Title: Risk factors of stroke among Omani adult population: A hospital based case-control study

Supervisor: Dr. Shyam S. Ganguly

Date of completion: October 2013
Student Name: Najma Al-Kindi
Qualification: Ph.D.
Title: The impact of postnatal nutrition and oxidative stress in the etiology of autism spectrum in Oman
Supervisor: Dr. Mohammed Al-Shafaee
Date of completion: On-going

Student Name: Omar Al-Farsi
Qualification: M. Sc.
Title: Effect of antenatal and perinatal adverse events on occurrence of ASD in Oman
Supervisor: Dr. Yahya Al-Farsi
Date of completion: On-going

Student Name: Hamad Al Reesi
Qualification: M. Sc.
Title: A comprehensive investigation of risky driving behaviors among young drivers in Oman
Supervisor: Dr. Abdulla Al-Maniri
Date of completion: On-going
Genetics

Genetics is a department with ample resources and potential, providing scientists and clinicians with unprecedented opportunities to make a difference to society. The mission of the Department is to provide state-of-the-art diagnostic services for patient care, education, research as well as raising public awareness in the field of genetics. While serving as a focal point for routine clinical services, the Department is committed to updating the on-going routine diagnostic tests in cytogenetics and immunogenetics and, in addition, to developing new molecular diagnostic tests for various genetic diseases, including cancer, cardiovascular and neurological diseases.

The Department has four specialised sections: Clinical Genetics, Cytogenetics, Molecular Genetics and Immunogenetics. The research in the Department is currently focused on inborn errors of metabolism, rare genetic diseases, cystic fibrosis and cancer.
Staff

**Acting Head of Department**
Khalid Al-Thihli, *Consultant*

**Faculty**
Allal Ouhtit, *Associate Professor*
A. M. Udayakumar, *Associate Professor*

**Clinical Genetics**
Adila Al-Kindy, *Senior Consultant*
Fathiya Al-Murshed, *Consultant*
Zandre Bruwer, *Genetic Counselor*
Maha Al-Awadi, *Registrar*
Sara S. Al-Alawi, *Social Worker*
Khalsa Al-Kharousi, *Biomedical Scientist*

**Molecular Genetics**
Patrick Scott, *In charge, Molecular Laboratory*
Mariam Al-Nabhani, *Biomedical Scientist*
Aisha Al-Naamani, *Biomedical Scientist*
Feisal Al-Mahriz, *Biomedical Scientist*
Samia Al-Rashdi, *Biomedical Scientist*
Farida Al-Mamaari, *Biomedical Scientist*
Lina Al-Mashhadani, *Biomedical Scientist*

**Cytogenetics**
Robert Sigmani, *Biomedical Scientist*
Shoma S. Raj, *Biomedical Scientist*
Sami Al-Kalbani, *Biomedical Scientist*
Balaji Krishnan, *Biomedical Scientist*
Sultan S. Al-Salhi, *Biomedical Scientist*

**Immunogenetics**
Hamad Al-Riyami, *Chief Biomedical Scientist, Superintendent*
Varghese CM, *Senior Biomedical Scientist*
Faiza Al-Yahyai, *Senior Biomedical Scientist (on study leave)*

Suriyan Mani, *Biomedical Scientist*
Iman H. Al-Hadhili, *Biomedical Scientist*

**Support staff**
Ghadeer Al-Zadjali, *Coordinator (College)*
Soad S. Al-Muqaimi, *Coordinator (Clinic)*

**Highlights of the Year 2013**
The Genetics Department continued to evolve rapidly in 2013 as is expected of a relatively young department in such a multidisciplinary field. The year 2013 saw the development of the Molecular Genetics and Genomic Laboratory which is expected to flourish in 2014. The Genetic & Developmental Medicine Clinic witnessed a significantly increased number of referrals and consultations. This highlights the national significance and public awareness of this clinic. The sustained and augmented research productivity in 2013 emphasises the role the Department plays as one of the leading research departments in the College of Medicine & Health Sciences (COMHS).

**Teaching Programmes**
The Department of Genetics participates in teaching and training clinicians and medical science students.

**UNDERGRADUATE PRECLINICAL PROGRAMME**
The Department is involved in a significant amount of teaching and training in the College of Medicine & Health Sciences. It coordinates the new Cell Biology course. It contributes to the Molecular Biology and the Principles of Genetics undergraduate pre-
clinical courses with lectures and tutorials on molecular genetics and cytogenetics. It also participates in the annual teaching rotations and training of doctors and students proceeding to the 2nd or 3rd year of their degree. This is achieved through laboratory-based workshops as follows: (1) a bi-annual workshop in standard molecular genetic laboratory techniques and (2) the rotation of students and doctors in the Cytogenetics, Immunogenetics, and Molecular Genetics diagnostic laboratories. This includes training and an observation course on genetic techniques organised in January and June each year.

UNDERGRADUATE CLINICAL PROGRAMME
The Department is involved in the following clinical teaching activities: (1) Clinical (bedside and outpatient) teaching for residents, senior house officers and registrars; (2) the Junior Clerkship Clinical Genetics and Counselling rotation, an intense course-format structured rotation that takes place every 6 weeks; (3) Two seminars on the approach to metabolic diseases for final year M.D. students; (4) A two-hour clinical lecture for nursing students from the Ministry of Health, and (5) a genetics lecture for 7th year medical Obstetrics & Gynecology rotation students; this is repeated every 6 weeks with 25–28 students in each batch.

The Department participates in the teaching of the Molecular Diagnosis and Biology of Disease courses in the Biomedical Sciences (BMS) bachelor’s degree programme. It also provides lectures on cancer genetics and genetics.

Finally, the Department contributes to the teaching in the Sultan Qaboos University (SQU) Colleges of Agriculture & Marine Sciences and Nursing with lectures on genetics and nutrigenomics.

POSTGRADUATE PROGRAMME
The Department has its own Ph.D. programme in Genetics and Genomics and currently has four Ph.D. students. The Department takes part in the Master’s programme in Biochemistry, the senior house officer in-house training, and the Oman Medical Specialty Board (OMSB) residents training programme in Haematology and Biochemistry with lectures on cytogenetics, molecular genetics and immunogenetics. The Department is actively involved in training residents on rotation in the field of medical genetics and biochemical genetics (inborn errors of metabolism). Clinicians from the Department of Genetics are OMSB trainers associated with the Paediatrics Residency Training Programme.

Training Courses & CME Activities
The Omani staff members of the Department are sent abroad for regular training in genetics (residency training, Ph.Ds. and short training courses in genetics). There are regular in-house training activities in genetics for the staff and for Omani graduates from SQU and abroad. Senior staff members are encouraged to participate in international meetings to ensure adequate CME credits are obtained for the maintenance of their certifications.
Clinical & Diagnostic Services

CLINICAL GENETICS
The main objectives of the Clinical Genetics section, in addition to its teaching and research activities, is to provide a standard-of-care service for patients and families with genetic disorders including diagnosis, genetic counselling, management and social support. In 2013, the Clinical Genetics team of four clinical geneticists saw a total of more than 1,400 patients/families for outpatient consultations; the number of inpatient consultations was of a similar order.

The Clinical Genetics team also contributed to the care of metabolic patients and in teaching M.D. and postgraduate students. Although no active grant proposals are linked to the Clinical Genetics section at present, the potential is being explored and self-funded clinical projects are presently underway. The clinical unit is actively involved in liaison with other clinical services in designing, arranging and facilitating clinical research that may have direct or indirect genetic implications. Clinical genetic services naturally imply dealing with rare disorders. These are typically associated with ongoing research questions that are being explored on a family or individual basis as indicated by the clinical needs. So far, there are several families that have been involved in clinical research or are currently considering such an involvement.

CYTOGENETICS LABORATORY

Table 1: 2013 statistics for conventional cytogenetics - Karyotyping

<table>
<thead>
<tr>
<th>Month</th>
<th>Haematological</th>
<th>Non-haematological</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bone marrow</td>
<td>Blood Blood Amniotic fluid FNA</td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>16      - 37 1 54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>17 1 44 1 64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>25 3 31 1 1   60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>23 - 21 - - 44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>24 - 30 - - 54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>22 2 14 - - 38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>24 1 28 1 - 54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>16 2 11 - - 29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>24 - 14 - - 38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>21 1 19 1 - 42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Types of patients karyotyped in 2013

<table>
<thead>
<tr>
<th>Referring Department</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haematology (adult)</td>
<td>212</td>
</tr>
<tr>
<td>Haematology (paediatrics)</td>
<td>49</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynaecology</td>
<td>129</td>
</tr>
<tr>
<td>Child Health</td>
<td>48</td>
</tr>
<tr>
<td>Neonatology</td>
<td>17</td>
</tr>
<tr>
<td>Genetics</td>
<td>67</td>
</tr>
<tr>
<td>Medicine</td>
<td>7</td>
</tr>
<tr>
<td>Paediatric Neurology</td>
<td>5</td>
</tr>
<tr>
<td>Paediatric Endocrinology</td>
<td>-</td>
</tr>
<tr>
<td>Urology</td>
<td>7</td>
</tr>
<tr>
<td>Family Medicine &amp; Public Health</td>
<td>1</td>
</tr>
<tr>
<td>Paediatric Intensive Care Unit</td>
<td>1</td>
</tr>
<tr>
<td>Neurology</td>
<td>1</td>
</tr>
<tr>
<td>Pediatric Surgery</td>
<td>1</td>
</tr>
<tr>
<td>Pathology</td>
<td>1</td>
</tr>
<tr>
<td>Neonatal Intensive Care Unit</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>549</td>
</tr>
</tbody>
</table>

FNA = fine needle aspiration cytology.
In 2013, a total of 7 patients underwent prenatal diagnosis by amniocyte cultures.

**MOLECULAR GENETICS AND GENOMICS LABORATORY**

This laboratory section is involved with the molecular study of disorders with a genetic basis. In 2013, the laboratory completed a major reorganisation of the available space to meet the particular workflow requirements in addition to the modernisation of essential equipment. This will allow the laboratory to satisfy the needs of clinicians and patients. The aim is for the laboratory to provide comprehensive and specialised molecular diagnostic services, including teaching and research. It is anticipated that by the end of 2014, a basic menu of specific clinical tests will be available in support of the Genetic and Developmental Clinic and other specialty clinics within SQUH and beyond. The number of specimens for nucleic acid extraction grew to 1,229 in 2013 compared to only 330 in 2011.

**Research**

**RESEARCH PROJECTS**

From gene expression analysis of Omani breast tumours to biomarkers/candidate gene discovery

*Code: SR/MED/GENT/10/01  Dates: 2010–2014  Value: OR 207,850  Funder: His Majesty’s Strategic Research Fund*

Investigators: Dr. Allal Ouhtit, Dr. Said Al-Yahyae, Dept. Genetics, SQU; Dr. Yahya Al-Tamimi, Dept. Biochemistry, SQU; Dr. Mansour Al-Moundhri, Dept. Medicine, SQU; Prof. Madhwa H. G. Raj, LSU Health Sciences Center, New Orleans, USA; Prof. Herlyn Meenhard, Dept. Dermatology, Wistar Institute, Pennsylvania, USA.
From chemoprevention to biomarkers and target development for breast cancer


Investigators: Dr. Allal Ouhtit, Dr. Hamad Al-Riyami, Dept. Genetics, SQU.

Cytogenetic and molecular screening for subtelomeric chromosomal imbalance in Omani patients with idiopathic mental retardation


Investigators: Dr. A. M. Udayakumar, Ms. Aisha Al-Namani, Ms. Shoma Raj, Dept. Genetics, SQU; Prof. Samir Al-Adawi, Dr. Marwan Al-Sharbati, Dept. Behavioural Medicine, SQU.

Nature and frequency of Y chromosome microdeletions in infertile male Omanis

Code: IG/MED/DEAN/1461 Dates: Jan – Oct 2013 Value: 1,000 OMR Funder: SQU-MRC

Investigators: Dr. Patrick Scott, Dr. Udayakumar Achandira, Dept. Genetics, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


Books & Book Chapters

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations
International


Poster Presentations
International


The Department of Haematology is unique as it functions both as a major clinical and laboratory medicine department. It plays a central role in the teaching of haematology to undergraduate medical students (M.D.), postgraduate students of medicine who have opted to specialise in medicine, and haematology residents of the Oman Medical Specialty Board (OMSB), as well as medical laboratory technicians in the B.Sc. Medical Laboratory Sciences courses. The Department’s laboratories provide state-of-the-art haematology testing for the University Hospital (SQUH) and referral services to several other hospitals like the Muscat Private Hospital. The Department is also the national centre for highly specialised testing such as flowcytometric and molecular haematological analysis for the diagnosis of haematological conditions.
Staff

Head of Department
Salam Alkindi, Associate Professor & Senior Consultant

Faculty
Shahina Daar, Associate Professor
Mohammed R. Boulassel, Associate Professor
Mariyam Al-Bakri, Clinical Lecturer
Muna Al-Maskari, Lecturer
David Dennison, Senior Consultant
Naglaa Fawaz, Senior Consultant
Anil Pathare, Senior Consultant
Mohammad Huneini, Senior Consultant
Khalil Al-Farsi, Senior Consultant
Murtadha Al-Kabori, Senior Consultant
Arwa Al-Riyami, Consultant
Bader Al-Rawahi, Senior Registrar (on study leave)
Zeba Zabeen, Senior Registrar
Hammad Khan, Senior Registrar
Fehmida Zia, Senior Registrar
Fauzia Wasim, Senior Registrar
Nausheen Kamran, Registrar
Mohamed Nadeem, Registrar
Rabia Jadoon, Registrar
Rizwan Querishi, Registrar
Vinodh Panjwani, Registrar
Najwa Abdulhameed, Registrar
Mohamed Rehan, Senior House Officer
Moez H.A. Rhim, Senior House Officer
Abubakar Ibrouf, Senior House Officer
Niveen Al-Ansari, Senior House Officer

Support Staff
Stuart Donaldson, Superintendent
David Gravell, Chief Biomedical Scientist

Heidi M. Davis, Chief Biomedical Scientist
Ali Al-Marhoobi, Chief Biomedical Scientist
Shakila Ashraf, Senior Biomedical Scientist
Hamood Al-Haddabi, Senior Biomedical Scientist
Rodrigo Villacrusis, Senior Biomedical Scientist
Maria Cicillia, Senior Biomedical Scientist
Abdulrehman N. Rashid, Senior Biomedical Scientist
Bushra Al-Said, Senior Biomedical Scientist
Sahima Al-Mamari, Senior Biomedical Scientist
Karima Al-Falahi, Senior Biomedical Scientist
Deuel M. Labrador, Senior Biomedical Scientist
Enrique O. Pedojan, Senior Biomedical Scientist
Hamed Al-Gheithi, Senior Biomedical Scientist
Sabah Al-Mahrooqi, Senior Biomedical Scientist
Sumaya Al-Hinani, Senior Biomedical Scientist
Qamariya Al-Abri, Senior Biomedical Scientist
Shoaib Al-Zadjali, Senior Biomedical Scientist
Mariyam Al-Brashdi, Senior Biomedical Scientist
Julian Nesin, Senior Biomedical Scientist
Asma A. Musleh, Senior Biomedical Scientist
Badriya Al-Belushi, Biomedical Scientist
Saif Al-Hosni, Biomedical Scientist
Mohammed Al-Rawahi, Biomedical Scientist
Ishaq Al-Salmi, Biomedical Scientist
Jamal Al-Qasabi, Biomedical Scientist
Eufrosina Alvarez, Biomedical Scientist
Mohan Doraiswamy, Biomedical Scientist
Nestor Naniong, Biomedical Scientist
Rene Gabucay, Biomedical Scientist
Allan S. Aurelio, Biomedical Scientist
Adela Angeles, Biomedical Scientist
Melani Tauro, Biomedical Scientist
Malvin J. W. Li, Biomedical Scientist
Vardarajan Nelvoy, Biomedical Scientist
Lancy Henry, Biomedical Scientist
Jerry Macni, Biomedical Scientist
Rhea Misquith, Biomedical Scientist
Fatma Al-Hasmi, Biomedical Scientist
Isehaq Al-Omairi, Biomedical Scientist
Zainab Al-Douhori, Biomedical Scientist
Alshima M. Taqi, Biomedical Scientist
Rahma Ambusaidi, Biomedical Scientist
Raya H. Al-Farsi, Biomedical Scientist
Binny Sam, Head Staff Nurse -1
Rose Saly, Staff Nurse -2
Mary Kurian, Staff Nurse - ICH3
Victoria G. Menezes, Staff Nurse 2
Shiney Thomas, Staff Nurse 2
Silva Kumari, Staff Nurse 2
Bindu Shibly, Staff Nurse 2
Shobha Sujith, Staff Nurse 2
Nuha Al-Kiyumi, Staff Nurse 2
Helen Carteza, Staff Nurse 2
Mhey Agilano, Staff Nurse 2
Eman Al-Homaidi, Coordinator
Tomichan Varghese, Coordinator
Dalal Y. Al-Khusaibi, Clerk
Anisa Al-Belushi, Social Worker
Ali Al-Kiyari, Medical Orderly

Highlights of the Year 2013
In 2013, the Haematology Clinical Unit treated patients with a vast range of haematological disorders, both as inpatients and outpatients. In addition, the Department runs a Thalassaemia Day Care Unit. In 2013, it offered comprehensive care for about 150 patients with transfusion-dependent thalassaemia. Of national interest is the successful bone marrow transplant programme, run by this Department. By the end of December 2013, a total of 271 bone marrow transplants on 260 patients had been performed in this centre, with results as good as those from the best centres around the world.

Teaching Programmes
UNDERGRADUATE PROGRAMME
Old Curriculum
The Department participates in teaching the Haematology-Lymph-Vascular course to 3rd year students. It runs a 5-week course on case-based learning in haematology for the 5th year students in the Integrated Lecture Series. It participates in bedside clinical teaching for 7th year students and runs a one-week laboratory rotation for 6 groups of 7th year students. It provides seminars on Anaemia & Haemostasis in Pregnancy for 7th year Obstetrics & Gynaecology students. Finally, the Department runs a course in the B.Sc Medical Laboratory Sciences.

New Curriculum
The Department developed and taught a new module on Hemato-lymphatic-Immunology in Phase II of the new undergraduate curriculum. It also participated and coordinated the various courses in Phase II in the new curriculum, in particular integrated modules I, II and III. It provided lectures on Introduction to Human Physiology in Phase I. Further it participated in and coordinated the Junior Clerkship Respiratory course and participated in the Junior Clerkship training with seminars on Complete Blood Count, Sickle Cell Vaso-Occlusive Crisis, Systolic Murmur Examination, Haemostasis, Bone Marrow Aspirate/Trephine and Hepatosplenomegaly.

In Intercalated Medicine, it provided the Haematology Laboratory Rotation. The Department also developed and conducted Senior Clerkship Phase III teaching in collaboration with the Child Health department, as well as developing and conducting laboratory rotations for these students. Finally, departmental staff taught in Research Modules I, II and III.
POSTGRADUATE PROGRAMME
The Department has developed and taught the Haematopathology course along with the Ministry of Health’s (MOH) Royal Hospital which is affiliated with the Oman Medical Specialty Board. There are 6 residents at various stages of training in the programme.

Training Courses & CME Activities
The Department also gave lectures to OMSB residents in Haematology, Pediatrics, Internal Medicine and Obstetrics & Gynecology. Finally, it participated in the Communications Skills workshop for OMSB and delivered multiple lectures in various parts of the country as part of its CME activity.

Clinical & Diagnostic Services
Clinical services are provided in the following major areas; adult outpatients (one specialised and three general clinics); adult inpatients; bone marrow transplantation (4 beds in the Bone Marrow Transplantation [BMT] Unit), and the sickle cell anaemia programme (in- and outpatients—both diagnostic and research activities).

The Department provides state-of-the-art diagnosis and therapy (including BMT) in the leukaemia, lymphoma and myeloma programmes, and in the thalassaemia day care programme.

The laboratory services cover specialised areas including: haemostasis; flowcytometry; haemoglobinopathy; molecular diagnostics; stem cell processing laboratory and general laboratory haematology. The blood transfusion service includes blood donation and storage; irradiation; plasmapheresis and exchange, and apheresis facilities (including stem cells) as well as the blood grouping and cross-matching laboratory.

Bone Marrow Transplantation Programme
The bone marrow transplant programme, established in the Department in 1995, serves the whole of Oman and continues to provide curative treatment for patients with haematological malignancy, bone marrow failure and potentially fatal genetic diseases. In 2013, 27 transplants were performed on 26 patients (22 allogeneic, 5 haplo-identical, 8 with bone marrow, 9 peripheral blood stem cell [PBSC] transplantation and 5 autologous). This makes a total of 271 transplants for 260 patients since 1995. The results of this transplant centre are comparable with those of the best centres worldwide. Importantly, the cost per transplant is a fraction of what is charged in other countries. Additionally, we have also collected 7 PBSCs from 6 patients (three T-cell depleted) and 6 bone marrow harvests and cryopreserved them in our liquid nitrogen storage facility for future use. Furthermore, we have also cryopreserved 177 cord blood units (siblings = 110; unrelated = 67).
SICKLE CELL PROGRAMME
The Department looks after a large number of patients with sickle cell disease (SCD) providing acute medical care, as well as genetic counselling and preventive programmes (vis-à-vis cord blood testing), and organising and guiding the patients and the medical community in the care of SCD. Recently, the role of the Department has been highlighted through our community outreach programs via the Hereditary Blood Disorders Society. Furthermore, several patients with severe SCD have now benefited from the Department’s active role in transplants for these patients from sibling donors with good success.

LEUKEMIA LYMPHOMA AND MYELOMA PROGRAMME
The Department is now an important tertiary care centre for most referrals for adult haematological malignancies particularly leukaemias, lymphomas and myelomas. The patients are able to receive state-of-the-art care in terms of both diagnostic and therapeutic modalities, including BMT and the advanced molecular diagnostics needed for proper workup and follow-up.

THALASSAEMIA PROGRAMME
The Department has been looking after about 150 patients with thalassaemia, delivering comprehensive care including blood transfusions, chelation therapy and regular meticulous monitoring for the side-effects and complications of the disease and its treatment. The unit is a centre of excellence in the region with extensive involvement in care and research including participation in an international drug trial (Exjade). The availability of the latest state-of-the-art MRI T2* equipment at the Radiology Department has improved the monitoring of the cardiac and liver iron overload status of these patients.

HAEMATOLOGY CLINICS AT SOHAR HOSPITAL
The Department conducts a monthly haematology clinic at the new Sohar Hospital. The clinic is run on rotation basis by one of the Department’s haematology consultants. They are assisted locally by Dr. Ali Al-Madhani from the Department of Medicine at Sohar Hospital.

OUTREACH CLINICS IN NIZWA AND SALALAH
The Department conducts a monthly haematology clinic at Nizwa Hospital as part of the Outreach Clinics programme. This has really benefitted the SCD patients living in and around the catchment area of Nizwa Hospital as this means that these patients do not have to travel all the way to SQUH for routine medications and consultations. Every two months, the Department also conducts a Haematology Clinic at the Sultan Qaboos Hospital in Salalah.
GENERAL LABORATORY SERVICES
The Haematology Laboratory caters for the entire hospital and additionally receives referral samples from all over Oman for routine and advanced haematology laboratory testing. The laboratory is subdivided into various sections including general haematology, haemoglobinopathy, haemostasis and special haematology, blood banking and donor room services, and the molecular division.

MOLECULAR RESEARCH AND DIAGNOSTIC LABORATORY
The Department now offers DNA diagnostic facilities for several thrombophilic disorders; haemoglobin disorders, immune deficiency syndromes and malignant haematology, especially for acute and chronic leukaemia. The section is also involved in the monitoring of the transplant progress by chimerism studies in post-transplant patients. Finally it provides diagnosis of chronic myeloproliferative disorders.

CORD BLOOD BANK
The Department, in collaboration with the Obstetrics & Gynaecology department, has now set up a Cord Blood Bank. We have standardised the collection and storage of cord blood samples. Collection of cord blood is currently done under two programmes: (a) sibling cord blood (SCB) and (b) unrelated cord blood (UCB). Up to December 2013, we had collected a total of 110 SCB units and 6 UCB units. We have so far used 3 SCB units for sibling cord blood transplantation.

APERESIS UNIT OF THE BLOOD BANK
The Department has now installed the Baxter Amicus, Optia and Cobe Spectra apheresis systems and our apheresis nurses and technicians are trained in their use. All these systems are now in routine use for harvesting stem cells from donors in the Department’s BMT programme; plasma exchange; platelet apheresis, and leucocyte collection. We have performed bone marrow harvesting for the autologous backup of patients undergoing transplantation in 9 cases. Additionally, in 18 cases, we have done peripheral blood stem cell cryopreservation for patients undergoing autologous transplantations. Furthermore, apheresis services are now made available, in consultation with the attending haematologist, to the SQUH wards and intensive care units whenever the need for plasmapheresis or plasma exchange arises.

BUSULPHAN PHARMAKOKINETICS
Optimisation of busulphan dosage in patients undergoing bone marrow transplantation is recommended in order to reduce the toxic effects associated with high drug levels. The API 150 EX LCMS system which has been installed for the research project on intravenous versus oral busulphan in BMT for thalassaemia is now fully operational. The section looks after the busulphan pharmacokinetics in patients undergoing BMT to assess the blood levels of the drug in order to optimise the treatment protocols. We have thus far performed pharmacokinetic studies on 9 patients for this purpose. A new API 3200 LCMSMS was installed in the Department in December 2013.
Research

RESEARCH PROJECTS

Establishment of a national facility in stem cell translation research for novel cellular-based therapies and tissue repair

Code: SR/MED/HAEM/09/01 Dates: 2009–2013 (extended) Value: OR 165,000 Funder: His Majesty’s Strategic Fund, Oman

Investigators: Dr. David Dennison, Dr. Anil Pathare, Dr. Salam Al-Kindi, Dr. Khalil Al-Farsi, Dr. Mohammed Hunieni, Dr. Naglaa Fawaz, Ms. Qamariya Al-Abri, Ms. Sahima Al-Maamaari, Ms. Sabah Al-Mahrooqi, Mr. Ali Al-Marhoobi, Mr. Hamed Al-Gheithi, Mr. Shoaib Al-Zadjali, Ms. Melanie Tauro, Dept. Haematology, SQU; Dr. Yasser Wali, Dr. Abdulhakeem Rawas, Dept. Child Health, SQU; Dr. Muhanna Al-Muslahi, Dept. Haematology, Royal Hospital, Oman; Dr. Hamoud Al-Dhuli, Dr. Rashid Al-Sukaiti, Dept. Radiology & Molecular Imaging, SQU; Dr. Shyam Ganguly, Dept. Family Medicine & Public Health, SQU; Dr. Helmut Schuster, Dept. Microbiology & Immunology, SQU; Dr. Adee Al-Zoubi, Jordan University, Jordan.
Molecular genetics of alpha globin gene expression in native Omani population: Towards understanding the molecular basis of alpha thalassaemia and impact on clinical expression of beta thalassaemia and sickle cell disease


Investigators: Dr. Salam Al-Kindi, Dr. Mohammad Huneini, Dr. Khalil Al-Farsi, Dr. Anil Pathare, Dr. Nagla Fawaz, Dr. Shoaib Al-Zadjali, Mr. Hamood Al-Haddabi, Dept. Haematology, SQU; Dr. R. Krishnamoorthy, INSERM U 763, Paris, France.

Rhesus [RH] and Kell [KEL] alleles in sickle cell patients with alloimmunization


Investigators: Dr. Anil Pathare, Dr. Salam Al-Kindi, Dr. Nagalaa Fawaz, Mr. Shoaib Al-Zadjali, Mr. Ali Al-Marhoobi, Ms. Saba Mahrooqi, Dept. Haematology, SQU.

Towards understanding the environmental and inherited basis of iron deficiency and iron deficiency anemia in the native Omani population: Molecular genetics of iron metabolism


Investigators: Dr. Nagala Fawaz, Dr. Anil Pathare, Dr. Salam Al-Kindi, Dr. Vinodh Panjwani, Mr. Shoaib Al-Zadjali, Dept. Haematology, SQU; Dr. R. Krishnamoorthy, INSERM U 763, Paris, France.

Evaluation of a multiparameter flow cytometry panel to detect minimal residual disease (MRD) in B-precursor ALL


Investigator: Dr. Anil Pathare, Dept. Haematology, SQU.

Establishing a maximum surgical blood ordering schedule for elective surgeries in Sultan Qaboos University Hospital


Investigator: Dr. Arwa Al-Riyami, Dept. Haematology, SQU.

Impact of myeloid antigen expression on treatment and outcome of adult patients with T-cell acute lymphoblastic leukemia

Code: MREC #678 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Murtadha Al-Khabori, Dept. Haematology, SQU.
Assessment of platelet counts using cell Dyn Sapphire in patients with low platelets

Investigator: Dr. Salam Al-Kindi, Dept. Haematology, SQU.

Prospective, open-label, multi-center, Phase III clinical study to investigate the efficacy and safety of human factor VWF/VIII concentrate (Wilate) in subjects with inherited type 3 von Willebrand disease (VWD) who undergo major surgical procedures

Investigator: Dr. Salam Al-Kindi, Dept. Haematology, SQU.

The effect of temperature and duration of sample storage on the measurement of lymphocyte sub populations for HIV positive and control subjects

Code: MREC #687  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Salam Al-Kindi, Dept. Haematology, SQU.

Incidence of Factor VIII inhibitors in haemophilia a patients following a product switch

Code: MREC #695  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Anil Pathare, Dept. Haematology, SQU.

Manifestations of B12 deficiency at SQUH

Code: MREC #696  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Khalil Al-Farsi, Dept. Haematology, SQU.

Can the new SIEMENS INNOVANCE VWF AC test kit replace the ristocetin co-factor assay in the investigation of von Willebrands disease? A preliminary assessment

Investigator: Dr. Anil Pathare, Dept. Haematology, SQU.

Incidence of Du phenotype and Bombay blood group in Omani population

Investigator: Dr. Shakila Ashraf, Dept. Haematology, SQU.
Comparative analysis of the sysmex XE-5000 and Cell DYN Saphire
Code: MREC #703  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Shakila Ashraf, Dept. Haematology, SQU.

Clinical and molecular characterization of von Willebrand disease patients in Oman
Code: MREC #714  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Anil Pathare, Dept. Haematology, SQU.

Pneumatic tube delivery system for transporting patient samples at SQUH, a quality study
Code: MREC #726  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Arwa Al-Riyami, Dept. Haematology, SQU.

Exploring the role of circulating invariant natural killer T cells in sickle cell disease
Investigator: Dr. Mohamed-Rachid Boulassel, Dept. Haematology, SQU.

Understanding the cross-talk among regulatory immune cells in lymphomas: A link to improve the efficacy of immunotherapeutic
Code: MREC #741  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Mohamed-Rachid Boulassel, Dept. Haematology, SQU.

A phase 3, double-blind, randomized, efficacy and safety comparison of prasugrel and placebo in patients with sickle cell disease
Code: MREC #756/780  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Salam Al-Kindi, Dept. Haematology, SQU.

Safety of peripheral stem cell mobilization in donors with sickle cell trait
Code: MREC #758  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Murtadha Al-Khabori, Dept. Haematology, SQU.

Reproducibility of manual platelet estimation
Code: MREC #786  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Murtadha Al-Khabori, Dept. Haematology, SQU.
Characterization of circulating microparticles in Omani sickle cell anemia patients: Comparison in steady state and painful crisis

Code: MREC #792  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Anil Pathare, Dept. Haematology, SQU.

Malaria-related deferral of blood donors at SQU blood bank

Code: MREC #805  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Arwa Al-Riyami, Dept. Haematology, SQU.

Evaluation of purified poloxamer 188 in children in crisis (EPIC): A phase 3 randomized, double-blind, placebo-controlled, multi-center clinical trial of MST-188 (purified poloxamer 188) injection in children with sickle cell disease experiencing vaso-occlusive crisis

Code: MREC #814  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Murtadha Al-Khabori, Dept. Haematology, SQU.

Validation of liver MRI T2*- comparison with liver iron load by R2 MRI (FERRISCAN)

Code: MREC #815  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Shahina Daar, Dept. Haematology, SQU.

Obstacles of conducting clinical and basic science research faced by the staff of College of Medicine and Sultan Qaboos University Hospital

Code: MREC #832  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Murtadha Al-Khabori, Dept. Haematology, SQU.

Genetic basis of variable phenotypic expression in sickle cell disease: The Sickle cell Sibling Study

Code: MREC #837  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Salam Al-Kindi, Dept. Haematology, SQU.

Disclosure of medical errors among patients at Sultan Qaboos University Hospital

Code: MREC #839  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Murtadha Al-Khabori, Dept. Haematology, SQU.
RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International


Poster presentations

International

1. Al-Riyami AZ, Al-Khabori M, ...Davis H, Al-Farsi K, Al-Huneini M, Alkindi S, Daar S. The pneumatic tube system does not affect normal complete blood count results: A validation study. Poster #P800. ISLH 2013, the XXVIth International Symposium on Technological Innovations in Laboratory Hematology, Toronto, Canada, 10–12 May 2013.


Seminar Presentations

International

1. Al-Khabori M. Hemoglobinopathies Clinic: Case presentation and discussion. Middle East 4th Hematology Oncology Summit, Novartis Oncology, Dubai, UAE, 13 Apr 2013.


5. Daar S. Non-Transfusion Dependent Thalassaemia. Thalassaemia Awareness Symposium, Dubai, UAE, Sep 2013.

6. Daar S. Monitoring and managing iron burden in the endocrine system. EGM Summit, New Delhi, India, Sep 2013.

7. Daar S. Non-transfusion dependent thalassaemia. Epidemiology,Pathophysiology, Complication and Treatment, Zurich, Switzerland, Mar 2013.

Seminar Presentations

National
2. Alkindi S. Towards comprehensive care in sickle cell disease. Ibri Hospital, Oman, Mar 2013.
3. Alkindi S. Pain management in sickle cell disease. Ibri Hospital, Oman, Mar 2013.
5. Alkindi S. Comprehensive care for sickle cell disease. Ibra Hospital, Oman, Apr 2013.
10. Al-Khabori M. Multiple Myeloma for the Internist. Sohar Hospital, Ministry of Health, Oman, 31 Mar 2013.

Thesis Supervision

Student Name: Amal Khalfan
Qualification: B.Sc. BMS
Title: The effect of temperature and duration of sample storage on the measurement of lymphocyte sub populations for HIV positive and control subjects
Supervisors: Dr. Salam Alkindi, Mr. Hamed Al-Gheithi
Date of completion: May 2013

Student Name: Ala Mubarak
Qualification: B.Sc. BMS
Title: Comparative analysis of Sysmex XE-5000 and Cell-Dyn Saphire
Supervisor: Dr. Salam Alkindi, Ms. Heidi Davis
Date of completion: May 2013
<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Raya Hilal</th>
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<tbody>
<tr>
<td>Qualification:</td>
<td>B.Sc. BMS</td>
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<tr>
<td>Title:</td>
<td>Assessment of platelet count on cell dyn sapphire using optical and impedance methodology and CD61 on low platelet counts</td>
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<td>Supervisors:</td>
<td>Dr. Salam Alkindi, Ms. Heidi Davis</td>
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<td>Date of completion:</td>
<td>May 2013</td>
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<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Amira Al-Ghafri</th>
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<tr>
<td>Qualification:</td>
<td>B.Sc. BMS</td>
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<tr>
<td>Title:</td>
<td>Can the new Siemens Innovance vWF Ac test kit replace the ristocetin co-factor assay in the investigation of von Willebrand disease?</td>
</tr>
<tr>
<td>Supervisors:</td>
<td>Dr. Anil Pathare, Ms. Qamariya Al-Abri</td>
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<tr>
<th>Student Name:</th>
<th>Sheikha Al-Mukhbali</th>
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<td>Qualifying Exam:</td>
<td>B.Sc. BMS</td>
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<tr>
<td>Title:</td>
<td>Incidence of weak D phenotypes at SQUH</td>
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<tr>
<td>Supervisors:</td>
<td>Dr. Salam Alkindi, Ms. Sabah Al-Maruqui</td>
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<tr>
<td>Date of completion:</td>
<td>May 2013</td>
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The Department is concerned with the science of human anatomy, especially the relationship between structure and function, clinical applications and its use in interpreting images produced by modern radiographic techniques. The Department’s main teaching load is in Phases I and II of the M.D. programme. This is shared with other basic medical sciences departments in the delivery of integrated system courses. However, it also teaches a few department-based courses and contributes to other programmes like the B.Sc. degrees in Biomedical Sciences and Nursing. The teaching focuses on gross anatomy, developmental anatomy and the study of the microstructure of tissues and cytogenetics. In addition to radiological anatomy, students study gross and topographical anatomy using prosections and anatomical models, histology and embryology. Living and surface anatomy is an important component of the course. Students taught include medical undergraduates and postgraduates preparing for higher examinations, e.g. Fellowship of the Royal Colleges (FRCS, MRCP-PATH, FRCP) as well as anticipated Master’s and Ph.D. students.

In addition, the Department’s input includes teaching clinical and applied anatomy to Oman Medical Specialty Board candidates. Postgraduate teaching involves the teaching of advanced histology and embryology to candidates specialising in histopathology and obstetrics & gynaecology. Candidates preparing for their FRCS examinations enjoy the teaching facilities provided by the Department. The Department also provides services to other clinical departments and students of the Institute of Health Sciences in Muscat.
Research continues to be pivotal to the academic activities of the Department. This embraces hypertension; immune response to pregnancy; the bacteriostatic effect of some medicinal plants; the use of honey in histological sections and plastination; breast cancer markers; medical education; medical informatics and curriculum development.

**Staff**

**Head of Department**
Ibrahim Inuwa, Associate Professor (to 30 Aug 2013)
Omar Habbal, Associate Professor (from 1 Sep 2013)

**Faculty**
Varna Taranikanti, Assistant Professor
Sadhana Roychoudhury, Assistant Professor
Halima Al-Balushi, Clinical Instructor
Ruqaya Al-Jabri, Clinical Instructor
Mohamed Al-Mushaiqri, Lecturer

**Support Staff**
Sulaiman Al-Khiyari, Acting Superintendent
Abdulgaffar El-Hag, College Superintendent
Nasser Al-Hashmi, Biomedical Scientist
Nawal Al-Mukheini, Biomedical Scientist
Talal Al-Hassani, Biomedical Scientist
Prem Tilaka, Biomedical Scientist
Indrani Arambewela, Biomedical Scientist
Alexander George, Coordinator

**Highlights of the Year 2013**
Dr. Ibrahim Inuwa was promoted to Assistant Dean for Preclinical Affairs in September 2013. Dr. Omar Habbal became the Head of the Department on 1 September 2013 having previously been Assistant Dean for Preclinical Affairs.

Dr. Sujata Jog and Dr. Mirghani Osman were visiting Consultants in the Department from September to December 2013. In September 2013, Dr. Halima Al-Belushi, Clinical Lecturer, started a five-year scholarship for Ph.D. studies at the Karolinska Institutet, Sweden, while Dr. Ruqaiya Al-Jabri, Clinical Lecturer, started a four-year scholarship for Ph.D. studies at the University of Bath, UK.

**Teaching Programmes**

**PRE-CLINICAL PROGRAMME**
The Department offered several courses in the M.D. programme and contributed to most system-based courses in the curriculum. Courses offered in the new curriculum were: Introduction to Anatomy; Structure-Function Relationship; Growth & Development; The Integrated Module I; Cardiovascular System; Respiratory System; Haemo, Lymph, Immune Systems; The Integrated Module II; Alimentary System; Uro-reproductive System; Integrated Module III; Locomotor System; Nervous System & Special Senses; Endocrine System.

**B.S.C. NURSING PROGRAMME**
The Department offered Anatomy and Physiology courses in the B.Sc. Nursing programme in College of Nursing.

**CLINICAL PROGRAMME**
The Department contributes to the Pre-Clerkship stage of Phase III of the M.D. curriculum.
POSTGRADUATE TEACHING
The Department anticipates receiving Master’s students as the course is now on offer.

Research

RESEARCH PROJECTS
The effect of sleep-deprivation on the immune system: Role of cortisole in the effect of sleep deprivation on T-cells and neutrophil functions

Code: IG/MED/ANAT/13/03 Dates: 2013–2014 Value: OR 14,000 Funder: SQU

Investigators: Dr. Omar Habbal, Dept. Human & Clinical Anatomy, SQU; Prof. Ali Al-Jabri, Dept. Microbiology & Immunology, SQU; Dr. Elias Said, Dept. Microbiology & Immunology, SQU; Dr. Mohammed Al-Abri, Dept. Physiology, SQU.

A study of the role of lymphangiogenesis in breast cancer


Investigators: Dr. Varna Taranikanti, Dept. Human & Clinical Anatomy, SQU; Dr. Adil Al-Ajmi, Dept. Surgery, SQU; Dr. Ritu Lakhtakia, Dept. Pathology, SQU; Dr. Shyam Ganguly, Dept. Family Medicine & Public Health, SQU; Ms. Kawther Al-Adawi, Department of Pathology, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Poster Presentations

*International*


The Department of Medicine endeavours to create an environment conducive to achieving excellence in learning for undergraduate and postgraduate students, to provide opportunities to conduct clinical research relevant to the region, and to be a centre of excellence providing specialised, state-of-the-art clinical care in a tertiary care pattern. The major research themes include asthma, breast cancer, gastric cancer, HIV, Hodgkin’s and non-Hodgkin’s lymphoma and cerebrovascular disease. Research areas include epidemiology, molecular characterisation, study of genetic polymorphisms and the study of novel mechanisms of the aetiology of various diseases. Members of the Department are principal or co-investigators of numerous research projects. The Department provides clinical services through a specialty-based system and takes pride in providing continuous, comprehensive care to the patients in the area required. Consultants are on-call daily from ten different sub-specialties: cardiology, endocrinology, gastrointestinal and liver diseases, general internal medicine, infectious disease, nephrology, neurology, oncology, respiratory diseases and rheumatology. These subspecialties offer medical services to patients in the capital area and accept complicated referrals from all over the country.
Staff

Head of Department
Ali Al-Mamari, Senior Consultant

Faculty
Omar Al-Rawas, Professor, Dean
Bazdawi M. Al-Riyami, Professor
Nicholas Woodhouse, Professor
Mansour Al-Moundhri, Professor
Arunodaya Gujjar, Professor
Jamal Sallam, Assistant Professor
Batool Hassan, Assistant Professor
Poovathor C. Jacob, Assistant Professor
Muhammad A. Sadiq, Assistant Professor
Abdullah Al-Asmi, Senior Consultant & Hospital Director-General
William J. Johnston, Senior Consultant
Aftab A. Siddiqui, Senior Consultant
Ali Al-Shirawi, Senior Consultant
Mehar Ali, Senior Consultant
Masoud Kashoob, Senior Consultant
Ikram Burney, Senior Consultant
Muhammad Furrukh, Senior Consultant
Hafidh Al-Hadi, Senior Consultant
Mansour Sallam, Senior Consultant
Abdullah Balkhair, Senior Consultant
Juma Al-Kaabi, Senior Consultant
Omayma Elshafie, Senior Consultant
B. N. Jayakrishnan, Senior Consultant
Jojy George, Senior Consultant
Dawood Al-Riyami, Senior Consultant
Ramachandiran Nandhagopal, Senior Consultant
Abdulhakim Al-Hashim, Senior Consultant
Adil B. Al-Riyami, Senior Consultant
Hatem Farhan, Consultant
Mohammed Al-Ghailani, Consultant

Hatim A. Al-Lawati, Consultant
Issa S. Al-Qarshoubi, Consultant
Wasif Rasool, Consultant
Said A. Al-Busafi, Consultant
Mujahid Al-Busaidi, Consultant
Zeid A. Gaifer, Consultant
Shiyam Kumar, Consultant
Muhammad A. Khatri, Senior Specialist
Saif Khan, Senior Specialist
Mohammed Misbah, Senior Specialist
Mohammed M. Shaikh, Senior Specialist
Osama Tariq, Senior Specialist
Suneel Kumar, Senior Specialist
Abdulmanan Khaskheli, Senior Specialist
Khalfan B. Al-Zeedy, Senior Specialist
Osama Hassan, Senior Specialist
Ammar Abdulrahman, Senior Specialist
Darshan Lal, Senior Specialist
Saja M. Mohamed, Senior Specialist
Ali M. Al-Shemmarri, Senior Specialist
Khawaja F. Zahid, Senior Specialist
Dawar M. Rizavi, Senior Specialist
Saif Al-Mubaishi, Senior Specialist
Babar Dildar, Senior Specialist
Fatima Aamer, Specialist
Nooralddin Mahmood, Specialist
Farooq M. H. Rehman, Specialist
Leena Bella, Specialist
Kowthar Hassan, Specialist
Tanwer Ahmed, Specialist
Nisreen Siddiq, Specialist
Abdullah Al-Alawi, Specialist
Ahmed Al-Qassabi, Specialist
Jamal N. Al-Akbhari, Specialist
Hashim BaTaher, Specialist
Ahmed Al-Riyami, Specialist
Haifa Al-Abri, Specialist
Mohammed Al-Rawahi, Specialist
Ali Al-Lawati, Specialist
Khaled Al-Baimani, Specialist
Ibrahim Al-Busaidi, Specialist
Zaheer Siddiq, Specialist
Taher Al-Mufti, Specialist
Sara Aziz, Senior House Officer
Anjum H. Osman, Senior House Officer
Zeyana Al-Hadrami, Senior House Officer
Nasreen El-Fatih, Senior House Officer
Waiel M. Mekki, Senior House Officer
Taha D. Al-Mufti, Senior House Officer
Zamzam Al-Hashami, Clinical Lecturer & Senior House Officer
Khalid R. Al-Shamousi, Clinical Lecturer & Senior House Officer

Technologists
Saphiya A. Al-Ajmi, Podiatrist
Sawsan Baddar, Respiratory Therapist

Coordinators
Roselyn Natividad
Ghaniya Al-Siyabi
Maryam Al-Baloushi

Highlights of the Year 2013

In this period, a number of departmental staff received awards for their achievements. Dr. Ikram Burney received the Certificate of Academic Excellence on the occasion of the 13th University Day, in recognition of his outstanding teaching performance in the year 2012–13. Dr. Said Al-Busafi won the 2013 Dr. ABR Thomson - Dr. CN Williams Award for his publication of ‘The utility of Xenon-133 liver scan in the diagnosis and management of nonalcoholic fatty liver disease’ in the Canadian Journal of Gastroenterology. Dr. Abdullah Al-Asmi was appointed the Director General of Sultan Qaboos University Hospital (SQUH). Dr. Hatem Farhan won the Best Trainer Award from the Oman Medical Specialty Board (OMSB).

The Department welcomed the following new staff: Dr. Muhammad Sadiq as Assistant Professor in Cardiology and Dr. Mohammed Shaikh as Senior Specialist in Cardiology. Dr. Mujahid Al-Busaidi (intensive medicine), Dr. Hatim Al-Lawati (interventional cardiology) and Dr. Saif Al-Mubaishi (pulmonology) returned from scholarship studies in Canada.

Dr. Arunodaya Gujjar was promoted to Professor. The following doctors were promoted to Senior Consultant: Dr. Jojy George, Dr. R. Nandhagopal, Dr. Abdulhakim Al-Hashim and Dr. Adil Al-Riyami. The following doctors were promoted to Consultant: Dr. Mohammed Al-Ghailani, Dr. Shiyam Kumar, Dr. Mujahid Al-Busaidi and Dr. Hatim Al-Lawati. The following doctors were promoted to Senior Specialist: Dr. Osama Tariq, Dr. Abdulmanan Khaskheli and Dr. Osama Hassan. The following doctors were promoted to Specialist: Dr. Fatima Aamer, Dr. Nisreen Siddiq, Dr. Taha Al-Mufti, Dr. Zaheer Siddiq and Dr. Leena Bella.

The final M.D. examinations in medicine, consisting of a written theory examination, an Objective Structured Clinical Examination and a Clinical Examination, were held in June 2013. A total of 78 students passed in medicine, two of whom were awarded distinctions. The four students who failed passed the repeat examination in September. This examination was the last one for all the cohorts from the old curriculum.
The Department organised two postgraduate examinations during 2013: Membership of the Royal College of Physician of the UK and of Ireland. The Department was complemented for its outstanding organisation and experience in handling all issues related to the examination process.

The Department continues to attract undergraduate and postgraduate students from Oman and abroad for electives. In 2013, we received more than 20 students from Oman and other countries. In addition, eight junior doctors undertook clinical attachments in the Department in preparation for postgraduate examinations and further training.

The staff of the department participated in many of courses and workshops organised by the Medical Education Unit (MEU) of the College of Medicine & Health Sciences (COMHS) in order to improve their teaching and assessment skills for undergraduate and postgraduate level courses. These included the Certificate in Health Professional Education (CHPE) and workshops on Appraisal Skills; Student Assessment; Continuous Assessment of Clinical Skills; Professional Behaviour, and Designing Integrated Questions.

The Department’s Annual Research Retreat was held on 22 June 2013 at the Crowne Plaza Hotel, Muscat. It was attended by the Dean of the COMHS and the Director General of SQUH. An overview of the research productivity of the Department was given and discussions ensued on how to improve the departmental research output. Certificates of appreciations were also distributed to staff with distinguished performances during the academic year.

Teaching Programmes

UNDERGRADUATE PRECLINICAL PROGRAMME
The Department continued its major role in teaching at all levels.

Integrated modules
Members of the Department participated in all Phase II teaching modules including: Integrated module I, which covers the cardiovascular, pulmonology and locomotor systems; Integrated module II, which covers the gastrointestinal system in addition to the nutrition lectures; Integrated module III, which covers the nervous, endocrine and locomotor systems. The teaching took the form of formal lectures, tutorials and bedside teaching activities.

UNDERGRADUATE CLINICAL PROGRAMME

Pre-Clerkship Programme
This section of Phase III consists of nine weeks of rotations per year. The Department contributes heavily to three modules (Cardiovascular, Pulmonology and Neurology), in addition to the Musculoskeletal system with the Department of Surgery.
Pre-clerkship students, divided into 9 groups are posted for a week each in 9 different components of the programme. Three of these components (Cardiovascular, Central Nervous and Pulmonology systems) were undertaken in the Department of Medicine. Unlike other departments, 3 groups of students (a total of 42 students) were posted together in Medicine at all times during the year.

Once a week, three tutors taught the physical examination of their respective systems in the Skills Laboratory. This was done with the aid of pre-recorded videos and a demonstration of history-taking and physical examination on a healthy volunteer. Following this the students were allowed to practice under supervision on this simulated patient. Three days a week, the students had two clinical sessions every day in each of these three specialties (separately for each group). They took histories from patients in the wards and later performed the physical examination under the guidance of a tutor. A list of nine symptoms given at the beginning of each week in each of these three systems formed the basis for a focused history and the clinical examination. On the last morning of the week these 42 students were assessed independently by a mini-Clinical Evaluation Exercise (mini-CEX). The Cardiothoracic and Neurosurgery units and the Department of Anaesthesia were involved in the teaching with Cardiology, Neurology and Pulmonology units, respectively.

In these nine weeks, all of the students acquired the basic skills, knowledge and attitudes to elicit a patient history and perform physical examinations on patients with cardiovascular, neurological and respiratory diseases.

**Junior Clerkship**

This part of Phase III consists of eight-week rotations throughout the year for six groups: seven weeks of clinical rotations in Medicine and one week of Skills Laboratory Training (SLT). During this rotation, students are expected and facilitated to achieve well-defined objectives of knowledge, skills and attitudes. During the seven weeks, the student groups are distributed amongst the acute medicine teams. In addition, the students attend two didactic teaching sessions per day. Moreover, as part of their continuous assessment, each student is examined by different members of the Department via a mini-CEX in weeks 3, 5 and 7 and a long case in weeks 4 and 6. Each afternoon during the SLT week all of the students are trained by members of the Department using the dummies on how to perform different procedures e.g. phlebotomy, arterial blood gas testing, lumbar punctures, etc. The Department contributes substantially to the preparation and organisation of the final examination which is conducted in December each year.

**Senior Clerkship**

Similar to the junior clerkship, this part of Phase III, consists of eight-week rotations throughout the year for 6 groups: 7 weeks clinical rotation in Medicine and 1 week in the SLT. During the 7 weeks, groups of 8–10 students get distributed amongst the acute medicine teams. In addition, the students attend one didactic
teaching session per day where they are expected to do a presentation on one of the topics of essential knowledge of medicine expected of senior clerkship students. Moreover, each student will have a long case assessment at the end of the rotation. The preparation of the first final examination for the senior clerkship students, planned for February 2014, is on-going.

**Pre-internship**
The main objectives and the rotations, including the three-week medicine rotation of this final section of Phase III, have been prepared and the first group is expected to start in March 2014.

**POSTGRADUATE PROGRAMME**

**OMSB Residency Programme**
The Department continuously receives OMSB residents for training in internal medicine. Undergraduates and postgraduates are involved in many educational activities including the morning case report (morning meeting), grand rounds, radiology meetings and journal clubs, as well as the monthly mortality review meeting.

Members of the Department actively participate in the postgraduate teaching of interns, house officers and the OMSB residents in internal medicine as well as residents from other subspecialties (such as Family Medicine & Public Health, Dermatology, Laboratory Sciences and Accident & Emergency) rotating through Medicine. Residents receive supervised training on ward rotations and during electives for the different subspecialties of Medicine. Members of the Department participate in organised teaching activities, such as lectures (twice weekly), radiology rounds (weekly) and grand rounds (weekly). In addition, they are invited to deliver lectures to other subspecialty residency programmes, such as those in the Emergency Medicine and Family Medicine & Public Health departments.

**Training Courses & CME Activities**
Continuing medical education (CME) sessions are held every alternate Monday morning. Wednesday lunch-times are reserved for presentations by outside guest speakers.

Prof. Mansour Al-Moundhri delivers lectures regularly at the Pain Management Course organised by the Directorate of Training & CPD (DTD) in conjunction with the Directorate of Nursing in SQUH. Drs. Ikram Burney and Muhammad Furrukh regularly deliver lectures at the Chemotherapy Administration Course organised by the DTD in conjunction with the Directorate of Nursing.
### Clinical & Diagnostic Services

**Table 1: Department of Medicine inpatient and outpatient numbers in 2013**

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Inpatients</th>
<th>Outpatients</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>905</td>
<td>7,943</td>
<td>8,848</td>
</tr>
<tr>
<td>Clinical Physiology, cardiology</td>
<td>0</td>
<td>3,102</td>
<td>3,102</td>
</tr>
<tr>
<td>Clinical Physiology, neurophysiology</td>
<td>0</td>
<td>2,955</td>
<td>2,955</td>
</tr>
<tr>
<td>Clinical Physiology, respiratory</td>
<td>0</td>
<td>1,442</td>
<td>1,442</td>
</tr>
<tr>
<td>Diabetic</td>
<td>36</td>
<td>6,971</td>
<td>7,007</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>369</td>
<td>206</td>
<td>575</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>1,715</td>
<td>6,375</td>
<td>8,090</td>
</tr>
<tr>
<td>Infectious Diseases</td>
<td>82</td>
<td>1,017</td>
<td>1,099</td>
</tr>
<tr>
<td>Lipid Clinic</td>
<td>0</td>
<td>2,264</td>
<td>2,264</td>
</tr>
<tr>
<td>Medicine</td>
<td>1,791</td>
<td>971</td>
<td>2,762</td>
</tr>
<tr>
<td>Nephrology</td>
<td>200</td>
<td>597</td>
<td>797</td>
</tr>
<tr>
<td>Neurology</td>
<td>585</td>
<td>7,193</td>
<td>7,778</td>
</tr>
<tr>
<td>Oncology</td>
<td>4,109</td>
<td>2,615</td>
<td>6,724</td>
</tr>
<tr>
<td>Pulmonology Clinic</td>
<td>325</td>
<td>4,776</td>
<td>5,101</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>832</td>
<td>4,414</td>
<td>4,846</td>
</tr>
<tr>
<td>Thyroid</td>
<td>0</td>
<td>4,404</td>
<td>4,404</td>
</tr>
<tr>
<td>Totals</td>
<td>11,429</td>
<td>58,006</td>
<td>69,435</td>
</tr>
</tbody>
</table>

**Table 2: Consultation statistics in 2013**

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Inpatients</th>
<th>Outpatients</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>181</td>
<td>33</td>
<td>214</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>587</td>
<td>64</td>
<td>651</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>277</td>
<td>24</td>
<td>301</td>
</tr>
</tbody>
</table>
Table 3: Gastrointestinal unit procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oesophagogastroduodenoscopy</td>
<td>1,101</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>519</td>
</tr>
<tr>
<td>Endoscopic retrograde cholangiopancreaticography (ERCP)</td>
<td>57</td>
</tr>
<tr>
<td>ERCP and insertion of metal biliary stent</td>
<td>3</td>
</tr>
<tr>
<td>Push enteroscopy</td>
<td>16</td>
</tr>
<tr>
<td>Transnasal oesophagogastroduodenoscopy</td>
<td>16</td>
</tr>
<tr>
<td>Percutaneous endoscopic gastric tube insertion</td>
<td>5</td>
</tr>
<tr>
<td>Percutaneous endoscopic gastric tube replacement</td>
<td>1</td>
</tr>
<tr>
<td>Colonic polypectomy</td>
<td>36</td>
</tr>
<tr>
<td>Gastric polypectomy</td>
<td>6</td>
</tr>
<tr>
<td>Oesophageal metallic stent insertion</td>
<td>5</td>
</tr>
<tr>
<td>Duodenal metallic stent insertion</td>
<td>2</td>
</tr>
<tr>
<td>Gastric metallic stent insertion</td>
<td>1</td>
</tr>
<tr>
<td>Colonic metallic stent insertion</td>
<td>1</td>
</tr>
<tr>
<td>Oesophageal varices banding</td>
<td>29</td>
</tr>
<tr>
<td>Endoscopic oesophageal dilatation</td>
<td>16</td>
</tr>
</tbody>
</table>
Table 4: Respiratory procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronchoscopy</td>
<td>99</td>
</tr>
<tr>
<td>Pleural procedures</td>
<td>28</td>
</tr>
<tr>
<td>Pulmonary function test</td>
<td>959</td>
</tr>
<tr>
<td>Total</td>
<td>1,086</td>
</tr>
</tbody>
</table>

Table 5: Invasive cardiology procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective coronary angiography</td>
<td>719</td>
</tr>
<tr>
<td>Emergency coronary angiography</td>
<td>c. 15</td>
</tr>
<tr>
<td>Elective percutaneous coronary intervention</td>
<td>287</td>
</tr>
<tr>
<td>Emergency percutaneous coronary intervention</td>
<td>-</td>
</tr>
<tr>
<td>Intra-aortic balloon pump insertion</td>
<td>9</td>
</tr>
<tr>
<td>Catheter aspiration of coronary thrombus</td>
<td>24</td>
</tr>
<tr>
<td>Fractional flow coronary reserve study</td>
<td>-</td>
</tr>
<tr>
<td>Temporary pacemaker</td>
<td>31</td>
</tr>
<tr>
<td>Permanent pacemaker</td>
<td>10</td>
</tr>
<tr>
<td>Pericardiocentesis</td>
<td>6</td>
</tr>
<tr>
<td>Right-side heart catheterisation</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>1,133</td>
</tr>
</tbody>
</table>
Table 6: Non-invasive cardiology procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrocardiogram (ECG)</td>
<td>4,560</td>
</tr>
<tr>
<td>24-hour ECG Holter monitoring</td>
<td>595</td>
</tr>
<tr>
<td>24-hour blood pressure monitoring</td>
<td>186</td>
</tr>
<tr>
<td>Treadmill exercise test</td>
<td>-</td>
</tr>
<tr>
<td>Stress thallium scintigraphy</td>
<td>290</td>
</tr>
<tr>
<td>Transthoracic echocardiography (adult)</td>
<td>3,443</td>
</tr>
<tr>
<td>Transoesophageal echocardiography</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>9,081</td>
</tr>
</tbody>
</table>

Table 7: Nephrology procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemodialysis</td>
<td>2,322</td>
</tr>
</tbody>
</table>

Research

RESEARCH PROJECTS

The prognostic role of tissue, serum, and whole blood DNA global and site-specific promoter methyla-
tion and miRNA gene expression profile in locally advanced breast cancer during neo adjuvant chemo-
therapy treatment

Investigator: Prof. Mansour Al-Moundhri, Dept. Medicine, SQU.

A comprehensive study of CNS demyelinating disorders in Omani patients: Clinical profile, serological
profile of neuromyelitis optica autoantibody, optical coherence tomographic abnormalities and alter-
ations in bone mineral density and metabolism

Investigator: Dr. P. C. Jacob, Dept. Medicine, SQU.
Pulse wave velocity as a predictor of failure to mature of arterio-venous fistula (AVF)


Investigator: Dr. Dawood Al-Riyami, Dept. Medicine, SQU.

Dynamic changes of global DNA methylation patterns during neo-adjuvant chemotherapy treatment: in vivo and in vitro models


Investigators: Prof. Mansour Al-Moundhri, Dept. Medicine, SQU; Prof. Badreldin Ali, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Sirin Adham, Dept. of Biology, College of Science, SQU; Manal Al-Khanbashi, Ph.D. student, SQU.

A study of candidate biomarkers in epithelial ovarian cancers, and correlation with treatment outcomes

Code: IG/MED/MEDE/13/01 Dates: 2013 Value: OR 3,000 Funder: SQU

Investigators: Dr. Ikram A. Burney, Dept. Medicine, SQU; Dr. Moza Al-Kalbani, Dept. Obstetrics & Gynaecology, SQU; Dr. Ritu Lakhtakia, Dept. Pathology, SQU; Dr. Asma Al-Balushi, Dept. Emergency Medicine, SQU. Dr. Ikhlas Ali, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr Yahya Tamimi, Dept. Biochemistry, SQU.

The serological prevalence of *Helicobacter pylori* (*H. pylori*) in Oman


Investigators: Dr. Jamal Sallam, Dr. Masoud Kashoob, Dept. Medicine, SQU; Dr. Mohammed Al-Bulushi, Dept. Microbiology & Immunology, SQU; Dr. Mohammed Al-Hunaini, Dept. Haematology, SQU.

Clinical and electrophysiogical profile of patients with primary generalized epilepsy referred to SQUH


Investigators: Dr. Abdullah Al-Asmi, Dr. Ramachandiran Nandhagopal, Department of Medicine, SQU; Dr. Amna Al-Futaisi, Dept. Child Health, SQU; Dr. Ibrahim Al-Zakwni, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Mohammed Al-Abri, Mr. Poothrikovil Rajesh P., Dept. Clinical Physiology, SQU; Dr. Fathiya Al-Murshe-di, Dept. Genetics, SQU.

Aetiology and outcome of patients presented to SQUH with acute pancreatitis from Jan 2008–Dec 2012

Code: MREC #663 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Aftab Siddiqui, Dept. Medicine, SQU.
Mutation status of \textit{EGFR}, \textit{Kras}, \textit{Braf}, \textit{Fat4}, \textit{ARID1A} genes in an Omani gastric cancer cohort


Investigators: Dr. Mansour Al-Moundhri, Dept. Medicine, SQU; Dr. Marwa Al-Riyami, Dept. Pathology, SQU.

Assessment of systolic, diastolic function and development of pulmonary hypertension in children with beta-thalassemia intermedia using conventional and tissue Doppler echocardiography


Investigator: Dr. Mansour Sallam, Dept. Medicine, SQU.

Aortic root dimensions in Omani patients as measured by cardiac computed tomography

Code: MREC #690  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. Hatem Al-Farhan, Dept. Medicine, SQU.

The hemodynamics in normotensive and essential hypertensive individuals: A cross-sectional study through the thoracic electrical bioimpedance

Code: MREC #698  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Prof. Arunodaya Gujjar, Dept. Medicine, SQU.

Epidemiology of breast cancer in Oman

Code: MREC #705  Dates: 2013 Value: Unfunded  Project Approval: SQU

Investigator: Prof. Mansour Al-Moundhri, Dept. Medicine, SQU.

Assessment of heart rate reduction, antianginal efficacy and quality of life improvement with the If inhibitor Ivabradine in Coronary artery disease patients (MAGNIFICENT trial)

Code: MREC #708  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Mansour Sallam, Dept. Medicine, SQU.

Experience with totally implantable central venous access ports in patients with cancer in a single center: Sultan Qaboos University Hospital experience

Code: MREC #711  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Shiyam Kumar, Dept. Medicine, SQU.

Effect of sitagliptin; DPP4 inhibitor as a second or third line oral agent to control blood glucose in type 2 diabetes

Code: MREC #743  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Ali Al-Mamari, Dept. Medicine, SQU.
Aetiology, modality of treatment and outcome of patients presented to SQUH with thyroid disease and underwent iodine thyroid scan from Jan 2010 to Dec 2012

Code: MREC #748  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Prof. Nicholas Woodhouse, Dept. Medicine, SQU.

The outcomes of Omani patients with chronic kidney disease (CKD) in stage five who refused dialysis

Code: MREC #765  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Dawood Al-Ryami, Dept. Medicine, SQU.

Serum immunoglobulin E (IgE) levels and asthma severity

Code: MREC #768  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Jayakrishnan Nair, Dept. Medicine, SQU.

Clinico-pathological features and outcomes of cancer of cervix in Oman

Code: MREC #775  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Ikram Burney, Dept. Medicine, SQU.

Prevalence of hepatitis B core antibodies in volunteer blood donors

Code: MREC #779  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Wasif Rasool, Dept. Medicine, SQU.

Optimizing care pathways using routinely collected patient data

Code: MREC #797  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Abdullah Al-Asmi, Dept. Medicine, SQU.

Pattern and Clinical outcome of lupus nephritis in Omani patients

Code: MREC #806  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Juma Al-Kaabi, Dept. Medicine, SQU.

Prevalence and clinico-histological features of Helicobacter pylori in patients undergoing esophagogastroduodenoscopy at SQUH

Code: MREC #807  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Said Al-Busafi, Dept. Medicine, SQU.
Contrast induced nephropathy in patients with chronic kidney disease undergoing invasive coronary procedure: clinical and procedural risk factors

Code: MREC #809 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Mansour Sallam, Dept. Medicine, SQU.

Retrospective analysis of mortality among Omani patients with systemic lupus erythematosus over 17 year period admitted to squh

Investigator: Dr. Juma Al-Kaabi, Dept. Medicine, SQU.

Gastrostomy feeding tube insertion, indication and outcome: A comparison between radiological and endoscopic insertion

Code: MREC #827 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Issa Al-Qarshoubi, Dept. Medicine, SQU.

Clinico-epidemiological features of Wilson’s disease in Oman: Single centre experience

Investigator: Dr. Said Al-Busafi, Dept. Medicine, SQU.

Characteristics of hepatitis C patients in Oman

Code: MREC #844 Dates: 2013 Value: Unfunded Project Approval: SQU
Investigator: Dr. Said Al-Busafi, Dept. Medicine, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications

CONFERENCE & SEMINAR PRESENTATIONS

Poster Presentations

International

The Department of Microbiology & Immunology continues to play an important role in teaching, research and community service. It contributes to the B.Sc. Health Sciences, M.D. (old and new curriculum), the B.Sc. Biomedical Sciences (BMS), B.Sc. Nursing, M.Sc. and Ph.D. programmes, and to the Oman Medical Specialty Board (OMSB) residents’ teaching and training programmes.

Microbiology research interests include basic molecular virology and microbiology, and the epidemiology of parasitic infections. The immunology research focuses on autoimmunity, immunity to hepatitis C virus infection and immunodeficiency, both primary and acquired, including HIV/AIDS. There is active international research cooperation between the Department and scientists in Austria, Canada, France, Germany, the UAE, the UK and the USA. The Department’s clinical divisions offer diagnostic services to SQU Hospital (SQUH) and other hospitals in Oman in the fields of bacteriology, virology, parasitology, mycology and immunology.
Staff

Head of Department
Norbert Nowotny, Professor

Faculty
Ali Al-Jabri, Professor
Mohammed Idris, Professor
Sharanjit Thukral, Professor
Muhammad Al-Kobaisi, Assistant Professor
Basil Nzeako, Assistant Professor
Crystal Koh, Assistant Professor
Elias Said, Assistant Professor
Akbar Rafay, Senior Consultant
Zakariya Al-Muhammadi, Senior Consultant
Khuloud Al-Ma’mari, Consultant
Badriya K. Al-Adawi, Senior Registrar
Fatma S. H. Ba’Alawi, Senior Registrar
Jalila S. R. Al-Shukaily, Senior Registrar
Munira Al-Siddiqui, Senior Registrar
Zaaima Al-Jabri, Clinical Instructor
Mohammed Al-Balushi, Research Associate

Support Staff

College
Sidqi Hassan, Superintendent
Khuloud Al-Rahbi, Senior Biomedical Scientist
Khazina Al-Harthy, Senior Biomedical Scientist
Zamzam Al-Bimani, Senior Biomedical Scientist
Situsekara Rajapakse, Senior Biomedical Scientist
Juma Al-Busaidi, Senior Biomedical Scientist
Amal Al-Hinai, Biomedical Scientist
Atika Al-Bimani, Biomedical Scientist
Zia-ul Q. Al Qureshi, Coordinator

Hospital
Masoud Al-Khayari, Chief Biomedical Scientist & Superintendent
Frank Serebour, Chief Biomedical Scientist
Robert Toki, Chief Biomedical Scientist
Said Al-Hinai, Chief Biomedical Scientist
Jacob George, Chief Biomedical Scientist
Intesar Al-Balushi, Chief Biomedical Scientist
Safiya Al-Harthy, Chief Biomedical Scientist
Marvin Enriquez, Chief Biomedical Scientist
Sam George, Senior Biomedical Scientist
Sabaz A. Khan, Senior Biomedical Scientist
Fathiya Al-Maskery, Senior Biomedical Scientist
Nasra Al-Harrasi, Senior Biomedical Scientist
Ruwaida Al-Lamki, Senior Biomedical Scientist
Amna Al-Balushi, Senior Biomedical Scientist
Sada Al-Harthy, Senior Biomedical Scientist
Sumayya Al-Hosni, Senior Biomedical Scientist
Ibrahim Kutty, Biomedical Scientist
Faiza Al-Naamani, Biomedical Scientist
Kiran Ali, Biomedical Scientist
Sahim Al-Ghafri, Biomedical Scientist
Issa Al-Samsami, Biomedical Scientist
Manawar Al-Quraini, Biomedical Scientist
Faiza Al-Mujaizy, Biomedical Scientist
Marwa Al-Hinai, Biomedical Scientist
Jawahr Al-Hinai, Biomedical Scientist
Ishraq A. Al-Kindi, Biomedical Scientist
Huda Al-Ghafri, Biomedical Scientist
Suad Al-Ubaidani, Biomedical Scientist
Ruqayyaa K. Al-Harrasi, Biomedical Scientist
Hafsa S. R. Al-Omairi, Biomedical Scientist
Najah M. Al-Lawati, Biomedical Scientist
Mohammed Al-Wahaibi, Clerk
Yousuf Al-Sabty, Coordinator
Highlights of the Year 2013

During the year 2013, the Department continued to support its faculty members. Drs. Badriya Khamis Al-Adawi, Fatma Ba‘alawi, Jalila Al-Shukaily and Khuloud Al-Ma‘mari completed their training abroad and returned to the Department, joining the Diagnostic laboratory, where they started to implement methods and tests which they had learnt abroad, thus broadening the Laboratory’s services. As a result, the number of tests performed by the laboratory staff increased significantly, as shown in Figure 1. A research (and financial) highlight of this year was a 166,000 OR research grant from The Research Council awarded to Dr. Mohammed Al-Balushi and colleagues on the causation of autoimmune inflammatory arthritis and other autoimmune diseases by cellular stress. The project will start in 2014. Also, the number of scientific papers in renowned international journals published in 2013 increased considerably compared to previous years.

Teaching Programmes

UNDERGRADUATE PROGRAMMES

Old Curriculum
The Department continued to offer its two main courses in the B.Sc. Health Sciences programme, namely Immunology and Microbiology, to the 3rd and 4th year medical students, respectively.

New Curriculum
The Department continued to contribute and play a vital role in the new curriculum that was initially implemented in 2009–2010. The Department participated in all semesters of Phase II which included 10 different modules of core and system courses.

B.Sc. Biomedical Sciences (BMS)
As in the previous years, the Department also contributed substantially to the B.Sc. BMS programme. Seven different courses were offered during 2013.

B.Sc. Nursing
The Department continued to offer a three-credit Microbiology and Immunology course that is taught to second year B.Sc. nursing students during the spring and fall semesters.

Clinical Programme (M.D. Programme)
As in the past years the 5th year clinical students attended the integrated lecture series and case-oriented learning offered by the Department. Each of the five groups of the 7th year medical students undertook a one-week laboratory rotation that covered all the clinical microbiology and immunology laboratory sections. The students of each group were assessed on the final day of each rotation.
Postgraduate Programmes
The Department participated in the training of some of the OMSB residents.

M.Sc. Programme
The Department continued to offer the Medical Microbiology programme for M.Sc. students in 2013. Four courses were taught in the M.Sc. programme.

Ph.D. Programme
The Department is also running an active international Ph.D. programme in all sub-disciplines of the Department.

Clinical & Diagnostic Services
The Department’s Microbiology & Immunology Diagnostic Laboratory, based at SQUH, continued to offer diagnostic services primarily to SQUH, but also to other government and private hospitals. The expansion in the diagnostic services in microbiology and immunology paralleled the increased inpatient and outpatient activity of SQUH. Although in 2013 a slight decrease in the number of diagnostic samples was noted, the number of tests performed rose substantially since a number of new tests were offered in 2013 for the first time to improve patient services. This was possible due to the return of several Omani clinical microbiologists and immunologists from their training abroad. However, the individual counting of tests which have been performed together (e.g., multiplex qPCR assays) also contributed statistically to the observed steep

Figure 1: Microbiology and immunology specimens/tests in 2003–2013.
increase of performed tests. Figure 1 shows the activity of the Diagnostic Laboratory during the past 10 years. It should be noted that the surge in the number of tests in 2009 and 2010 was due to the increased requests of influenza virus testing during the H1N1 outbreak.

External Quality Assurance
The Department continued to participate in the Royal College of Pathology of Australia External Quality Assurance Programme. According to these international standards, the diagnostic laboratories of the Department scored reasonably well.

Research
In 2013, members of the Department worked on six research projects. The main projects were on the genetic and immunological determinates of AIDS patients on HAART, and the molecular and functional characterisation of gene polymorphisms associated with inflammatory diseases.

RESEARCH PROJECTS
Factors leading to CD4 T-cell depletion in Omani HIV-infected patients who are immunologically non-responding to treatment


Investigators: Dr. Elias Said, Prof. Ali Al-Jabri, Dr. Sidgi Hasson, Dr. Mohamad Al-Balushi, Dr. Crystal Koh, Dept. Microbiology & Immunology, SQU; Dr. Abdullah Balkhair, Dept. Medicine, SQU.

Association of anti-phospholipids and other relevant autoantibodies with recurrent abortion in Omani women


Investigators: Dr. Mohammed Al-Balushi, Prof. Ali Al-Jabri, Dr. Sidgi Hasson, Dr. Elias Said, Dr. Crystal Koh, Dept. Microbiology & Immunology, SQU; Dr. Moza Al-Kalbani, Dr. Wadha Al-Ghafri, Dept. Obstetrics & Gynaecology, SQU.

TLR7/9 single nucleotide polymorphisms and their association with systemic lupus erythematosus (SLE) among Omani population

Code: MREC #627 Dates: 2013 Value: OR 1,600 Funder: SQU

Investigators: Dr. Crystal Koh, Dr. Elias Said, Prof. Ali Al-Jabri, Dr. Sidgi Hasson, Dr. Mohammed Al-Balushi, Dept. Microbiology & Immunology, SQU; Dr. Batool Hassan, Dept. Medicine, SQU.
Role of antigen presenting cells in liver damage and progression of liver disease due to hepatitis B and C infections

Code: MREC #742 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Elias Said, Dept. Microbiology & Immunology, SQU; Dr. Marwa Al-Riyami, Dept. Pathology, SQU.

Detection and characterization of extended spectrum beta lactamases in clinical isolates of *Escherichia coli* and *Klebsiella* pneumonia at Sultan Qaboos University Hospital

Code: MREC #787 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Prof. Sharanjit Thukral, Dept. Microbiology & Immunology, SQU.

Identification of metallo-beta-lactamases in clinical isolates of *Pseudomonas aeruginosa, Escherichia coli* and *Klebsiella* pneumonia at Sultan Qaboos University Hospital


Investigator: Prof. Sharanjit Thukral, Dept. Microbiology & Immunology, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


Books & Book Chapters
CONFERENCE & SEMINAR PRESENTATIONS

Poster Presentations

International
1. Al-Jabri AA, El-Beeli M. HLA-A68 and HLA-B15 Alleles are correlated with poor immune response to highly active antiretroviral therapy among Omani AIDS patients. 15th International Congress of Immunology, Milan, Italy, 22–27 Aug 2013. P4.03.03, P.186.


National


THESIS SUPERVISION

Student Name: Amal Gadallah
Qualification: Ph.D.
Title: Genetic and environmental factors influencing gametocytes production among asymptomatic Plasmodium falciparum carriers
Supervisors: Dr. Hamza Babiker and Prof. Mohamed A. Idris
Date of completion: On-going

Student Name: Fawziya Al-Yafei
Qualification: M.Sc. Medical Microbiology
Title: The association between SNPs in TLR4 and TLR7 and HIV pathogenesis
Supervisor: Dr. Elias Said
Date of completion: Jun 2013
<table>
<thead>
<tr>
<th>Student Name</th>
<th>Qualification</th>
<th>Title</th>
<th>Supervisors</th>
<th>Date of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asiya H. E. Al-Zadjali</td>
<td>M.Sc. Medical Microbiology</td>
<td>Detection and characterization of extended spectrum-lactamase enzymes in clinical isolates of <em>Escherichia coli</em> and <em>Klebsiella pneumoniae</em> at Sultan Qaboos University Hospital (SQUH)</td>
<td>Prof. Sharanjit S. Thukral</td>
<td>Dec 2013</td>
</tr>
<tr>
<td>Maryam S. Al-Adhoobi</td>
<td>M.Sc. Medical Microbiology</td>
<td>Prevalence of human enteric viruses in Oman</td>
<td>Dr. Muhannad F. M. Al-Kobaisi</td>
<td>On-going</td>
</tr>
<tr>
<td>Sara Al-Sumri</td>
<td>M.Sc. Medical Microbiology</td>
<td>Identification of Carbapenemases in clinical isolates of <em>Pseudomonas aeruginosa</em>, <em>Escherichia coli</em> and <em>Klebsiella pneumonia</em> at SQUH</td>
<td>Prof. Sharanjit S. Thukral and Dr. Badriya Al’Adawi</td>
<td>On-going</td>
</tr>
<tr>
<td>Samira Al-Mahrooqi</td>
<td>Ph.D. Medical Microbiology</td>
<td>Genetic determinants of AIDS patients’ variable response to HAART: insight into CCR5 genotypes</td>
<td>Prof. Ali Al-Jabri</td>
<td>On-going</td>
</tr>
</tbody>
</table>
Student Name: Iman Al-Risee
Qualification: M.Sc. Medical Microbiology
Title: Role of antigen presenting cells in liver damage and progression of liver disease due to hepatitis B and C infections.
Supervisors: Dr. Elias A. Said
Date of completion On-going

Student Name: Iman Al-Saidi
Qualification: M.Sc. Medical Microbiology
Title: Effect of sleep deprivation on the immune system
Supervisors: Dr. Elias A. Said
Date of completion On-going

The Department of Microbiology & Immunology was also involved in the training of a large number of undergraduate M.D. and B.Sc. BMS research students as well as international students on exchange research programmes.
The Nursing Directorate plays a vital role in patient care and work flow activities in Sultan Qaboos University Hospital (SQUH). Its focus is on developing and transforming the nursing workforce into a vital resource for an evolving healthcare system. This process is guided by the Directorate as well as SQUH’s vision to be the model of excellence in teaching, nursing practice, research and nursing leadership in Oman and beyond.

The bedrock upon which this philosophy rests is our commitment to provide care of outstanding quality for patients as well as for our external and internal clients. This is achieved through proven quality improvement methods and techniques such as data analysis, key performance indicators, peer-review audits, surveys, learning and teaching strategies and the continuous professional development of staff members.

We believe that in our pursuit for excellence we must not lose our core values as nurses. These values are embodied in the way we practice nursing. People, integrity, respect, confidentiality, compassion, commitment, team work, continuous improvement, excellence, innovation and creativity characterise our values. We are also a learning organisation and thus fully involved in teaching and training nurses, medical students, paramedical and support staff in order to put our values into practice.
Nursing plays a vital role within SQUH and our Directorate stands in solidarity with SQUH in meeting international standards and implementing evidence-based practices. This is an important time as SQUH is in the process of achieving the Accreditation Canada International (ACI) standards in order to continue to transform nursing into a vital resource for health. Evidence gathered from 2013 tells us we did well but we can do better. The Directorate uses data and evidence collected throughout the year to inform our strategic planning for continuous quality improvement and effective work force planning.

Staff

Deputy Director
Shinoona Al-Harthy, Acting Deputy Director

Administration
Aina Al-Riyami, Head of Section, Nursing Affairs
Yousuf Al-Hasani, Head of Section, Ambulatory Services (on scholarship)
Zayana Al-Maskari, Head of Section, Inpatient Areas (on unpaid leave)
Catherine Lausa, Acting Head of Section, Ambulatory Services
Daniel Birru, Acting Head of Section, Training & Professional Development
Huda Al-Awaisi, Acting Head of Section, Nursing Research
Fatma Al-Dhabbari, Nursing Quality & Special Projects
Parvi Ponambalam, Nursing Quality & Special Projects
Samira Al-Rasbi, Acting Head of Section, Clinical Nurse Specialist & Bed Flow Manager
Rahma Al-Mahrizi, Acting Head of Section, Inpatients Area
Afrah Al-Habsi, Coordinator
Fatiya Al-Tobi, Coordinator
Naema Al-Breiki, Coordinator
Zahra Al-Zedjali, Coordinator
Hilal Al-Zedjali, Messenger

Head Nurses - Inpatient Departments
Annette Shirto, Cardiothoracic/ Cardiology Ward
Noraini Yadi, General Medicine Female Ward
Koh C. Fong, Haematology/Oncology Female Ward
Mega M. Nor, General Medicine Male Ward
Bader Al-Mahrouqi, Haematology/Oncology Male Ward
Zaleha B. Zaman, Ophthalmology/ENT Male/Female Ward
Zairiyah Zainol, Special Nursing Ward
Sulaiman Al-Mahmoodi, General Surgery Male Ward
Yoong Yoong, General Surgery Female Ward
Sukhjit Singh, Psychiatry Ward

Head Nurses - Ambulatory Services
Warda Al-Lawati, Cardiac Catheterisation Lab.
Sapiah Abas, Day Care Unit
Haseena Saib, Operating Theatre/Recovery Room
Salim Al-Sudairi, Emergency Department
Nasser Al-Kharusi, Outpatient Department
Zuweina Al-Salami, Student Clinic
Sarala Kodamala, Family Med & Public Health Clinic
Ragunathan, Haemodialysis Unit
Judy Mathews, Oral Health Clinic
Brigitte Sam, Blood Bank
Arnold Buenafe, Adult Intensive Care Unit

Head Nurses - Maternal & Child Health Departments
Barbara Swales, Delivery Unit
Valsa Shelin, Neonatal Intensive and Special Care Unit
Suad Al-Bahri, Paediatric Day Care Unit & Paediatric Ward for Cardio./Neuro./Endo.
Nancy Reyes, Metabolic/ENT
Umi Hassanbasri, *Paediatric Ward for General Surgery/Immuno./Rheumo.*
Zuweina Al-Shabibi, *Orthopaedic & Neurology Ward*
Norah Ngcamu, *Paediatric Haematology/Oncology Ward*
Connie Lager, *Bone Marrow Transplant Unit*
Thavamony Saravanan, *Postnatal/Obstetric Ward*
Galie Pascua, *Gynaecology Ward*

**Highlights of the Year 2013**

One of the highlights for the Nursing Directorate in 2013 was a continued focus on achieving higher standards. As part of this effort, we invited Ms. Angela Horsley, a nursing expert from the UK, to evaluate our leadership strategies and all the nursing areas. She also conducted two workshops for the staff. Her feedback was positive with recommendations for improvements. Next, we had two visitors from Thailand, Ms. Kannika and Ms. Kanjanee, specialists in Outpatient Management. Their visit was valuable and helped us to implement strategies that address operational processes within the Outpatient Department (OPD).

One of the highlights of 2013 that nurses especially enjoyed was the International Nurses Day celebration “Meet and Greet” event where top management and nurse administrators went to all areas and greeted the nurses as a token of their appreciation.

This year also saw the first joint event between the Directorate and the Ministry of Health (MOH) when we debated “Professional Nursing and Midwifery License: Is it essential?” The debate was followed with great enthusiasm and SQUH came out as winners.

The building of the new Haematology Centre required collaborative commissioning work between the Directorate and various technical and engineering departments. We had the privilege of a visit from Ms. Marvelle Brown, an expert in bone marrow transplantation (BMT), who shared her experience with us.

There was a total of 1,213 nursing staff and 22 ward clerks in 2013.

**Events and Activities**

Events and activities organised by the Directorate in 2013 were as usual aimed at team-building, learning and professional development to help foster the employee motivation and engagement that is vital to work productivity.
Table 1: Other Nursing events and activities in 2013

<table>
<thead>
<tr>
<th>Activities</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Audit Peer Review Group formulated</td>
<td>January</td>
</tr>
<tr>
<td>Nursing Debate: SQUH versus MOH</td>
<td>January</td>
</tr>
<tr>
<td>Establishment of Diabetic Foot Ulcer Course for nurses</td>
<td>January</td>
</tr>
<tr>
<td>Staff Day out</td>
<td>February</td>
</tr>
<tr>
<td>Patient &amp; Family Education Open Day</td>
<td>February–December</td>
</tr>
<tr>
<td>First Recruitment trip to Tunisia for Midwives</td>
<td>March</td>
</tr>
<tr>
<td>Protected Mealtime - Patient Safety Initiative</td>
<td>March–July</td>
</tr>
<tr>
<td>Iftar gathering for nurses</td>
<td>July</td>
</tr>
<tr>
<td>140-hour Shift Survey</td>
<td>June–July</td>
</tr>
<tr>
<td>Formulation of inpatient transfer checklist as per SBAR</td>
<td>September–October</td>
</tr>
<tr>
<td>Cath. lab. functioning 5 days/week for cardiology cases</td>
<td>October</td>
</tr>
<tr>
<td>Accreditation Canada International mock survey took place in various wards/units</td>
<td>October</td>
</tr>
<tr>
<td>Nursing Department won 3rd Prize and Emergency Department won the 2nd Prize at Quality Open Day</td>
<td>November</td>
</tr>
<tr>
<td>Re-establishment of Discharge Planning and Transit Lounge</td>
<td>November</td>
</tr>
<tr>
<td>Quality Best Practice Audit</td>
<td>December</td>
</tr>
<tr>
<td>Nursing Food Fair</td>
<td>December</td>
</tr>
<tr>
<td>Revision of Nursing documents (90% completed)</td>
<td>January–December</td>
</tr>
</tbody>
</table>

QUALITY IMPROVEMENT ACTIVITIES

Patient flow
Table 2 demonstrates the continuous expansion of bed utilisation; this has a significant impact on the demands made on nurses and the Directorate [Table 2]. The increase in patient activity in medical wards has impacted the nursing workload, adding an extra burden on nurses. Many patients admitted in medical wards require high-dependency care and significant amounts of nursing
interventions. Therefore, evidence show that current staffing levels in medical wards require re-evaluation to achieve safe staffing levels [Figure 1].

Table 2: Patient flow in 2013

<table>
<thead>
<tr>
<th>Activity</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissions</td>
<td>32,525</td>
</tr>
<tr>
<td>Total visits in ambulatory areas</td>
<td>14,052</td>
</tr>
<tr>
<td>Discharges</td>
<td>28,937</td>
</tr>
<tr>
<td>Death</td>
<td>378</td>
</tr>
<tr>
<td>Total length of stay (in days)</td>
<td>127,021</td>
</tr>
<tr>
<td>Average length of stay (in days)</td>
<td>5</td>
</tr>
<tr>
<td>Bed occupancy rate %</td>
<td>74</td>
</tr>
</tbody>
</table>

**Key Performance Indicators**

A key performance indicator (KPI) is one type of performance measurement used in the Nursing Directorate. The Directorate uses these KPIs to evaluate the success of a particular activity for further quality improvement. There are six main indicators which are measured and monitored on a monthly basis and evaluated and analysed bi-annually: medication errors, falls, nurses satisfaction rate, patient satisfaction rate, nursing absenteeism and professional development opportunities.

Figure 1: Work load for Nursing in Intensive Care Unit, surgical, medical and paediatric wards.

*P = purple ward; B = blue ward; Y = yellow ward; R = red ward; PICU = Paediatric Intensive Care Unit; CICU = Cardiac Intensive Care Unit; NNL = Neonatal Intensive and Special Care Unit; ICU/CCU = Intensive Care Unit/ Critical Care Unit.*
Patient Satisfaction
The Directorate received 63% of compliments for Nursing Services rendered to patients *versus* 37% complaints. Most of the compliments were on the excellent nursing care given. In the complaints category, attitudes and behavior and communication were the two areas that needed the attention of the Directorate and a functional Committee was formed to tackle this.

Incident Reports
The highest number of incident reports in 2013 involved the mishandling of medical equipment, followed by falls and communication. In the category for "other" the volume for incident was significant and will require further root-cause analysis to mitigate the problems. Based on this data, the nursing coordinators have been given the task to monitor and analyse these reports and recommend corrective actions.

Staffing
The results of the nurses satisfaction survey are shown in Figure 4. An average of 8.45% of staff were on sick leave each month in 2013. A total of 37 staff (3.2%) left SQUH in 2013. Exit interviews were carried out for all staff to identify ways to improve staff retention and satisfaction. Among various reasons given for their resignation, 15 staff (40%) cited family reasons and 13 (35%) work overload.
Teaching Programmes
In 2013, Directorate staff from clinical areas actively participated in teaching nurses through the following courses in collaboration with the Directorate of Training & Continuing Professional Development (DTD): Chemotherapy; Nursing Assessment and Documentation; Intravenous Therapy.

Training Courses & CNE Activities
The Training & Staff Development Section in the Directorate planned, organised and conducted the following training and staff development activities for nursing staff and students in collaboration with the DTD, the College of Nursing at SQU and nursing institutions in and outside Oman: Wound Care Management, Diabetic Foot Ulcer & Pressure Ulcer; Vascular Access Device Course; Preceptor Course; Baby Friendly Hospital Initiative; Basic Life Support, and Advanced Cardiovascular Life Support.

Figure 3: Categories of incidents in 2013.
The following scheduled courses were also run with the number of staff attending shown in brackets: Basic Life Support (1,183); Intravenous Therapy (1,131); Fire Awareness (1,168); Hospital Orientation (1,065); Nursing Documentation (702); Lifting and Moving (764), and Fire Warden course (646).

A total of five nurses attended short courses in Oman and 15 nurses went on courses abroad (Canada - 4; UAE - 4; Saudi Arabia - 4; Kuwait - 2; UK - 1). Five nurses are currently on study scholarships abroad—one for a Ph.D. and five studying for a Master’s degree in Nursing.
Research

BOOKS & JOURNAL PUBLICATIONS

Journal Publications

Nursing Bulletin
The Nursing Newsletter, published bi-annually, covers all aspects of SQUH nursing activities such as departmental studies, conference, workshop and course attendance and any other activities undertaken internally or externally that involve nurses.

CONFERENCE & SEMINAR PRESENTATIONS

Seminar Presentations
National
3. Al-Dhabbari F. Key Performance Indicators. Ministry of Health & Institute of Health Sciences, Oman, 5 Feb 2103.
5. Al-Zidjali N. Outpatient Department Quality Improvement. SQUH Medical Advisory Board, Oman, 12 Nov 2013.

Poster Presentations
National
The Department of Nutrition & Dietetics has responsibilities in a range of areas including dietetic counselling to inpatients and outpatients, administration, health education and promotion through activities related to preventative medicine, and training. Several clinics are covered in both the adult and paediatric services. Adult clinics include diabetic, renal, obesity and gynaecology, whereas paediatric clinics include pre-term, haematology, metabolic, neurology, respiratory, general, endocrine and nephrology. The Department consists of two main divisions: Nutrition & Dietetics and Catering Administration.

**NUTRITION & DIETETICS**

Nutrition is the study of nutrients in food, how nutrients are used by the body, and the relationship between diet, health and disease. Nutritionists work mostly in food industries, media, health promotions, schools, sports or education. Dieticians, on the other hand, work mostly in hospitals; however, they can work in the community as health promoters and educators, as well as in sports or media. They assess the nutritional needs, diet restrictions and current health plans of hospital patients in order to develop and implement dietary management plans. They also educate patients on special diets as part of their medical treatment in areas such as: diabetes, oncology, renal and liver conditions, gastroenterology, paediatrics, food allergies, obesity and nutrition support.
CATERING ADMINISTRATION
The purpose of the catering administration service is to ensure a supply of safe, nutritious, well-presented food and to protect patients from contaminated, decomposed or injurious food. Continuous supervision and monitoring prevents the use of left-over foods and misleading labels. Further monitoring activities encourage healthier and safer food by better standards of quality control in receiving food products from suppliers, correct storage, food preparation, cooking and, finally, serving food to patients.

Staff
Head of Department
Salah Al-Shukaili
Deputy Head of Department
Majda Al-Maamary
Dietetics Staff
Shadya Al-Harthy, Senior Dietician
A’Shaima Al-Kindi, Senior Dietician
Ayda Al-Nabhani, Dietician
Fatma Al-Hashmi, Dietician
Salma Al-Mahrouqi, Dietician
Halima Al-Siyabi, Dietician
Amal H. Al-Adawi, Dietician
Hanan Al-Alawi, Dietician
Abeer Al-Saidi, Dietician

Catering Staff
Razeen Hameed, Catering Admin. Superintendent
Matar R. Al-Ruqaishi, Catering Supervisor
Thuraya Al-Abadi, Asst. Catering Supervisor

Coordinator
Ali Al-Farai

Highlights of the Year 2013
DIETETIC SERVICES
The Department ran a Nutrition Day at the SQU Hospital (SQUH). It also organised a one-day international cross-sectional audit in all types of wards, in association with the Medical University of Vienna, Austria. This was part of a worldwide cross-sectional multi-centre audit which aimed to generate a profile of the risks and levels of nutritional intervention for an individual unit/ward based on case-mix, structures and social environment.

In 2013, improvements were made to the Inborn Errors of Metabolism Dietetic services. Patient educational materials were also updated.

CATERING SERVICES
Departmental key performance indicators were developed in 2013. There was further improvement of the general catering services in 2013. The numbers of complaints were lower than in 2012. Weekly food safety meetings were conducted to ensure that food was prepared and delivered hygienically. Patient meal recipes were introduced and updated to focus on meals prepared specifically for the SQUH catering operation and based on special patient meal menus.

There was further work on designing a professional standard catering unit which will operate according to internationally recognised food safety standards, the ISO 22000:2005 hazard analysis and critical control points.
OTHER ACTIVITIES

During 2013, the Department participated in various patient and community activities. In January/February, the Department participated in the CF Family Day and the Thalassemia Patient Education Day; in April, in the Physiotherapy & Rehabilitation Week, the SQUH Health Education Day and the Chemotherapy Education Day. There was also participation in the following other events during the year: the Diagnostic Day at the Special Care Centre in Al-Khoud; the SQUH Quality Day; Open Day on Kidney Diseases, and in the Gulf Food Exhibition in Dubai.

Teaching Programmes

Teaching was provided for 5th year medical students; speech and language therapists specialising in geriatrics; nutrition students of the College of Agriculture & Marine Sciences, and SQUH medical staff.

Training Courses & CME Activities

The Department delivered nutrition and dietetics training programmes for different national organisations in Oman such as dieticians at the Ministry of Health and the Royal Court and catering personnel from different institutes, as well as an in-service training programme for diet clerks. It also conducted on-the-job training for SQU food science and nutrition students. In addition, the Department conducted on-going training for the Tawoos catering company staff with the aim of upgrading and enhancing their knowledge to ensure better final patient care.

The 3rd Oman Hospital Catering one-day Workshop was conducted by the Catering Unit in January. The Department actively participated in a workshop organised by the World Health Organization and the Ministry of Health from 1–5 December and made an effective presentation on 'Awareness of Food Safety/Hygiene practices in Hospital and Industrial Catering Operations'.

In association with the International Forum for Public Health (IFPH), London, UK, the Department conducted two intensive workshops on 'Dyslipidaemia and Cardioprotective Diet' and the 'Management and Treatment of Hypertension' on 3–4 April.

Finally, the Department coordinated and participated in the Baby & Infant Friendly Hospital Initiative Course.

Research

The Department is successfully continuing to conduct the World Wide Nutrition Day Research Project, supported by the European Society for Parenteral and Enteral Nutrition. The Patient Satisfaction survey continues to be conducted annually to identify patient needs and obtain patients’ suggestions and comments in order to improve the catering services.
CONFERENCES & SEMINAR PRESENTATIONS

Oral Presentations

International

National

Poster Presentations

National

Seminar Presentations

International

National
1. Al-Shukaili S. Professional Kitchen Design. 3rd Oman Hospital Catering Workshop, SQUH, Muscat, Oman, 5 Jan 2013.
The Department of Obstetrics and Gynaecology is one of the major departments in the College of Medicine & Health Sciences (COMHS) and Sultan Qaboos University Hospital (SQUH) involved in teaching undergraduates, postgraduates and other allied professionals. It produces trained leaders in women’s health as an academic subspecialty, for community practice or research. We take care of women of all age groups and believe that women are the nucleus of the family, the community and the nation. The goal of the Department is to provide excellent women’s healthcare through subspecialties in the Department like uro-gynaecology, infertility, endoscopic surgery, maternal fetal medicine and gynae-oncology. We value team work, intellectual curiosity, compassion and academic excellence. Our mission is to provide a structured educational environment in which dedicated teaching is integrated with graduated clinical responsibilities that promote intellectual growth in the operation room, delivery room, and inpatient and outpatient settings. Our undergraduate and postgraduate programmes train the students to provide comprehensive healthcare for women by applying an evidence-based approach to clinical management with a view to providing the best possible care to all our patients.
Staff

Acting Head of Department
Vaidyanathan Gowri, Associate Professor

Faculty
Adel Abu-Heija, Professor
Lamya Al-Kharusi, Senior Consultant & Deputy Head of Department
Mariam Mathew, Senior Consultant
Lovina Machado, Senior Consultant
Maha Al-Khaduri, Senior Consultant
Wadha Al-Ghafri, Senior Consultant
Tamima Al-Dughaishi, Senior Consultant
Mariam Al-Shukri, Senior Consultant
Nihal Al-Riyami, Consultant
Moza Al-Kalbani, Consultant
Rahma Al-Haddabi, Consultant
Shahila Tazneem, Senior Registrar
Durdana Khan, Senior Registrar
Aneeta Bai, Senior Registrar
Silja A. Pillai, Senior Registrar
Girija Shivarudraiah, Senior Registrar
Manjunath A. Palaksha, Senior Registrar
Majeda R. Al-Bash, Registrar
Hazel Gonsalves, Registrar
Hana Al-Sayed, Registrar
Asha Nair, Registrar
Jai Kumari, Registrar
Sunita Kumari, Registrar
Seema Zulfikar, Registrar
Sarya A. Bella, Registrar
Farah Fathih, Registrar
Ayesha Salahuddin, Senior House Officer
Mayesa T. Al-Din, Senior House Officer
Sara A. Zaid, Senior House Officer
Nooren Ishrat, Senior House Officer

Diya El-Hussain Omer, Senior House Officer
Suhaila Al-Wahaibi, Senior House Officer
Shahnaz B. Putul, Senior House Officer

Support Staff
Aisha A. Al-Musalami
Kawther S. Al-Abri
Philomena Sangameshwar

Highlights of the Year 2013

CONFERENCE AND WORKSHOPS

The Department organised the International Conference in Obstetrics & Gynecology from 3–6 December 2013. The emphasis of the conference was on presenting recent advances in the field of obstetrics and gynaecology and its subspecialties such as Maternal Fetal Medicine, Reproductive Endocrinology, Urogynaecology and Gynaec-Oncology. A total of 13 international speakers were invited from Canada, the UK, Brazil, Italy, Egypt, Saudi Arabia, Qatar and India. The total number of participants was 400 over the three days. The participants were doctors, nurses and medical students from all over Oman, Saudi Arabia and Australia and from various other nations. There were four pre-conference workshops: Hysteroscopy and Laparoscopy; Cardiotocography in Obstetrics; Obstetric Emergency Drills, and Fetal Echocardiography. The feedback was positive from the 120 people who participated in the four workshops.

The Department invited the urogynaecologist, Dr. Saeed Al-Sary, Assistant Professor at King Saud University for Medical Sciences, Saudi Arabia, to present a workshop on Urogynaecology and Reconstructive Pelvic Surgery from 1–5 March 2013. A
total of eight patients had advanced urogynaecological procedures during this period. The main emphasis was on the surgical management of vaginal vault prolapse. In addition, Dr. Saeed demonstrated modified techniques for vaginal vault suspension with uterine preservation. The highlight of the workshop was that for the first time at Sultan Qaboos University a series of laparoscopic sacrocolpopexies and sacrospinous vault suspensions were carried out. In addition, a modified technique of uterine suspension with uterine preservation was carried out. During the surgical procedure, the teaching highlighted the relevant anatomical landmarks, surgical techniques and variations of technique.

The Department also organised a second workshop, Advanced Urogynecology and Pelvic Floor Reconstructive Surgery. The visitor this time was Prof. Ganesh from Coimbatore, India, invited by Dr. Lamya Al-Kharusi, Deputy Head of the Department. Prof. Ganesh did several operations in Gynaecology such as urethral reconstruction and his expertise was well appreciated. A half-day symposium on Urogynaecology was conducted in collaboration with the urologists, and Prof. Ganesh was one of the speakers along with Dr. Lamya and others.

Finally, the Department organised a hands-on ultrasound course for 12 doctors. The members of the training team were Dr. Maryam Al-Shukri, Dr. Tamima Al-Dughaishi and Dr. Lovina Machado.

Teaching Programmes

UNDERGRADUATE CLINICAL PROGRAMME

Pre-Clerkship Programme
There are about 120 students in the Pre-clerkship phase. They are taught weekly for 9 weeks on such topics as common symptoms during antenatal history-taking, as well as the demonstration of mannikins; a review of reproductive anatomy; common symptoms and signs in obstetrics and gynaecology, such as menstrual dysfunction; infertility; menopause; early pregnancy problems; antepartum and postpartum haemorrhage and normal delivery. A mini-clinical evaluation exercise (mini-CEX) is conducted at the end of each week for the students.

Old Curriculum - 7th Year Medical Students
There were about 120 students in the 7th year who rotated in the Department from July 2012 to June 2013. They rotated for 7 weeks and had a week of lectures followed by clinical rotation in three sites (SQUH, Royal Hospital and Khoula Hospital). There was an overlap of Senior Clerkship and 7th year medical students for six months from January to June 2013. The last group of old curriculum 7th year students finished their final M.D. in June 2013 and there were no failures.
Senior Clerkship Programme
The Senior Clerkship students started in January 2013 and their rotation finished in January 2014. There were about 115 students. Their clerkship lasted 13 weeks: eight weeks in obstetrics and gynaecology, three weeks in Child Health, and two weeks in laboratories. The first two weeks of the obstetrics and gynaecology rotation consists of lectures and posting in the skills laboratory/simulation centre. After that they rotate for six weeks in three different sites, SQUH, Royal Hospital and Khoula Hospital. They have five in-course assessments including two mini-CEXs, one case-based discussion, one observed long case and one key feature question. At the end of the year they are assessed in blocks with a written component of multiple choice questions, extended matching questions and short answer questions with a blueprint, as well as an objective structured clinical examination (OSCE) for the whole Senior Clerkship rotation. There were four obstetrics and gynaecology questions in the OSCE.

POSTGRADUATE PROGRAMME
Oman Medical Specialty Board Residency Programme
Residents from the Oman Medical Specialty Board (OMSB) rotate in the Department. Both Junior (years 1 to 3) and Senior Residents are posted in the Department in the teams, wards and outpatient departments (OPDs). They are assessed every four weeks. The residents are also posted in the ultrasound clinic and research blocks. A site supervisor assesses them every four weeks. The Chair of the Obstetrics & Gynaecology Programme is Dr. Lamya Al-Kharusi, while Dr. Wadha Al-Ghafri is the Programme Director. Eight faculty from the Department are members of the Obstetrics & Gynaecology Scientific Committee and they are also members of various subcommittees.

International Students
In 2013, the Department received three international elective students: two from the USA and one from Sweden; they gave a good feedback on their training here. There were also three clinical attachées and two interns from Yemen during 2013.

Training Courses & CME Activities
The Department has a daily morning meeting that includes discussion of the emergencies of the previous day, handover and important announcements from the College and Hospital. The CME programme consists of a monthly Journal Club; a pathology round once every 2–3 months; a monthly multidisciplinary Fetal Anomaly Group meeting attended by staff of the Neonatal Intensive Care Unit (NICU), the Department of Genetics and paediatric surgeons; weekly residents’ presentations; weekly intern presentations; a weekly CME session aimed at senior house officers and registrars; a weekly inter-departmental meeting between the Department and the NICU, and a monthly departmental meeting attended by all departmental staff, midwives and OPD nurses as needed.
Clinical & Diagnostic Services

Table 1: Gynaecology Outpatient Department patient statistics in 2013

<table>
<thead>
<tr>
<th>Patient category</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>General OPD visits</td>
<td>16,996</td>
</tr>
<tr>
<td>Antenatal</td>
<td>9,285</td>
</tr>
<tr>
<td>Gynaecological</td>
<td>6,030</td>
</tr>
<tr>
<td>Postnatal</td>
<td>74</td>
</tr>
<tr>
<td>Infertility Clinic</td>
<td>1605</td>
</tr>
<tr>
<td>Diabetics Clinic</td>
<td>600</td>
</tr>
<tr>
<td>Urogynaecology Clinic</td>
<td>392</td>
</tr>
<tr>
<td>Colposcopy Clinic</td>
<td>63</td>
</tr>
<tr>
<td>Intrauterine Growth Restriction Clinic</td>
<td>50</td>
</tr>
<tr>
<td>Fetal Maternal Clinic</td>
<td>283</td>
</tr>
<tr>
<td>Amniocentesis Clinic</td>
<td>13</td>
</tr>
<tr>
<td>Recurrent abortion</td>
<td>172</td>
</tr>
<tr>
<td>Oncology</td>
<td>176</td>
</tr>
<tr>
<td>Adolescents</td>
<td>18</td>
</tr>
<tr>
<td>Combined infertility</td>
<td>132</td>
</tr>
</tbody>
</table>

Table 2: Obstetrics & Gynaecology Department procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasound scans</td>
<td>4,017</td>
</tr>
<tr>
<td>Mirena insertion (intrauterine device)</td>
<td>52</td>
</tr>
<tr>
<td>Phlebotomy</td>
<td>11,883</td>
</tr>
<tr>
<td>Hydrosonography</td>
<td>36</td>
</tr>
<tr>
<td>Endometrial biopsy</td>
<td>132</td>
</tr>
<tr>
<td>Bartholin abscess incision</td>
<td>1</td>
</tr>
<tr>
<td>Non-stress test</td>
<td>1,842</td>
</tr>
<tr>
<td>Bladder scans</td>
<td>91</td>
</tr>
<tr>
<td>Uro-flowmetry</td>
<td>79</td>
</tr>
</tbody>
</table>
In the Labour Ward from January 2013 to December 2013, a total of 5,733 patients were seen (1,373 day cases and 4,360 admissions). The total number of deliveries was 3,812, of which 2,916 were vaginal deliveries; 136 were instrumental vaginal deliveries; 558 were emergency Caesarean sections, and 202 were elective Caesarean sections.

We had a total of 3,825 admissions in the Red 2 Ward (mainly postnatal). Of these, 1,489 patients who delivered were booked via the antenatal clinic and 2,336 were un-booked cases. The total number of gynaecology patients admitted in Yellow 2 Ward was 3,130; of these 1,428 were new cases and 1,691 were old cases, with 11 cases from other departments. The total number of antenatal patients admitted to Yellow 2 Ward were 1,774; 546 were postnatal and 1,228 were gynaecological patients.

Research

RESEARCH PROJECTS

Retrospective cohort study of the prevalence and outcome of urinary tract infection during pregnancy in SQUH

Code: MREC #676 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigators: Dr. Mariyam Al-Shukri, Dr. Faiza Al-Darmaii, Dr. Tamima Al-Dughaishi, Dept. Obstetrics & Gynaecology, SQU.

Peer review audit on caesarean section: Morbidity and indications

Code: MREC #677 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigators: Dr. V. Gowri, Dr. Silja Arumugam, Dept. Obstetrics & Gynaecology, SQU.

Pregnancy outcome in advanced maternal age (40 years or older) in a tertiary care center (Sultan Qaboos University Hospital) in Oman

Code: MREC #737 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigators: Dr. Mariyam Al-Shukri, Dr. V. Gowri, Ibtihal Al-Kindii (student), Balqees Al-Mahrizi (student), Dept. Obstetrics & Gynaecology, SQU.

Evaluation of diagnostic ability of novel techniques in endometrial biopsy

Code: MREC #739 Dates: 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Maha Al-Khaduri, Dept. Obstetrics & Gynaecology, SQU.
Major etiological factors of infertility and treatment outcomes in infertile couples attending Sultan Qaboos University Hospital, Oman

Code: MREC #747  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. V. Gowri, Sara Al-Rasbi (student), Aseel Al-Rashdi (student), Dept. Obstetrics & Gynaecology, SQU.

Attitudes towards oocyte cryopreservation among women of reproductive age in Oman

Code: MREC #782  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Maha Al-Khaduri, Dept. Obstetrics & Gynaecology, SQU.

Association of young maternal age with reproduction outcomes

Code: MREC #802  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Rahma Al-Haddabi, Dept. Obstetrics & Gynaecology, SQU.

Prevalence and outcomes of teenage pregnancy in Oman

Code: MREC #803  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. Rahma Al-Haddabi, Dr. Majeda Al-Bash, Najla Al-Maqbali (student), Dept. Obstetrics & Gynaecology, SQU.

Retrospective analysis of the demographic maternal characteristics and perinatal/neonatal outcomes of all RH negative pregnant women with alloimmunization who managed at SQUH from Jan 2008 to Dec 2012

Code: MREC #810  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. Tamima Al-Dughaishi, Maymoona Al-Duhul (student), Yusra Al-Harrasi (student), Dept. Obstetrics & Gynaecology, SQU.

Prevalence and demographic maternal characteristics of minor RBC alloimmunization in Omani pregnant women at SQUH: 5 year retrospective study

Code: MREC #823  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. Tamima Al-Dughaishi, Dr. Ikhlass Al-Rubkhi, Dept. Obstetrics & Gynaecology, SQU.

A study of the prevalence of postnatal depression (PND) in the Sultanate of Oman and the validation of appropriate screening

Code: MREC #831  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. V. Gowri, Dr. Nawal Al-Maamari (resident), Dept. Obstetrics & Gynaecology, SQU; Prof. Samir Al-Adawi, Dept. Behavioural Medicine, SQU.
Cord blood C-peptide level and neonatal outcome in relation to maternal hemoglobin A c in last trimester of pregnancy

Code: MREC #845  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Dr. Maryam Mathew, Dept. Obstetrics & Gynaecology, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International

National
3. Al-Riyami N. Role of cerclage in twins and triplet pregnancies. 1st International Conference on Advances in Obstetrics & Gynecology, SQU, Muscat, Oman, 4–6 Dec 2013.
5. Al-Khaduri M. Regulating infertility treatment. 1st International Conference on Advances in Obstetrics & Gynecology, SQU, Muscat, Oman, 4–6 Dec 2013.

Poster Presentations

International


National


8. Machado L, Saleh J, Rizvi Z. 2-hour postload serum glucose levels and maternal blood pressure as independent predictors of birth weight in “appropriate for gestational age” neonates in healthy non-diabetic pregnancies. 1st International Conference on Advances in Obstetrics & Gynecology, SQU, Muscat, Oman, 4–6 Dec 2013.


Seminar Presentations

National


3. Al-Riyami N. Recent advances on the management of IUGR. Obstetric Ultrasound Workshop, Royal Hospital, Oman, 4–5 Oct 2013.


5. Gowri V. Communication in emergency obstetrics. Rustaq Intrapartum Updates, Rustaq Hospital, Oman, 5 Oct 2013.


The Department of Ophthalmology at the Sultan Qaboos University Hospital (SQUH) is a tertiary level eye-care centre and continues to be a recognised leader in providing an advanced level of patient care, teaching and research in ophthalmology in Oman.

Fully equipped with state of art diagnostic and therapeutic tools, the Department offers the best in ophthalmic subspecialty services. Besides managing routine eye problems, we also have the capability to treat patients with complicated eye diseases. We offer our patients the latest in intraocular lens (IOL) technology, including ResTOR and Toric IOLs for astigmatism correction capacity. Advanced vitreo-retinal procedures are performed by experienced surgeons in the Department.

The Paediatric Ophthalmology Unit has grown over the years to be a major referral centre in the country for paediatric eye disorders. Besides expertise in various facets of paediatric eye diseases including retinopathy of prematurity, the Unit also caters to patients with strabismus (ocular misalignment) and ocular genetic disorders.

The Department is now running a fully-fledged visual electrodiagnostic service—the only one in the entire country. Oculoplastic procedures with both functional and cosmetic significance are routinely performed by experts in the Department.
Neuro-ophthalmic expertise was added to the Department in the last year. In collaboration with neurologists, we run a Botox clinic. The Department continues to be actively involved in research, teaching and training.

Staff

Head of Department
Nadiya Al-Kharousi, Senior Consultant

Faculty
Ahmed Al-Hinai, Senior Consultant, Vitreoretinal Surgeon
Sana Al-Zuhaibi, Senior Consultant, Paediatric Ophthalmology Unit
Abdullah Al-Mujaini, Senior Consultant, Oculoplasty Surgeon
Anuradha Ganesh, Consultant, Paediatric Ophthalmology Unit
Mohammed Al-Abri, Consultant, Vitreoretinal Surgeon
Upender Wali, Senior Registrar
Archana Thakral, Senior Registrar
Nawal Al-Fadhil, Senior Registrar
Buthaina S. Al-Sabt, Senior Registrar
Aisha Al-Busaidi, Senior Registrar
Shahab Agha, Registrar
Sitara Azeem, Registrar
Rana Al-Senawi, Registrar
Samia Al-Jabri, Registrar
Beena Harikrisna, Registrar
Dalal Al-Zahra, Registrar
Nouf H. Al-Farsi, Registrar
Tysser A. R. Basi, Senior House Officer

Support Staff (College)
Laila Al-Kindi, Coordinator

Support Staff (Outpatient Department)
Mangu Thomas, Staff Nurse, Adult Team
Priya Khora, Staff Nurse, Paediatric Team
Habiba Al-Belushi, Chief Technician
Bushra Al-Jabri, Optometrist
Sreelatha O. K., Optometrist
Edgardo Go, Optometrist
Vidya Thomas, Optometrist, Paediatric Team
Salim Al-Abri, Senior Technician
Raya Al-Mughery, Senior Technician
Sadika Al-Ajmi, Senior Technician
Harith Al-Hasani, Technician
Hanan Al-Harty, Technician
Eman Al-Hasmi, Technician
Iman Al-Harthi, Technician
Melinda Manegdeg, Coordinator

Support Staff (4 Blue Ward)
Zaleha Bzaman, Senior Charge Nurse
Shirley Angsa, Senior Charge Nurse
Idawati Puteri, In-Charge Nurse 5
Marylin Dagle, In-Charge Nurse 5
Alice Abraham, In-Charge Nurse 6
Remedios Ganibe, Staff Nurse 1
Fahima Julandani, Staff Nurse 1
Shafila Beevi, Staff Nurse 1
Bindhu P. Ravi, Staff Nurse 1
Jessy Jose, Staff Nurse 1
Sherly Varghese, Staff Nurse 1
Jincy Gheevarghese, Staff Nurse 1
Fatma Al-Maskari, Staff Nurse 1
Rahma Al-Hadhrami, Staff Nurse 1
Minna Sunny V. I. P., Staff Nurse 1
Bindu Biju, Staff Nurse 2
Highlights of the Year 2013
The Joint International Ophthalmological Conference was held in Muscat between 12–14 December 2013. It was organised by the Oman Ophthalmic Society and SQU in collaboration with the German Ophthalmological Society. The Department participated by making 12 presentations.

Prof. Gerd Holmström, a paediatric ophthalmologist from Uppsala University, Sweden, with around 55 peer-reviewed scientific publications, visited the Department to share his knowledge and experience in order to improve the scope of the Department’s work and research. During the visit, Prof. Holmström gave a lecture on advances in the management of retinopathy of prematurity (ROP). He also participated in the Oman Joint International Ophthalmological Conference where he presented a lecture on the recent advances in the screening and treatment of ROP.

In 2013, three ophthalmologists came to the Department for clinical attachments.

Teaching Programmes

UNDERGRADUATE CLINICAL PROGRAMME
The main objective of the course run by the Department is to introduce students to ophthalmology as a branch of surgery and to provide them with core information which will allow them to recognise, diagnose and manage common diseases of the eye and the adnexa. Particular emphasis is laid on awareness of the most frequent blinding diseases and the largely preventable and curable maladies of the eye such as cataract, glaucoma, trachoma, diabetic retinopathy, trauma and congenital anomalies.

The residency programme in ophthalmology was launched in 2009 under the umbrella of the Oman Medical Specialty Board (OMSB). A total of 14 residents have been accepted in the Department. The most import-
tant courses offered to residents are: Pediatric Ophthalmology; Corneal External Disease; Retinal Diseases; Optics and Refraction; Neuro-Ophthalmology; Glaucoma; Cataract; Oculoplastic procedures; Uveitis, and Phacoemulsification.

In the Pre-clerkship programme, the Department teaches new modules to 12–14 students per session for two days a week, nine weeks a year followed by a clinical examination. Students are exposed to different clinical cases in the eye clinic and encouraged to examine and present the case. They also need to keep a record of clinical and practical skills learned during their rotation both in log books and in the student electronic patient record.

In the Junior Clerkship program, students are divided in two groups, spending seven days in SQU Hospital and eight days at Al-Nahda Hospital, Muscat. During the first half of their rotation they have presentations on: red eye, trauma, visual loss, diplopia and pupillary reaction. In the second half, students rotate again; by then they should have completed these five modules and only necessary revisions are made.

Training Courses & CME Activities
A total of 65 CME courses were run by Departmental staff in 2013 as follows:

1. Case Presentation
2. Laser Photocoagulation
3. Retina Teaching – Macular table
4. Oculo Plastic Lecture
5. Electroretinogram
6. Retina Teaching
7. Quiz I
8. Quiz I (continued)
9. Quiz II
10. Ocular Manifestations of Leukaemia
11. Sebaceous Gland Carcinoma
12. Diabetic Macular Oedema – Update
13. Intraorbital Foreign Body
14. Advances in Surgical Treatment of Keratoconous
15. Ophthalmic Echography
16. Discharge Summary Audit
17. Fundus Fluorescein Angiography, Visual Acuity and Autofluorescence Case Presentation
18. Multiple Cranial Neurophthlmitis
19. Spectoral Domain Optical Coherence Tomography (OCT)
20. Ophthalmic Echography II: Examination and Techniques
21. Case Presentation
22. Optic Nueritis in Children
23. Papilloedema – Case Presentation
24. Posterior Segment Imaging
25. Esotropia – Case Presentation
26. Unilatheral Ptosis
27. Endophthalmitis Neonatal Sepsis
28. Case Presentation
29. Air Bags and Eye Injury
30. Purtscher's Retinopathy
31. Symblepharon
32. Azarga, Alcon Company
33. Ptosis
34. Central Serous Retinopathy – Case Presentation
Clinical & Diagnostic Services
In 2013 the total number of adult inpatients was 468. There were 61 paediatric inpatients.

**Table 1:** Ophthalmology Outpatient Department statistics in 2013

<table>
<thead>
<tr>
<th>Category</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients booked</td>
<td>11,062</td>
</tr>
<tr>
<td>Patients seen</td>
<td>13,877</td>
</tr>
<tr>
<td>Patients admitted</td>
<td>662</td>
</tr>
<tr>
<td>Missed appointments</td>
<td>1,821</td>
</tr>
<tr>
<td>Patients discharged</td>
<td>413</td>
</tr>
<tr>
<td>Patients for prescription only</td>
<td>1,555</td>
</tr>
<tr>
<td>Total</td>
<td>29,390</td>
</tr>
</tbody>
</table>

**Table 2:** Minor outpatient procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor operation</td>
<td>423</td>
</tr>
<tr>
<td>Blood extraction</td>
<td>489</td>
</tr>
<tr>
<td>Sedation</td>
<td>59</td>
</tr>
<tr>
<td>Cannulation</td>
<td>140</td>
</tr>
<tr>
<td>Dilatation</td>
<td>6,458</td>
</tr>
<tr>
<td>Other</td>
<td>346</td>
</tr>
<tr>
<td>Total</td>
<td>7,915</td>
</tr>
</tbody>
</table>
Table 3: Laser procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argon</td>
<td>171</td>
</tr>
<tr>
<td>YAG</td>
<td>33</td>
</tr>
<tr>
<td>Photodynamic therapy</td>
<td>2</td>
</tr>
<tr>
<td>Avastin and lucentis injections</td>
<td>265</td>
</tr>
<tr>
<td>Fundus fluorescein angiography</td>
<td>146</td>
</tr>
<tr>
<td>Diabetic screening</td>
<td>430</td>
</tr>
<tr>
<td>Contact lens</td>
<td>58</td>
</tr>
<tr>
<td>Low vision service</td>
<td>10</td>
</tr>
<tr>
<td>Electroretinogram and visual evoked-potential</td>
<td>129</td>
</tr>
<tr>
<td>Orthoptic</td>
<td>328</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,567</td>
</tr>
</tbody>
</table>

Table 4: Technical procedures in 2013

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refraction</td>
<td>12,111</td>
</tr>
<tr>
<td>Ultrasound</td>
<td>304</td>
</tr>
<tr>
<td>Pachymetry</td>
<td>131</td>
</tr>
<tr>
<td>Visual field</td>
<td>454</td>
</tr>
<tr>
<td>Optical coherence tomography</td>
<td>1,962</td>
</tr>
<tr>
<td>Confoscan</td>
<td>10</td>
</tr>
<tr>
<td>Orbscan</td>
<td>123</td>
</tr>
<tr>
<td>Photo</td>
<td>637</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>27,843</td>
</tr>
</tbody>
</table>

Table 5: Main Theatre surgeries in 2013

<table>
<thead>
<tr>
<th>Major</th>
<th>Intermediate</th>
<th>Minor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research

In addition to the projects listed below, departmental staff worked on the following topics of research: Cycloplegic effect of atropine versus cyclopentolate in patients with accommodative esotropia; Effectiveness of different surgical modalities on treating cicatrical entropion in Oman; Full thickness tarsal fracture versus partial thickness (grooving technique); Eyelash resection using eyelid skin approach versus grey line approach, and Ocular manifestations in thalassaemic patients of SQUH. The following three projects were OMSB research projects: The comparison of cyclopentolate plus tropicamide versus atropine in patients with refractive accommodative esotropia by means of retinoscopy; Macular cysts in retinal dystrophy, and Electoretinography changes in Omani thalassaemic patients.
RESEARCH PROJECTS

Clinical and molecular characterization of mucolipidosis-IV in patients from Oman

Code: MREC #723  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Anuradha Ganesh, Dept. Ophthalmology, SQU.

Practice and teaching of medical ethics in a tertiary hospital in Oman

Code: MREC #728  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Anuradha Ganesh, Dept. Ophthalmology, SQU.

An observational, multi-center, open, study assessing the efficacy and safety of lucentis (ranibizumab intravitreal injections) in patients with visual impairment due to macular edema secondary to retinal vein occlusion (RVO)

Investigator: Dr. Ahmed Al-Hinai, Dept. Ophthalmology, SQU.

Utilizing ranibizumab intravitreal injection in a real-world setting in diabetic macular oedema (UN-VEIL DME)

Code: MREC #730  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Mohammed Al-Abri, Dept. Ophthalmology, SQU.

Variation and association of smoking habit in pterygium amongst Omani population

Code: MREC #772  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Upender Wali, Dept. Ophthalmology, SQU.

Research Publications & Books

Journal Publications


Books & Book Chapters

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International

National
The Oral Health Department provides dental, oral and maxillofacial services for the Sultan Qaboos University community, hospital inpatients and referred outpatients. It also acts as a tertiary centre of referrals for oral and maxillofacial surgery and paediatric dentistry. The Department provides dental services including basic primary dental care, oral hygiene therapy, restorative, endodontic, as well as comprehensive paediatric dentistry, orthodontics and oral and maxillofacial surgery treatments.

The Department is also a member of the trauma team of Sultan Qaboos University Hospital (SQUH) and is therefore, actively involved in the treatment of patients with facial injuries including the repair of facial bone fractures. In addition, the Department is also heavily involved in the diagnosis and treatment of a wide range of medically-compromised patients including those with haematological malignancies, sickle cell anaemias and bleeding disorders. The dental services are provided at the Department’s outpatient clinic or in the operating theatre for the inpatients or day care visitors.
Staff

Head of Department
Salim Al-Sudairy, Consultant, Oral & Maxillofacial Surgeon

Deputy Head of Department
Abdulaziz Bakathir, Senior Consultant, Oral & Maxillofacial Surgeon

Faculty
Amur Al-Hajri, Consultant
Ali Al-Mullahi, Consultant, Paediatric Dentist
Muntasar Al-Hinai, Consultant, Orthodontist
Awatif Al-Maskery, Senior Registrar
Sameera Al-Anqoodi, Senior Registrar in Restorative Dentistry (on study leave)
Hana Al-Raisi, Registrar
Rasha Ahmed, Senior House Officer
Madelin Hernandaz, Senior House Officer
Mehboob Pasha, Senior House Officer
Aftab Malik, Senior House Officer

Other Medical Staff
Nasriya Al-Harthy, Dental Hygienist/Therapist
Zahra Al-Ghafri, Dental Hygienist
Judy Mathew, In-Charge Nurse
Lovely Kuriakose, Senior Nurse
Ibrahim Al-Shizawi, Medical Nurse
Ibtisam Al-Ambusaidi, Medical Nurse
Blankaji Ouseph, Medical Nurse
Afrah Abdulbaqi, Dental Surgery Assistant
Sulaiman Al-Maqimi, Dental Surgery Assistant
Mohammed Al-Alawi, Dental Surgery Assistant
Khamis Al-Mufargi, Dental Laboratory Technician
Sarah Al-Siyabi, Dental Surgery Assistant

Support Staff
Fatma Al-Siyabi, Central Sterile Supplies Dept. Technician
Nasra Al-Habsi, Medical Orderly (CSSD)
Khaled S. Al-Mahrizi, Medical Orderly
Nadia Al-Ghafri, Coordinator

Highlights of the Year 2013
The Department maintained a high standard of dental care to patients and continued to improve and expand its services with the aim of enhancing the services for the increasing number of patients seen and treated at the Department. In addition, the Department provided continuous support to the expanding and specialised medical and surgical units of SQUH and continued to play an important role in the holistic multidisciplinary care of SQUH patients.

The Department’s clinical staff were actively involved in local scientific events and dental conferences conducted by the Ministry of Health in 2013. Staff of the Department attended the Oman International Dental Conference held in Muscat in early February 2013. Dr. Abdulaziz Bakathir and Dr. Muntasar Al-Hinai presented scientific papers at the Oman International Dental Conference and at the South Sharqiya 1st Dental Conference held in Sur on 18 April 2013. Furthermore, Dr. Abdulaziz Bakathir presented one scientific paper and a poster at the 21st International Conference on Oral & Maxillofacial Surgery held in Barcelona, Spain, 21–24 October 2013.

In 2013, Department continued with the production of a series of educational leaflets for patients
covering a range of dental and oral surgery conditions. This work was done by the Department’s dental hygienist, Ms. Zahra Al-Ghafari.

Teaching Programmes
The Oral Health Department continues to provide teaching support to M.D. degree students at the SQU College of Medicine & Health Sciences (COMHS), Ministry of Health (MOH) and the Institute of Health Sciences of the MOH. This included: 1) Pre-clerkship and Junior Clerkship teaching of M.D. students at the COMHS; 2) Clinical training of the internship dentists from the MOH; 3) Teaching of dental surgery assistance (DSA) students at the Institute of Health Sciences, MOH; and 4) Daily clinical teaching to the DSA students during their oral health rotations.

Clinical & Diagnostic Services
The Department continued to provide primary dental treatment as well as specialised comprehensive paediatric dentistry, orthodontic, craniofacial anomalies and oral and maxillofacial surgical treatments. The number of patients treated in Department increased by 1,176 patients in 2013 compared to 2012, with an 8.5% increase in the total number of patients attending the outpatient clinic in 2013 compared to a 5% increase in 2012. This rise is a reflection of the increase in the number of referrals for specialised paediatric, orthodontic and maxillofacial care from various hospital departments as well as from other regional hospitals and local

![Figure 1: Number of outpatients treated at the Oral Health Department from 2011–2013.](image)
health centres. It is also a reflection of the good quality and specialised standard of healthcare offered by the Department.

In 2013, the Department also recorded an increased number of complex medically-compromised cases admitted for dental and oral and maxillofacial surgery treatments. Furthermore, there was also a 6% increase in inpatient admissions for oral and maxillofacial surgery compared to 2013. The Department continued to be actively involved in the SQUH 24-hour on-call service in collaboration with the Emergency Department.

Research

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International


National


Poster presentations

International

The Department of Pathology is fully committed to the College of Medicine & Health Sciences' (COMHS) and Sultan Qaboos University Hospital's (SQUH) mission of teaching, research and patient service.

The Department’s teaching mandate includes the M.D. (new and old curricula) and the B.Sc. Biomedical Sciences (BMS) programmes. It also participates in the Oman Medical Specialty Board (OMSB) Residency programme in Histopathology and other medical specialties. The postgraduate training programme is approved for Part I (FRCPath) of the Fellowship of the Royal College of Pathologists examination. The Department is sought after to run student workshops and to provide training in specialised histopathology techniques and electron microscopy for health professionals from Oman and abroad.

The Department provides specialist diagnostic services in histopathology, cytopathology, enzyme and immunohistochemistry, fluorescent microscopy and electron microscopy to SQUH. The Department is registered and subscribes to international external quality assurance programmes (EQA) in anatomic pathology, cytopathology and immunohistochemistry including both diagnostic and technical modules.
The Department is actively engaged in research in collaboration with other clinical departments of SQUH and other colleges of SQU. Several funded and unfunded research projects were initiated in 2013. The electron microscopy unit, in particular, undertakes many research projects with other colleges within SQU as well as other institutions.

With a total of three academic and six senior clinical faculty members and 24 biomedical scientists, it functions as a major referral centre for many of the Ministry of Health (MOH) hospitals, the Armed Forces Hospital (AFH), the Royal Oman Police Hospital (ROPH) as well as some of the private hospitals in the country. The junior staff includes three registrars and two senior house officers. Two of them are in the OMSB residency programme.

Staff

Head of Department
Anand Date, Professor (until Mar 2013)
Ritu Lakhtakia, Associate Professor (from Mar 2013)

Acting Deputy Head of Department
Ibrahim Al-Haddabi, Clinical Affairs

Faculty
Aisha Al-Hamadani, Senior Consultant
P. A. M. Saparamadu, Consultant
Marwa Al-Riyami, Consultant
Asim Qureshi, Consultant
Shadia Al-Bahlani, Assistant Professor
Asem Shalaby, Assistant Professor
Maiya Al-Bahri, Registrar
Asmaa Al-Shihhi, Registrar
Fathiya Al-Rahbi, Registrar

Radhiya A. Al-Ajmi, Senior House Officer

Superintendents
Khalaf Al-Gharibi, Superintendent (College)
Kamla Al-Mawali, Superintendent (Hospital)

Biomedical Scientists
Nasar Al-Wahaibi, Associate Researcher
Johannes K. Solomon, Chief Biomedical Scientist (Clinical)
Usha R. Bai, Chief Biomedical Scientist (Clinical)
Virgilio Cruz, Chief Biomedical Scientist (Clinical)
Virginia Uy, Chief Biomedical Scientist (Clinical)
Sameera Al-Rawahi, Senior Biomedical Scientist
Kawther Al-Adawi, Senior Biomedical Scientist
Shadia Al-Sinawi, Senior Biomedical Scientist
Khalid Al-Hosni, Senior Biomedical Scientist
Mohammed Al-Kindi, Biomedical Scientist
Halima Al-Issaei, Biomedical Scientist
James Vijayan, Biomedical Scientist
Najat Al-Dairi, Biomedical Scientist
Yusra Al-Belushi, Biomedical Scientist
Amna Al-Shukeili, Biomedical Scientist
Bader Al-Sumri, Biomedical Scientist
Muna Al-Sarkhi, Biomedical Scientist
Horiya Al-Azri, Biomedical Scientist
Safaa Al-Rawahi, Biomedical Scientist
Ahmed Al-Hinai, Mortuary Technician
Afran Al-Rashdi, Biomedical Scientist
Maryam Al-Subhi, Biomedical Scientist
Zaina Al-Alawi, Biomedical Scientist

Coordinators
Edna B. Ranada, College
Nadeera K. Ammu, Hospital
Shamla Sheriff, Hospital
Badriya Al-Hinai, Hospital
Lubna Al-Abri, Hospital
Highlights of the Year 2013

The year 2013 witnessed an increase in academic recruitment with Dr. Asem Shalaby joining as Assistant Professor in the College section of the Department. At the same time there was an appreciable expansion both in College and SQUH staffing with the addition of six new members: one Omani Registrar, four Omani biomedical scientists and one administrative staff member. Prof. Anand Date retired in March 2013 and Dr. Ritu Lakhtakia took over as head of department.

The Department was a proud and active participant in the June 2013 visit of the Association for Medical Education in the Eastern Mediterranean Region and the World Federation for Medical Education team for the accreditation of the M. D. programme of the COMHS. Several preparatory and mock visits by Accreditation Canada International (ACI) were instrumental in active departmental preparation towards the ACI accreditation of SQUH. The Department had several visits of note: the International Atomic Energy Agency (IAEA) Cancer Registry visit in January and the Histopathology Residency Training Program mock audit (site visit tour) on 28th April. A guest lecture by Dr. Abdel G. Selim, ‘Molecular alterations in apocrine metaplasia and apocrine adenosis: Relation to breast carcinogenesis’, was held in May 2013. A visit by schoolchildren from Dura Al-Khaleej Private School, Ghubra, Oman, to the Pathology Museum reinforced the Department’s community education efforts. The electron microscopy facility remains an attraction for visits and short courses for Omani SQU scientists, enhancing the inter-institutional collaboration of the Department.

Ms. Najat Al-Dairi was a recipient of one of his His Majesty’s Grants 2013 scholarships to pursue her M.Sc. studies abroad. In addition, seven biomedical scientists went abroad for short training courses in institutes of repute to enhance their skills.

The Department was awarded second prize for its presentation in the COMHS 2012–13 SCRAPS clinico-pathology conference series, entitled ‘Walk with me: A presentation on integrated medical education and multidisciplinary patient care’. The participating medical student, Mr. Majid Al-Badi, was awarded first prize for the best SCRAPS student presentation.

Staff of the Department attended various courses and conferences to update their knowledge and skills. Dr. Ritu Lakhtakia attended the five-day BANFF Pathology Course, Canada, in August and the Paediatric Liver Disease: Current update course in SQU. She also chaired the symposium on Troublesome Everyday Issues at the Annual CME of International Academy of Pathology in Mumbai, India, in October. Dr. Ibrahim Al-Haddabi attended the two-day MOH Glimpses Workshop on Health Vision 2050 in May. Dr. Anna Saparamadu was a resource person for the symposium on Clinical Case Presentations in Lymphoma at the 4th Joint International Conference of British Division International Academy of Pathologists & College of Pathologists of Sri Lanka on Hepato-biliary, Pancreatic & Haemato-lymphoid Pathology, held in Colombo, Sri Lanka in August. She also attended the three-day Emirates Surgical Pathology workshop in Abu Dhabi in February and the Examiner Workshop conducted by Royal College of Canada International in May, as well as an MCQ writing workshop.
Dr. Shadia Al-Bahlani attended SQU workshops on Student Support and Assessment, SPSS Data Analysis and Health Professions Education. Dr. Khalaf Al-Gharibi attended an SQU workshop on Cardiovascular Diseases and Global Health Care, a Springer Publishing Author workshop and one on Biostatistics in Health Research. This last workshop was also attended by Ms. Najat Al-Dairi and Ms. Samira Al-Rawahi. Ms. Najat Al-Dairi also attended the 18th International Congress of Cytology: Toward a more personalized medicine through the art of cytopathology, in Paris in May. Ms. Samira Al-Rawahi and Ms. Amna Al-Shukeili attended SQU workshops on Biostatistics in Health Research and Medical Errors Disclosure, respectively. Ms. Muna Al-Sarkhi and Mr. Bader Al-Sumri attended one-month training programmes in Graz, Austria, on Histopathology, and Immunohistochemistry, Renal and Muscle Biopsy, respectively. Ms. Kamla Al-Mawali visited the UK National External Quality Assessment Service in July. Finally, Dr. Ritu Lakhtakia and all the course coordinators attended the Curriculum Retreat on Phase II of the New Curriculum: Feedback and the way forward, in March.

The surgical pathology services continued to expand their support of clinical demands with the expansion of the immunohistochemical support of cancer diagnosis and prognosis. Both the weekly Tumour Board and the weekly Breast Unit multidisciplinary team (MDT) meeting are now hosted by the Department. These meetings ensure valuable multidisciplinary-based patient care and undergraduate and postgraduate educational enrichment. The renal pathology service provides complete diagnostic evaluation of renal biopsies for SQUH and MOH hospitals with active patient management MDT meetings on a regular basis.

The College core laboratories have received a fillip with the active remodelling and re-equipping of the histology laboratory with molecular pathology facilities. These will provide much needed support for research efforts and enhance the teaching standards of the B.Sc BMS programme.

Teaching Programmes

UNDERGRADUATE PROGRAMMES

M. D. Curriculum (Phase II)

The Department has been involved in the full implementation of the new M.D. curriculum with the following modules in four semesters of Phase II: Response to Infection and Pathobiology, and systems modules including Cardiovascular, Respiratory, Uroreproductive, Alimentary, Locomotor, Endocrine, Human Nervous system and Integrated Modules I, II and III. The Department’s faculty have guided undergraduate student research projects in the three semester Research Module. The Locomotor Module is being coordinated by Dr. Asim Qureshi.

M. D. Curriculum (Phase III)

Six batches each of Junior and Senior Clerkship students (new curriculum) undergo laboratory rotations in pathology to orient them to basic and advanced laboratory techniques to improve their clinico-pathologi-
Pathology

Clinical correlation in an integrated format. The integration of pathology with clinical dermatology training is achieved by small group teaching in pathology during this rotation, in addition to the previously mentioned laboratory exposure. These didactic exercises are further augmented through student attendance at the multidisciplinary meeting in Pathology with the Surgery, Breast Unit, Oncology, Paediatrics, Gynaecology and Haematology departments.

B.Sc. BIOMEDICAL SCIENCES PROGRAMME

Dr. Ritu Lakhtakia chairs the management group for this programme with Dr. Shadia Al-Bahlani as the training coordinator. The following courses are taught: Introduction to BMS; Instrumentation; Advanced Instrumentation; Pathology and Biochemistry Laboratory rotations; Principles of Histopathology; Research Methodology and Research Projects; Principles of Cytopathology; Clinical Correlations, and Subject Specialisation. A new Clinical Correlations module was designed by Dr. Marwa Al-Riyami for delivery in 2014.

POSTGRADUATE PROGRAMMES

Residency Programmes

The Pathology Department is a training centre for the OMSB and is an approved centre for the Part I examination of the Fellowship of the Royal College of Pathologists (FRCPath), UK. Up to three residents are posted at any one time for general pathology training and electives in renal pathology. The Department also offers an elective rotation (four weeks) for Dermatology, Haematology and Obstetrics and Gynaecology residents. This provides them with an opportunity to develop an understanding of dermatopathology, haematolymphoid diseases and gynaecological pathology, respectively. In addition to OMSB residents, there is one senior house officer and one registrar employed by SQUH who rotate between surgical pathology and cytopathology. One registrar has graduated from the OMSB programme. The training programme for postgraduate residents in pathology is five years. At present, there are eight OMSB trainees who rotate between SQUH, the Royal Hospital, Khoula Hospital, ROPH and the AFH. All faculty members are trainers and members of various subcommittees of the Histopathology Scientific committee of the OMSB. The end of year practical assessment of all Pathology OMSB residents was conducted in COMHS in June 2013.

Training Courses & CME Activities

Dr. Marwa Al-Riyami and Dr. Shadia Al-Sinawi contributed to a workshop entitled 'Use of Immunofluorescence in Diagnosis and Research' organised under the aegis of SCORE. Dr. Ritu Lakhtakia contributed to a student debate entitled 'Stem Cell Research: bane or boon' under the aegis of SCOME. Dr. Ritu Lakhtakia and Ms. Yusra Al-Balushi contributed to a workshop on immunohistochemistry entitled 'Unmask cancer cells' organised under the aegis of SCORE. Dr. Ritu Lakhtakia presented a paper in the Mammography and Breast Biopsy Workshop organised by Department of Radiology, as well as organising and conducting the B.Sc. BMS Curriculum Retreat and Examination Assessment Assessment Workshop, sponsored by the COMHS, in Decem-
ber at Crowne Plaza Hotel, Muscat.

The Department of Pathology offers clinical attachments in laboratory medicine. The Department also welcomed staff from other laboratories of the MOH and AFH who came to train in special techniques in cytology and immunohistochemistry. In the Electron Microscope Unit, Mrs. Huda Al-Hinai, Mrs. Hajar Al-Ghafri and Mrs. Asma Al-Nabhani each underwent a two-week summer training programme.

Clinical & Diagnostic Services

With the expanding clinical and surgical services offered by SQUH, the Department has witnessed a surge in the number of biopsies and resection specimens received. This not only reflects the number but also the complexity of these specimens. The Department is also a centre for subspeciality reporting, particularly haematopathology and renal pathology. It acts as a referral centre for the MOH hospitals, the ROPH, the AFH, Royal Palace Hospital and clinics, Royal Diwan clinics and private hospitals within Oman for expert opinion on difficult diagnoses.

The renal pathology service is organised and delivered by Dr. Marwa Al-Riyami, providing comprehensive reporting of renal biopsies with light microscopic, ultrastructural and fluorescent inputs. Adult and paediatric multidisciplinary case discussions for patient management are conducted with participating faculty from SQUH, the Royal Hospital and the AFH.

The frozen section facility and urgent fine-needle aspiration cytology diagnostic support to the One-Stop Breast Clinic provide vital inputs for intraoperative decision-making and early diagnosis of breast cancer, respectively.

Table 1: Workload of histopathology/cytology/electron microscopy in 2013

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Request / test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histology</td>
<td>6,856 / 32,865</td>
</tr>
<tr>
<td>Immunohistochemistry</td>
<td>1,496 / 13,349</td>
</tr>
<tr>
<td>Immunofluorescence</td>
<td>254 / 1945</td>
</tr>
<tr>
<td>Enzyme histochemistry</td>
<td>7 / 82</td>
</tr>
<tr>
<td>Molecular pathology</td>
<td>60 / 203</td>
</tr>
<tr>
<td>Cytology (gynaecological)</td>
<td>1,391 / 1,453</td>
</tr>
<tr>
<td>Cytology (non-gynaecological)</td>
<td>1,221 / 4,829</td>
</tr>
<tr>
<td>Electron microscopy</td>
<td>797 / 2369</td>
</tr>
<tr>
<td>Totals</td>
<td>12,082 / 54,726</td>
</tr>
</tbody>
</table>
Well-established Immunohistochemistry and Fluorescent Microscopy Units provide the ancillary support for resolving diagnostic dilemmas. The Electron Microscopy Unit supports problem-solving in renal, skin and muscle diseases.

Clinicopathological conferences are also playing an increasingly important role in patient management. The pathologists contribute to such meetings as core members, particularly in the breast and oncology MDTs held on a weekly basis. Monthly meetings are held with the Departments of Surgery, Child Health, Obstetric & Gynaecology and Haematology.

The quality of diagnostic services of the Department are evaluated by departmental internal quality assurance programmes. The Department is also registered with and subscribes to international external quality assurance programmes in histopathology, cytopathology and immunocytochemistry, as well as to a technical module. The Department’s Quality Assurance Committee, headed by Dr. Ibrahim Al-Haddabi, is actively engaged in preparations for the ACI accreditation of the hospital laboratory.

Research

RESEARCH PROJECTS

Effect of dietary supplementation of fruits grown in Oman on cognitive decline in Alzheimer’s dementia, mild cognitive impairment, vascular cognitive impairment and traumatic brain injury


Investigators: Dr. Mohamed Essa, Dept. Food & Nutrition, College of Agriculture & Marine Sciences, SQU; Dr. Ritu Lakhtakia, Dept. Pathology, SQU.

Whole genome microarray expression analysis on Omani patients with colon cancer


Investigators: Dr. Marwa Al-Riyami, Dept. Pathology, SQU; Dr. Abeer Al-Sayegh, Dept. Genetics, SQU, Prof. Mansour Al-Moundhri, Dept. Medicine, SQU.

Expression of tumor necrosis factor: Alpha and other cytokines in renal transplant patients and those with chronic renal disease


Investigators: Dr. Nasar Al-Wahaibi, Prof. Anand Date, Dr. Marwa Al-Riyami, Dept. Pathology, SQU; Dr. Mohammed Al-Balushi, Dept. Microbiology, SQU; Dr. Ahmed Shukaili, The Research Council, Oman; Dr. Abul-lah Al-Muniri, Dept. Family Medicine & Public Health, SQU.
Mast cells in chronic gastritis: A morpho-immunophenotypic study with clinicopathologic correlation


Investigators: Dr. Ritu Lakhtakia, Dr. Anna Saparamadu, Dr. Ibrahim Al Haddabi, Dept. Pathology, SQU; Dr. Jamal Sallam, Dept. Medicine, SQU.

Study of clinicopathological features of papillary carcinoma of thyroid and morphologic evaluation of precursor lesions

Code: MREC #611 Dates 2013 Value: Unfunded Project Approval: SQU

Investigators: Dr. Asim Qureshi, Dept. Pathology, SQU; Ms. Ama Al-Hinai (Phase II M.D. student), COMHS, SQU.

Comparison of ultrafast Pap stain with the conventional method of various body cavity fluids in cytology

Code: MREC #666 Dates 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Nasar Al-Wahibi, Dept. Pathology, SQU.

Chemoresistance breast cancer: The role of E2F1 activation and its modulation by Akt pathway

Code: MREC #670 Dates 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Shadia Al-Bahlani, Dept. Pathology, SQU.

Assessment of duodenal biopsies which are performed on patients of suspected coeliac disease, qualitative assessment by March classification

Code: MREC #712 Dates 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Asim Qureshi, Dept. Pathology, SQU.

Pathological findings of crescentic glomerulonephritis in Omani patients 2006–2012

Code: MREC #794 Dates 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Marwa Al-Riyami, Dept. Pathology, SQU.

Clinical features of crescentic glomerulonephritis in Omani patients during the period from 2006 to 2012

Code: MREC #795 Dates 2013 Value: Unfunded Project Approval: SQU

Investigator: Dr. Marwa Al-Riyami, Dept. Pathology, SQU.
Correlation of proliferation marker Ki67 with hormone receptor status and Her-2 neu expression in Omani Women with breast cancer

Code: MREC #794  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Ritu Lakhtakia, Dept. Pathology, SQU.

BOOKS & JOURNAL PUBLICATIONS

Journal Publications


CONFERENCES & SEMINAR PRESENTATIONS

Oral Presentations

International


National


Poster presentations

International


National

1. Qureshi A. Inter-observer agreement in reporting Her 2 Neu protein over expression. SQU University Day, SQU, Oman, 5 May 2013.


4. Al-Kindi M. Qualitative assessment of the endangered Arabian Tahr/Ibex (Hemitragus jayakari) semen using Bioxcell® and Triladyl® extenders. SQU University Day, SQU, Oman, 5 May 2013.

Seminar presentations

National


### THESIS SUPERVISION

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Qualification</th>
<th>Title</th>
<th>Supervisor</th>
<th>Date of completion</th>
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</thead>
<tbody>
<tr>
<td>Ikram Al-Abri</td>
<td>M.D.</td>
<td>Correlation of proliferation marker Ki67 with hormone receptor status and Her-2 expression in Omani women with breast cancer (MREC #830)</td>
<td>Dr. Ritu Lakhtakia</td>
<td>2014</td>
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<tr>
<td>Saoud M. Al-Salhi and Haithum S. Al-Daghri</td>
<td>M.D.</td>
<td>Prevalence of <em>Helicobacter pylori</em> among patients attended SQUH with dyspepsia</td>
<td>Dr. Ibrahim Al-Haddabi</td>
<td>2013</td>
</tr>
<tr>
<td>Maitha H. S. Al-Sibani</td>
<td>M.D.</td>
<td>Pathological findings of crescentic glomerulonephritis in Omani patients (MREC #795)</td>
<td>Dr. Marwa Al-Riyami</td>
<td>2013–2014</td>
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<tr>
<td>Dalal O. Al-Harthi</td>
<td>M.D.</td>
<td>Clinical features of crescentic glomerulonephritis in Omani patients (MREC #796)</td>
<td>Dr. Marwa Al-Riyami</td>
<td>2013–2014</td>
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<tr>
<td>Student Names</td>
<td>Sumaiya Mohammed and Mariam M. A. Al-Harbi</td>
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<tr>
<td>Title:</td>
<td>Histological evaluation of duodenal biopsies of patients of celiac disease, histopathological assessment by MARSH grading system</td>
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<tr>
<td>Supervisor:</td>
<td>Dr. Asim Qureshi</td>
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<tr>
<th>Student Name</th>
<th>Abdullah M. D. Al-Salmi,</th>
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<tr>
<td>Qualification:</td>
<td>M.D.</td>
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<tr>
<td>Title:</td>
<td>Spectrum of histopathological changes in duodenal mucosa in <em>Helicobacter pylori</em> associated gastritis and its comparison to celiac disease</td>
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<tr>
<td>Supervisor:</td>
<td>Dr. P. A. M. Saparamadu</td>
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<tr>
<th>Student Name</th>
<th>Asaad M.S. Al-Hinai</th>
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<tr>
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<tr>
<td>Title:</td>
<td>Spectrum of histopathological changes in duodenal mucosa in <em>Helicobacter pylori</em> associated gastritis and its comparison to celiac disease in paediatric patients</td>
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<td>Supervisor:</td>
<td>Dr. P. A. M. Saparamadu</td>
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<tr>
<th>Student name:</th>
<th>Iman Al-Ressi</th>
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<tr>
<td>Qualification:</td>
<td>M.Sc.</td>
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<tr>
<td>Title:</td>
<td>Role of antigen presenting cells in liver damage during hepatitis B and C infections</td>
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<tr>
<td>Supervisors:</td>
<td>Dr. Marwa Al-Riyami, Prof. Ali Al-Jabri, Dr. Khalid Al-Naamani</td>
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<td>2013–2014</td>
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<td>Student Name:</td>
<td>Amal S. Al-Kalbani</td>
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<td>Qualification:</td>
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<tr>
<td>Title:</td>
<td>Measurement of tumor necrosis factor – alpha, IL-6 and IL-8 in renal transplant patients and those with chronic renal disease.</td>
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<tr>
<td>Supervisors:</td>
<td>Dr. Nasar Al-Wahaibi, Dr. Mohammed Al-Balushi</td>
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<tr>
<th>Student Name:</th>
<th>Samya S. Al-Balushi</th>
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<tr>
<td>Qualification:</td>
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<tr>
<td>Title:</td>
<td>Measurement of TWEAK, IL-2 and IL-10 cytokines in renal transplant patients and those with chronic renal disease.</td>
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<tr>
<td>Supervisors:</td>
<td>Dr. Nasar Al-Wahaibi, Dr. Moahmmed Al Balushi</td>
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<th>Student Name:</th>
<th>Maryam Al-Subhi</th>
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<td>Qualification:</td>
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<td>Title:</td>
<td>Comparison of ultrafast Pap stain with the conventional method of various body cavity fluids in cytology</td>
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<tr>
<td>Supervisors:</td>
<td>Dr. Nasar Alwahaibi, Ms. Najat Al-Dairi, Ms. Usha R. Bai, Ms. Amna Al-Shukeili</td>
</tr>
<tr>
<td>Date of completion:</td>
<td>2013</td>
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</table>
The Department of Pharmacology & Clinical Pharmacy plays an active teaching role in both the College of Medicine & Health Sciences’ (COMHS) curricula as well as in the College of Nursing’s educational programme. The Department also offers a Master’s and a Doctoral degree in Clinical Pharmacy and contributes to the teaching of other Master’s courses. The Department coordinates the Research Method and Critical Analysis of Scientific Information course. In addition, the Department coordinates the Cellular Communication and Introduction to Drug Action, Integrated Module II and Alimentary System courses in the M.D. programme and offers two elective courses (in Arabic): Drugs, Nutrients and Narcotics and History of Medicine.

Research activities embrace different areas of experimental and clinical pharmacology and therapeutics. The areas under investigation encompass: pharmacogenetics of drugs, e.g. tacrolimus and pharmacoeconomics, and the effect of several agents on experimental acute and chronic renal failure.
Staff

Head of Department
Mohammed Al-Za’abi, Associate Professor

Faculty
Musbah Tanira, Professor
Badreldin Ali, Professor
Abdel H. Elhawary, Associate Professor
Ibrahim Al-Zakwani, Associate Professor
Ragini Vaishnav, Assistant Professor
Khalid Al-Balushi, Assistant Professor
Yousuf Al-Suleimani, Assistant Professor

Support Staff
Ikhlas A. Ahmed, Researcher
Mahfouda Al-Busaidi, Biomedical Scientist
Ahmed Al-Mahrouqi, Biomedical Scientist
Mercy Calma, Coordinator

Highlights of the Year 2013
In 2013, the Department was given the responsibility of coordinating three courses: Cellular Communication and Introduction to Drug Action, Alimentary System and Integrated Module II, and participated in many system module courses. Also, the Department was involved in Supportive Learning Topics (SLTs) in the Pre-clerkship (SLT-Pharmacology) and in Senior Clerkship (SLT-Therapeutics) programmes. During the year, Dr. Mohammed Al-Za’abi was promoted to Associate Professor and Dr. Khalid Al-Balushi was appointed as Assistant Dean of the COMHS for Postgraduate Studies & Research. In July 2013, Dr. Ragini Vaishnav left the Department. In 2013, the Department acquired the following equipment for research activities and teaching: a gel documentation system, a pH meter, a shaker, an ultra-low freezer, a flame photometer, a chloride meter and a dry block heater.

The research output for 2013 consisted of 16 research projects, 13 international poster presentations, and 44 publications in peer-reviewed journals. The Department also contributed to the world of medical science through its review and editorial activities in various medical journals. Staff members were involved in different research activities and participated in national and international conferences. The Department serves in several committees in the COMHS, Sultan Qaboos University Hospital (SQUH) and the University, as well as those in other national institutions.

Teaching Programmes

UNDERGRADUATE PROGRAMME
At the preclinical level, the Department’s teaching concentrates on the mechanisms by which drugs affect various biological systems and functions, as well as the actions of drugs on pathological processes.

The Department contributes to undergraduate teaching in Phase I and Phase II of the M.D. programme and coordinates several courses in Phase I as well as in Phase II. The Department contributes to the B.Sc. Biomedical Sciences (BMS) degree with courses in Diagnostic Toxicology and Therapeutic Drug Monitoring and Medical Microbiology. The Department continues to contribute to the College of Nursing courses: Basic Pharmacology and Dosage Calculations and Pharmacology for Nurses are delivered in both semesters.
The Department also delivers the College elective courses: Nutrients, Medicines and Narcotics and History of Medicine. Both courses are under the coordination of the Department.

In 2013, the Department was given the responsibility to coordinate Cellular Communication and Introduction to Drug Action in Phase I. This module introduces the physiological, biochemical and pathophysiological processes and control of cellular communication. In Phase II, the Department is responsible for the coordination of the Alimentary System and Integrated Module II courses. The Department delivers lectures and tutorials for the following courses: Cellular Communication and Introduction to Drug Action; Response to Infection and Pathobiology; Alimentary System; Respiratory System; Haemopoetic Lymphoid Immune System; Cardiovascular System; Uro-reproductive System; Endocrine System; Locomotor System; Nervous System, and Research Methodology I and II. Also, the Department is involved in case tutorials for Integrated Modules I, II and III. The Department is also supervising 10 undergraduate research projects.

In Phase III of the M.D. programme, the Department continues to be involved in the Pre-clerkship programme. Topics for SLTs were delivered to the students in collaboration with the clinical pharmacists of the Department of Pharmacy at SQUH. In 2013, the Department started the programme for the Senior Clerkship students; the SLT in Therapeutics, which was designed by the Department last year, is delivered over one full week, six times a year. The Department is also involved in the Obstetrics & Gynaecology and the Behavioural Medicine Senior Clerkship clinical rotations.

POSTGRADUATE PROGRAMME
The Department plays an active role in teaching in the Master’s programme in Biomedical Sciences. The Department also offers a Master’s degree in Clinical Pharmacy. Major courses delivered by the Department are: Pharmacokinetics and Therapeutic Drug Monitoring; Clinical Pharmacy I; Clinical Pharmacy II, and Introduction to Pharmacoeconomics. The Department has also introduced a new elective course, Pharmacotherapeutics.

The Department started the Doctoral degree in Clinical Pharmacy and continues to coordinate the Master’s degree core course, Research Method and Critical Analysis for Scientific Information.

The Department is involved in the Pharmacy Working Group to establish a Pharmacy specialty for the Oman Medical Specialty Board (OMSB).
Research

RESEARCH PROJECTS

Effect of gum arabic on an animal model chronic renal failure effect


Investigators: Prof. Badreldin Ali, Dept. Pharmacology & Clinical Pharmacy, SQU.

Pharmacogenetics of tacrolimus in Omani renal transplant patients


Investigators: Dr. Khalid Al-Balushi, Dr. Mohammed Al-Za’abi, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Dawood Al-Riyami, Dept. Medicine, SQU.

Experimental studies on the interactions between pulmonary exposure to particulate air pollution and acute renal failure: Pathophysiologic mechanisms and influence of protectant drugs.

Code: CL/SQU-UAE/12/01  Dates: 2012–2014  Value: OR 20,000  Funder: SQU & UAE University

Investigators: Prof. Badreldin Ali, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Abderrahim Nemmar, Dept. Physiology, UAE University.

Analysis of molecular epigenetic programming of diabetes mellitus

Code: CL/SQU-UAE/13/01  Dates: 2013  Value: OR 20,000  Funder: SQU & UAE University.

Investigator: Dr. Khalid Al-Balushi, Dept. Pharmacology & Clinical Pharmacy, SQU.

The effect of cisplatin-induced acute renal failure and adenine-induced chronic renal failure on predictors of hepatic drug disposition


Investigators: Prof. Badreldin Ali, Dr. Mohammed Al-Zaabi, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Mostafa Wali, Dept. Food Sciences & Nutrition, College of Agriculture & Marine Sciences, SQU; Mr. Isehaq Al-Husseini, Dept. Physiology, SQU.

Study of the effect of statins and some vasoactive drugs on the development and progression of diabetic nephropathy in the rat model


Investigators: Dr. Abdel Hamid Elhawary, Prof. Badreldin Ali, Dr. Khalid Al-Balushi, Dr. Yousuf Al-Suleimani, Dept. Pharmacology & Clinical Pharmacy, SQU; Dr. Mostafa Wali, Dept. Food & Nutrition, College of Agriculture & Marine Sciences, SQU.
Impact of CYP2C19 and ABCB1 polymorphisms on the antiplatelet effect of clopidogrel in Omanis

Investigator: Dr. Khalid Al-Balushi, Dept. Pharmacology & Clinical Pharmacy, SQU.

Prescribing patterns of NSAIDs at Sultan Qaboos University Hospital

Code: MREC #681  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Khalid Al-Balushi, Dept. Pharmacology & Clinical Pharmacy, SQU.

Prescribing pattern of antifungal medications at Sultan Qaboos University Hospital (a retrospective study)

Code: MREC #683  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Khalid Al-Balushi, Dept. Pharmacology & Clinical Pharmacy, SQU.

Medication reconciliation at Sultan Qaboos University Hospital: Evaluation, implementation and outcomes

Investigators: Dr. Mohammed Al-Za’abi, Dr. Ibrahim Al-Zakwani, Dept. Pharmacology & Clinical Pharmacy, SQU.

The effect of rosuvastatin therapy on glycemic status, bone profile and renal function in patient attending lipid clinic of Sultan Qaboos University Hospital

Code: MREC #725  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Abdel H. Elhawary, Dept. Pharmacology & Clinical Pharmacy, SQU.

Utilization pattern of antipsychotics among adult patients at Sultan Qaboos University Hospital

Code: MREC #776  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Mohammed Al-Za’abi, Dept. Pharmacology & Clinical Pharmacy, SQU.

Evaluation of sampling time and indications for therapeutic drug monitoring requests at Sultan Qaboos University Hospital

Code: MREC #798  Dates: 2013  Value: Unfunded  Project Approval: SQU
Investigator: Dr. Mohammed Al-Za’abi, Dept. Pharmacology & Clinical Pharmacy, SQU.
Paracetamol poisoning in Sultan Qaboos University Hospital (SQUH)

Code: MREC #800  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigators: Prof. Musbah Tanira, Dr. Mohammed Al-Za’abi, Dept. Pharmacology & Clinical Pharmacy, SQU.

Utilization pattern of antidepressants at Sultan Qaboos University Hospital

Code: MREC #801  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Mohammed Al-Za’abi, Dept. Pharmacology & Clinical Pharmacy, SQU.

Inhibition of receptor tyrosine kinase via Pgrmc1: A potential therapeutic target in gastric cancer

Code: MREC #843  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Ikhlas S. Ahmed, Dept. Pharmacology & Clinical Pharmacy, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Poster Presentations

International


6. Elhawary AH. Reduced carotid, renal, hindquarter but not mesenteric blood flow in diabetic rats: The possible mechanisms. 2nd China Congress on Controversies to Consensus in Diabetes, Obesity and Hypertension (CODHy), Shanghai, China, 9–11 May 2013.


THESIS SUPERVISION

Student Name: Amna Al-Hashar

Qualification: Ph.D. Clinical Pharmacy

Title: Medication Reconciliation at Sultan Qaboos University Hospital (SQUH): Evaluation, Implementation and Outcomes

Supervisors: Dr. Mohammed Al-Za’abi, Prof. Musbah Tanira, Dr. Ibrahim Al-Zakwani

Date of completion: On-going
Student Name: Muna M. Al-Balushi
Qualification: M.Sc. Clinical Pharmacy
Title: Effect of rosuvastatin on glycemic control, bone profile and renal failure in patients attending Lipid Clinic of Sultan Qaboos University Hospital
Supervisor: Dr. Abdel H. Elhawary
Date of completion: On-going

Student Name: Juhaina M. Al-Moqbali
Qualification: M.Sc. Clinical Pharmacy
Title: Evaluation of Sampling Time and Indications for Therapeutically Monitored Drugs at Sultan Qaboos University Hospital
Supervisor: Dr. Mohammed Al-Za’abi
Date of completion: On-going
The Pharmacy Department at the SQU Hospital (SQUH) is considered to be the centre of excellence in Oman for the provision of general and specialised pharmaceutical services, and the promotion of pharmaceutical research and teaching. The Department’s mission is to dispense the correct, safe and most effective and economic medication to a properly identified patient at the appropriate time with sufficient written and verbal patient information as well as to disseminate appropriate and unbiased drug-, poison- and disease-related information to patients, medical, pharmacy, nursing and allied healthcare professionals.

The Department is divided into six major sections: Pharmacy Administration and Training; Outpatient Pharmacy; Inpatient Clinical Pharmacy; Manufacturing/Aseptic Preparations; Medicine Information, and the Pharmacy Sub-Store.

There has been a significant increase in the number of clinical services and patients in the last five years, however, the Department has maintained its high quality services and the outpatient waiting time has also been maintained below 30 minutes, even during in the busiest months.
The Department is recognised nationally and regionally as a training centre that supports a range of quality programmes. It is responsible for teaching healthcare providers and students from the Colleges of Medicine and Pharmacy and for the provision of in-service training for pharmacy staff. It also provides individualised work experience placements for graduate pharmacy personnel.

The Department has carried out a number of research projects with the aim of further improving its services and the effectiveness of certain drug therapies.

**Staff**

**Head of Department**
Ibrahim Al-Zakwani, *Associate Professor*

**Deputy Head & Training Coordinator**
Aqeela Taqi, *Clinical Pharmacist*

**Inpatient Clinical Pharmacy**
Badriya Al-Zadjali, *Clinical Pharmacist*
Asmahan Al-Barram, *Clinical Pharmacist*
Maryam Al-Kindi, *Pharmacist*
Samiya Al-Ajmi, *Pharmacist*
Amal Al-Rahbi, *Pharmacist*
Mafiana Rose, *Pharmacist*
Anwar Al-Mahrizi, *Pharmacist*
Intisar Al-Riyami, *Pharmacist*
Shireen Imam, *Pharmacist*
Manal Al-Hatrushi, *Pharmacist*

**Outpatient Pharmacy**
Issa Al-Rashdi, *Pharmacist*
Soud Al-Shabibi, *Pharmacist*

Janardhanan Nair, *Senior Pharmacist*
Mohammed Al-Ghafri, *Pharmacist*

**Family Medicine Clinic and Emergency Dept. Pharmacy**
Nagwa Mohammed, *Pharmacist*
Safiya Al-Jabri, *Pharmacist*
Maryam Al-Riyami, *Assistant Pharmacist*
Zakariya Al-Habsi, *Assistant Pharmacist*

**Medicine Information**
Intisar Al-Busaidi, *Senior Pharmacist*
Nibu Nair, *Pharmacist*
Bushra Al-Busaidi, *Pharmacist*

**Aseptic Preparations Unit**
Dawood Al-Salhi, *Pharmacist*
Felicidad Dizon, *Pharmacist*
Ali Al-Jabri, *Assistant Pharmacist*
Ali Al-Maawali, *Assistant Pharmacist*

**Pharmacy Sub-Store**
Khalid Al-Zadjali, *Pharmacist*
Azza Al-Harbi, *Assistant Pharmacist*
Hafidha Al-Rahbi, *Assistant Pharmacist*

**Pharmacy Computer System Management**
Bruno Louis, *Senior Pharmacist*

**Technical Services**
Ahmed Al-Mahruqi, *Pharmacist*

**Coordinators**
Mahfoudh Al-Rawahi
Faiza Al-Zadjali
Highlights of the Year 2013

In May 2013, the Department organised the first Pharmacy Practice Symposium in collaboration with Oman Pharmaceutical Society in May 2013. The symposium was held at the Oman Medical College (OMC) and attended by 150 participants, including a number of delegates from Gulf Cooperation Council countries.

The Department was awarded with the Best Department Award during the World Quality Day Celebration in November 2013. The event was organised by the Directorate of Development & Quality of SQUH with a theme of "Collaboration counts".

The Department organised the Medicine Information (MI) course in collaboration with the Directorate for Training & CPD (DTD) in December 2013. The course was conducted at both basic and advanced levels to address the needs of both pharmacists and assistant pharmacists. Held at the College of Nursing at SQU, the course attracted 33 participants, including four from the Ministry of Health (MOH).

The Department organised a workshop on Scoping and Writing your Work for Publication at the College of Nursing in collaboration with the DTD. The workshop was attended by 25 senior pharmacists including three from the MOH. Mr. David Wood, a consultant in medicine information, was the facilitator on both the MI course and the publication workshop.

The Department developed and implemented a number of new policies to comply with Accreditation Canada International requirements. These included policies for high-alert medications policy, medication reconciliation and concentrated electrolytes risk mitigation policy, as well as total parenteral nutrition (TPN) prescribing guidelines.

Teaching Programmes

UNDERGRADUATE CLINICAL PROGRAMME

Staff of the Department participated in the following undergraduate teaching programmes: an English for Medicine course entitled 'SQUH Pharmacy at a Glance' for 1st year medical students; a clinical nutrition course on TPN for 5th year medical students, and lectures on patient adherence to prescribed medications and talking to patients about their medications for Pre-clerkship medical students.

Training Courses & CME Activities

In 2013, staff of the Department contributed to CME activities by teaching on the following topics/courses: Pain Management Course - Pharmacotherapy and Pain Management; Chemotherapy Course; Central Sterile Supplies Department Course - Chemical Agents and Antiseptics; Nursing (Pharmacist and Nurse collaboration) in SQUH, and a Knowledge forum entitled Clinical Pharmacy Interventions at SQUH.
Training was also provided for students from Nizwa University, the OMC, the Oman Assistant Pharmacist Institute and the Higher College of Technology. Additionally, 15 CPD/CME sessions were organised in the Department and delivered by Pharmacy staff.

Clinical & Diagnostic Services

OUTPATIENT PHARMACY (OP)
Dispensing prescriptions to ambulatory patients is the major activity of this section. This service is offered at four different locations: the main hospital pharmacy, the Family & Community (FAMCO) Clinic, the Emergency Department pharmacy (24-hour service) and the Student Clinic pharmacy. At the main SQUH pharmacy, one room is dedicated for counselling patients. In 2013, more than 560 patients received detailed counselling on the use of their medications. During 2013, the OP pharmacies dispensed a total 229,391 prescriptions, for a total of 585,256 items.

Figure 1: Total number of prescriptions dispensed from all outpatient pharmacies between 2009–2013.

INPATIENT CLINICAL PHARMACY
Clinical pharmacy is a service provided by qualified clinical pharmacists to promote rational drug therapy that is safe, appropriate, and cost effective. Clinical pharmacists work in teams with other healthcare providers to achieve this goal. Clinical pharmacists perform a number of clinical activities, e.g. medication chart review and provision of medicine information. Clinical pharmacists also intervene to optimise drug therapy by connecting doses and frequencies.
The development of clinical treatment guidelines and patient educational material is a major activity of clinical pharmacists. In 2013, the following guidelines were produced or updated: Intrahaemorrhagic stroke guidelines; Administration of palivizumab in SQUH; Vancomycin IV dosing guideline for neonates; Zanamivir administration guideline; Eculizumab paediatric administration guideline; Guidelines and poster for stress ulcer and venous thromboembolism prophylaxis in critically-ill patients; Know your medications, a patient information leaflet; Antibiotic administration guideline for paediatrics (update); Alglucosidase (Myozyme®) administration guideline; Tuberculin purified protein derivative administration; Guidelines on prescribing, dispensing, and administering remixed total parenteral nutrition (TPN); Patient leaflets on safe handling and administration of antineoplastic medication; Disposal of medications and how to store your medications; Rituximab administration guideline (update); Dosing protocol of recombinant coagulation factor VII (NovoSeven®) for paediatric haemophilia patients; IV Pentamidine protocol, and Guidelines for noloxene and flumazenil.

In 2013, clinical interventions have increased by 11% to 3,110 compared to 2012. This was due to the availability of the interventions form in electronic format as part of the SQUH electronic patient records system set up in 2011.

**ASEPTIC PREPARATIONS UNIT**
This section is responsible for the preparation of TPN, chemotherapy preparations, sterile and non-sterile products and the repackaging of medicines.
Table 1: Aseptic Preparation Unit manufacturing activities in 2010–2013

<table>
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<th>Activity</th>
<th>2010</th>
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<th>2012</th>
<th>2013</th>
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<tr>
<td>Total parenteral nutrition bags prepared</td>
<td>3,030</td>
<td>3,388</td>
<td>3,627</td>
<td>4,346</td>
</tr>
<tr>
<td>Cytotoxic doses prepared</td>
<td>9,928</td>
<td>10,659</td>
<td>10,093</td>
<td>11,252</td>
</tr>
<tr>
<td>Sterile and non-sterile preparations</td>
<td>2,740</td>
<td>2,886</td>
<td>3,029</td>
<td>2,520</td>
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<tr>
<td>Repackaged items</td>
<td>322</td>
<td>238</td>
<td>242</td>
<td>253</td>
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The production of TPN increased by 20% compared to 2012, with 55% of the bags being prepared for Neonatal Ward. The Unit also prepared 346 (8%) TPN bags for the Armed Forces Hospital (AFH) leading to an additional income of OR 22,490 for SQUH. Home TPN was prepared for the first time for one paediatric patient with tufting enteropathy.

The total number of prepared doses of cytotoxic preparation increased by 11.5% with the preparation of 11,252 doses compared with 10,093 doses in 2012. The total number of patient receiving them was 701. Outside SQUH, we prepared 69 cytotoxic doses for the AFH.

**MEDICINE INFORMATION SERVICES (MIS)**

MIS provides unbiased, evidence-based and critically-evaluated information about medicines, poisons and diseases in order to improve patient care. Table 2 shows the number of documented enquiries, adverse drug reactions (ADR) and poisoning reports from 2010 to 2013.

![Figure 3: Clinical significance of interventions in 2013.](image-url)
Table 2: Medicine Information Services activities in 2010–2013

<table>
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<tr>
<th>Service</th>
<th>2010</th>
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<tbody>
<tr>
<td>Enquiries</td>
<td>621</td>
<td>681</td>
<td>558</td>
<td>392</td>
</tr>
<tr>
<td>Adverse drug reaction reports</td>
<td>603</td>
<td>549</td>
<td>571</td>
<td>803</td>
</tr>
<tr>
<td>Poisoning reports</td>
<td>118</td>
<td>128</td>
<td>140</td>
<td>102</td>
</tr>
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</table>

MIS also provides the essential information base for SQUH’s Pharmacy & Therapeutics Committee meetings. In 2013, information was provided on more than 21 drugs, which led to the addition of 12 drugs to the formulary and accepting the addition of one sample. Requests for six drugs were not accepted for addition by the committee while two drugs were deleted from the formulary.

Pharmacy Journal Club sessions were organised with the participation of pharmacy staff, during which papers selected from more than 50 medical and pharmaceutical journals were critically appraised.

PHARMACY SUB-STORE
The Pharmacy Sub-Store is the link between the hospital main stores and the Pharmacy Department. It plays an important role in ensuring the availability and smooth distribution of general pharmaceuticals, IV fluids, narcotics and psychotropic drugs to hospital wards and units. It facilitates the control of expiries and helps in the estimation of the quantities of pharmaceuticals to be purchased. The Pharmacy Sub-Store aims to ensure the availability of all critical items as soon as possible in co-operation with the main store and the Procurement Department. The Pharmacy Sub-Store is responsible for the supply of medicines on requisitions for other satellite pharmacies and different clinics and units in the Hospital.

Figure 4: Types of total parenteral nutrition prepared in 2013.
Research

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

International

National
1. Al-Rahbi A. Updates on Sepsis. Sur Pharmacy Symposium, Sur Hospital, Oman, 16 May 2013.
3. Al-Ajmi S. Expanding knowledge and improving skills. Pharmacy Symposium, Royal Hospital, Muscat, Oman, 10 Jan 2013.

Poster presentations

International

National

Seminar Presentations

National
3. Imam S. Pharmaceutical care plan in ALL. Tabuk Pharmacy CME Program, Ruwi Hotel, Ruwi, Oman, 16 Apr 2013.
4. Imam S. Pharmaceutical care plan in ALL. Tabuk Pharmacy CME Program, Tulip Inn Hotel, Al Khuwair, Oman, 18 Apr 2013.
5. Imam S. Counselling geriatric patients. 9th Annual Workshop of Good Pharmacy Practice, Hotel Muscat Holiday, Oman, 19 Dec 2013.
6. Imam S. When dealing with leukaemia. Pharmacy Clinical Room for Pharmacy Staff, SQUH, Oman, 30 May 2013.
The Department of Physiology has two divisions: Basic Physiology and Clinical Physiology (CPH) located in the College of Medicine & Health Sciences and the University Hospital (SQUH), respectively. The Department teaches basic and clinical physiology and also familiarises medical students with various clinical physiological procedures. Physiology teaching is coordinated with other basic science departments in an integrated and multidisciplinary fashion. The curriculum is further fortified by live models as well as simulated basic and clinical case demonstrations at different levels of medical training. Clinical students are taught hands-on the diagnostic skills of the most common clinical measurements that they are likely to encounter after graduation. The Department participates in postgraduate teaching and offers Master’s and Ph.D. programmes.

The Department of Clinical Physiology at the Hospital (CPH) provides advanced clinical diagnostic services for SQUH and also for the whole of Oman. It is the only Department of its kind in the country where such procedures are carried out under one roof with fully digital equipment, good quality assurance and cost effectiveness.

The Department lays major emphasis on research into cardiovascular and metabolic disorders, both basic and clinical. It has strong collaboration with other departments interested in the same field and internationally with universities and institutes conducting similar research. Technical and medical staff members receive regular training and are audited to meet international standards.
Staff

Head of Department
Khamis Al-Hashmi, Assistant Professor

Faculty
Mohammed Hassan, Professor
Sulayma Al-Barwani, Associate Professor
Abdul A. Khan, Assistant Professor
Hajar Al-Rajaibi, Assistant Professor
Ammar A. Boudaka, Assistant Professor
Mohammed Al-Abri, Senior Consultant
Mohammed Al-Rawas, Consultant
Talal Al-Mashkani, Acting Consultant
Deepali Jaju, Senior Registrar
Amira Al-Kharusi, Clinical Lecturer (on study leave)

Support Staff
Adila Al-Tooqi, Superintendent (CPH) (on study leave)
Mariam Al-Hooti, Acting Superintendent & Senior Technologist (CPH)
Susan Al-Nabhani, Senior Technologist (CPH)
Farid Al-Dhuhli, Superintendent (Physiology)
Isehaq Hussaini, Biomedical Scientist
Hajer Ba-Omar, Research Assistant
Sultan Al-Siyabi, Research Assistant
Jessy George, Coordinator
Illuminada Calupig, Coordinator (CPH)

In addition, there are 31 technicians (of which 20 are Omani) in the support staff team working in the sections of Cardiology, Pulmonology, Neurophysiology and in the Sleep Disorders laboratories.

Highlights of the Year 2013
Several research projects were carried out in physiology and clinical physiology in 2013 in collaboration with other departments. Cardiovascular research is the high point of departmental research expertise and activity. It spans topics from membrane and vascular physiology to genetics and clinical research. Research on sleep physiology and disorders and its association with other metabolic disorders is also one of the active research areas in the Department.

Apart from the addition of new diagnostic procedures, the number of existing clinical tests increased in all specialties, with some having shown a substantial increase. Medical research has also increased and results from various projects have been published.

Teaching Programmes

UNDERGRADUATE PHASE I AND II PROGRAMMES
The Department has contributed extensively to the development and delivery of various systems modules which have been incorporated into the medical curriculum. The Department of Physiology offers one departmental course and makes major contributions to: Structure-function Relationship; Alimentary System; Uro-reproductive System; Cardiovascular System; Respiratory System; Human Nervous System; Endocrine System and the Integrated Modules I, II and III. The Department also teaches the following courses in the Nursing degree programme: Anatomy & Physiology courses I
& II and Pathophysiology for Nursing. The Integrated Module course is a problem-based course shared with all clinical departments. Seven academic staff of the department are involved as module coordinators.

Most of the above courses have relevant clinical applications. Case presentations and the appropriate clinical procedures are taught to the students during these courses and elaborated upon during the clinical years. Students are evaluated in their theoretical and practical components as well as in their basic clinical skills.

The Department participated significantly in the research module. Almost all faculty members in the Department supervise one or two students. They provide the required training and guide them during the writing of the project report.

UNDERGRADUATE PHASE III CLINICAL PROGRAMME
In the Phase III clinical programme, the Department is involved in the teaching of the Pre-clerkship, Junior Clerkship and Senior Clerkship programmes.

POSTGRADUATE TEACHING
The Department offers M.Sc. and Ph.D. programmes. There is currently one student enrolled in the M.Sc. program and there are two Ph.D. students registered and working in two different fields towards the achievement of their degrees. One Ph.D. student is working in basic science research and the other one on the clinical side.

The Department contributes to the core programme of the Oman Medical Specialty Board (OMSB) and to the preparation of trainees for the Membership of the Royal College of Physiologists (MRCP) and Fellowship of the Royal College of Surgeons (FRCS) examinations. Departmental faculty participated as facilitators in different workshops conducted by the OMSB.

Training Courses & CME Activities
Regular in-house training is conducted for newly recruited technicians. As a part of this course, the technicians attend the Anatomy & Physiology course for nursing students when required. Continuing medical education (CME) sessions are held on a monthly basis. Support staff members are all actively involved in the training, teaching and research activities of the Department in both the College and Hospital programmes.

In-house training programmes are provided to the CPH technologists based on their speciality and their administrative responsibility—according to the courses offered by the SQUH Directorate of Training & CPD.
Clinical & Diagnostic Services
The CPH offers diagnostic services which cover most of the spectrum of neurophysiology, cardiology, pulmonology, sleep medicine and other discrete tests. All critical CPH diagnostic services are fully functional to date. Many of the diagnostic areas have further improved their services. The implementation of the policy of reconfirming the referral reasons, established in 2012, also continued in 2013. In this year, new equipment for the estimation of adult and paediatric full pulmonary functions with diffusion capacity was acquired.

The total number of patients attending CPH clinics during the year 2013 was 22,487. This is a 3% increase on the 2012 figures. The monthly distribution of procedures is shown in Figure 1, with the highest number of patients attending in March followed by December.

The Cardiology service had the highest number of procedures (10,562), followed by neurology and pulmonary function tests [Figure 2]. The highest number of CPH procedures were in non-invasive cardiology (5,701); followed by audimetry and newborn screening (4,933); ECHO (4,560); invasive cardiology (1,331); pulmonary function tests (959), and polysomnography (571). Figure 3 shows the comparative distribution of invasive cardiology tests per month for 2012 and 2013.

Out of the total 22,487 procedures in 2013, there were 11,011 outpatients (a 3.5% increase on 2012) and 8,556 inpatients (a 2.6% increase on 2012). A total of 2,877 patients were referred from hospitals other than SQUH (a 3.8% increase on 2012) [Figure 4].

Figures 5 and 6 depict the total number of patients investigated in CPH as a department and in each section of CPH since 2009. There has been significant and consistent increase in the number of patients investigated in CPH in all sections.

Figure 1: Number of patients attending the SQUH Department of Clinical Physiology in 2013.
Figure 2: *Types and number of procedures in the SQUH Department of Clinical Physiology in 2013.*

Figure 3: *Number of patients attending for cardiac catheterisation in 2012 and 2013.*

Figure 4: *Monthly distribution of referrals to the SQUH Department of Clinical Physiology in 2013.*
Figure 5: Comparative analysis of total patients investigated in the SQUH Department of Clinical Physiology since 2009.

Figure 6: Comparative analysis of total patients investigated in each section of the SQUH Department of Clinical Physiology since 2009.

Research

RESEARCH PROJECTS

An investigation into lethal ischaemia/reperfusion injury and anti-apoptotic therapies (caspase inhibitors) in the human myocardium


Investigators: Dr. Hajar Al-Rajaibi, Dr. Sulayma Al-Barwani, Dept. Physiology, SQU; Dr. Hilal Al-Sabti, Dept. Surgery, SQU; Ms. Kamla Al-Maawali, Dept. Pathology, SQU.
Interaction between ageing and exercise training in the regulation of coronary vascular tone: Role of intracellular calcium signaling and BKCa channels


Investigators: Dr. Sulayma Al-Barwani, Prof. Mohammed Hassan, Ms. Hajer Ba-Omar, Mr. Sultan Al-Siyabi, Dept. Physiology, SQU.

Evaluation of eXforge hCT Efficacy and safety in a real world setting (EXCEED)


Investigator: Dr. Khamis Al-Hashmi, Dept. Physiology, SQU.

Non-dipping blood pressure and metabolic disorder in SQUH patients

Code: MREC #781  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Prof. Mohammed Hassan, Dept. Physiology, SQU.

Sleep apnea and hemodynamic and autonomic profile in patients undergoing CABG: A longitudinal study


Investigator: Dr. Deepali Jaju, Dept. Clinical Physiology, SQUH.

STUDENT RESEARCH PROJECTS

The following student research projects were supervised in the Department: (1) Non-dipping blood pressure and the metabolic syndrome by Prof. Mohammed Hassan; (2) Non-dipping blood pressure and metabolic dysfunction by Prof. Mohammed Hassan, and (3) Effect of siesta (day time sleeping) on dipping status of blood pressure in the Oman Family Study by Dr. Khamis Al-Hashmi.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCES & SEMINAR PRESENTATIONS

Oral Presentations

International


Poster Presentations

International

The Department covers three different disciplines: physiotherapy, occupational therapy, and speech and language therapy. Physiotherapy views human movement as central to the health and well-being of individuals. Physiotherapists identify and maximise movement potential through health promotion, preventive healthcare, treatment and rehabilitation. Occupational therapy helps clients who have orthopaedic, neurological and psychiatric handicaps in their daily living to live a normal life. Surgical and chronically-ill patients can also benefit from it. Speech and language therapy is concerned with improving clients’ communication skills.

Physiotherapy services cover inpatient, outpatient, emergency and day care patients. The services are available seven days a week in all the hospital wards, including pre- and post-cardiac rehabilitation. Treatment modalities include electrotherapy, manual therapy, hydrotherapy, acupuncture, reflexology, neuro-rehabilitation, respiratory therapy, paediatric rehabilitation, cupping, women’s health (pre- and postnatal and female urinary incontinence), sports injuries, public health education and splinting. Physiotherapists are also involved in the clinical teaching of physiotherapy and medical students.

Occupational therapy (OT) services include home modifications, adaptive devices, splinting and help to improve patients’ oral motility, cognitive skills and to overcome learning disabilities. Adaptive devices are advised or provided to compensate any
disability and improve their functional ability. OT aims to enable clients to reach their maximum level of functional independence in all their activities of daily living (ADL) so as to enable them to become independent members of society. In paediatrics, problems such as posture (proper seating); mobility (wheelchair and mobility devices); ADL (adaptive devices); deformities (splinting); hyperactivity; sensory concentration and coordination; integration dysfunction, and dysphagia (feeding and eating troubles) are tackled to bring the child’s development to as normal a level as possible. Treatment includes family counselling and home programmes.

Speech and language therapy services provide assessments, management and treatment for a wide range of cases related to hearing impairment; cognitive, or other developmental delays; birth defects such as cleft lip and/or palate; motor planning problems; dysphagia; traumatic brain injury; neurological problems affecting communication, or voice disorders. In addition, speech and language therapists supervise speech and language therapy students during their training in SQUH. Furthermore, great efforts are made to educate other professionals (e.g. physicians, dieticians and nurses) about speech and language therapy. We also receive other trainee medical students and educate them on the role of speech and language therapists.

Staff

Head of Department
Suleiman Al-Alawi

Deputy Head of Department
Saif Al-Riyami

Therapists
Kauther Al-Busaidi, Senior Chief Physiotherapist A
Omar Al-Tamimi, Chief Physiotherapist A
Nasser Al-Hajri, Chief Physiotherapist B
Said Al-Balushi, Chief Physiotherapist B
Zuwaina Al-Bahri, Chief Physiotherapist B
Ahlaam Al-Mazrui, Chief Physiotherapist B
Hilal Al-Rashdi, Senior Physiotherapist
Najma Al-Mahruqi, Senior Physiotherapist
Huda Al-Saadi, Senior Physiotherapist
Moza Al-Amri, Senior Physiotherapist
Sabah Al-Touqi, Senior Physiotherapist
Safiya Al-Hashmi, Senior Physiotherapist
Madiha Al-Kindi, Senior Physiotherapist
Hasna Al-Rashdy, Senior Physiotherapist
Shaima Al-Saidi, Physiotherapist
Hammad Al-Subhi, Physiotherapist
Mahmoud Al-Hinai, Physiotherapist
Halima Al-Mahrooqi, Physiotherapist
Hilal Al-Balushi, Physiotherapist
Fathiya Al-Harthy, Physiotherapist
Mohamed Al-Shamli, Physiotherapist
Mohamed Al-Hinai, Physiotherapist
Kamla Al-Qasmi, Physiotherapist
Sumaiya Al-Mahrizi, Physiotherapist
Said Al-Yaarobi, Physiotherapist
Senthikumar Ravindran, Physiotherapist
Ibtisam Al-Wardi, Senior Speech & Language Therapist
Highlights of the Year 2013

Services
The Department continued conducting the Parent-Infant Massage classes (parent-infant bonding and attachment). The class was conducted once a week for 1.5 hours; parents learn theoretical and practical aspects of massage—not only how to massage their infants but also infant cues, behavioural states and other issues related to infants such as colic relief. The four main principles of infant massage are interaction, stimulation, relief and relaxation. Nurturing touch provides interaction between parents and infants that promotes bonding, secure attachment and verbal and non-verbal communication. It also enhances stimulation of various body systems and improves learning ability and mind/body awareness. Nurturing touch can help in relieving gas and colic, constipation and growing pain. By achieving the three principles, relaxation will be achieved and babies have better sleeping patterns and more enjoyable play times.

In OT services, a new occupational therapist, Ms. Authaima Al-Farsi, joined the Department of Physiotherapy & Rehabilitation in March 2013.

The speech and language therapy service focused on both adult and paediatric patients (both in- and outpatients) who presented with hearing impairments; cognitive, or other developmental delays; motor planning problems; dysphagia; traumatic brain injury; neurological problems affecting communication or voice disorders. Caregivers also received training as necessary. A variety of therapeutic techniques are employed, including speech and language stimulation, voice exercises, e.g. the Lee Silverman Voice Treatment (LSVT programme) and dysphagia management. In addition, the speech and language therapists supervised newly graduated speech and language therapists during their training in SQUH. Furthermore, great efforts were made to educate other professionals (e.g. physicians, dieticians and nurses) about the speech and language therapist’s role by providing an introduction to the profession, making brochures and handouts and organising a workshop on dysphagia. A Child Development Progress Clinic is run in the hospital by a team consisting of a speech therapist, an occupational therapist and a paediatrician.

The Department published a Rehabilitation Newsletter in June. The Department held its annual Rehabilitation Event focusing mainly on Paediatrics entitled “Our Kids Our Wealth”. The event highlighted the impo-
tance of early detection of and intervention for paediatric diseases and increased awareness of children's rights, particularly those of children with special needs. The “Our Kids Our Wealth” event also organised two additional events; a walk-a-thon in Al-Khuwair in January and an open rehabilitation exhibition in SQUH in April.

**Continuing Professional Development**

During 2013, members of staff participated in the following training courses: Balanced Score Cards, Injaz, Platinum Hotel, Oman; Mulligan Concepts, Turkey General Osteopathic Treatment Course, SQUH; Physical Activity & Clinical Exercise for Cardio-vascular Disease, London, UK; S1 Module: Foundation & Neuroscience Paediatrics, Birmingham, UK; Certificate in Spinal Manual Therapy, Bali, Indonesia; Modern Secretarial and Office Management Course, Centre for Community Service & Continuing Education, Oman; Clinical Neuro-dynamic Course, Dubai, UAE; More Than Words Advanced Workshop, Manchester, UK; Preceptors Training Workshop, Institute of Health Sciences, Oman; Medical Error Disclosure Workshop, SQUH, Oman; It Takes Two To Talk, San Francisco, USA; Paediatric Orthopaedic Symposium, Armed Forces Hospital, Muscat, Oman; Etiquette & Protocol, Oman; Tape Concepts, SQUH, Oman; Accreditation Canada International, Golden Tulip Hotel, Oman; Symposium of Hand Hygiene in Healthcare Settings, SQUH, Oman; Problem-Solving & Decision-Making, SQUH, Oman; Dynamic Core Across The Life Span, SQUH, Oman; General Osteopathic Treatment Course, SQUH, Oman and Global Manual Osteopathic Approach Certification Course, SQUH, Oman.

Members of staff participated in the following one-month clinical attachment in 2013: Sports Injury and Musculoskeletal Departments, Sheffield, UK.

Members of staff participated in the following conferences in 2013: 1st World Congress on Abdominal & Pelvic Pain, Netherlands; 43rd Annual Meeting of the International Continence Society, Spain; Arthroplasty Congress, Dubai, UAE; America Speech & Hearing Association Convention, San Francisco, USA; 2nd GCC International Conference on Patient Safety, SQU, Oman; Oman International Sports Medicine Conference, Oman; 1st National Physiotherapy Students Conference, Oman; 1st Salalah International Physiotherapy & Rehabilitation Conference, Oman; Oman Thoracic 2013 Conference, SQU, Oman; International Conference on Paediatric Intensive Care, Sohar Hospital, Oman, and the Rehabilitation Conference, Sinaw Hospital, Oman.

**Teaching Programmes**

**UNDERGRADUATE CLINICAL PROGRAMME**

The Department participates as an external examiner in applied anatomy theory and practical and professional issues. The Department participates in the quality audit in the Institute of Health Sciences. The Department is involved in clinical teaching, practical hands-on training, and in supervising students and interns both from Oman and abroad. This ranges from undergraduates in physiotherapy, speech therapy and occupational therapy to qualified doctors.
In 2013, 17 students from the Institute of Health Sciences in Muscat had a six-week full-time clinical placement; a physiotherapy student from Jordan had a three-week full-time clinical attachment; an Indian physiotherapist had a six-week full-time clinical attachment; an Omani physiotherapy clinical tutor from the Institute of Health Science had a four-month clinical attachment and an Omani physiotherapy clinical tutor had a two-month clinical attachment.

Tutorial sessions were provided on the Importance of Physical Activity to nutrition students; Infantile Colic for physiotherapy students at the Institute of Health Sciences; Physiotherapy Management in Acute Coronary Syndrome for nurses in the paediatric ward; Women Health Awareness in Nakhal, Oman; Physiotherapy in the Elderly for 5th year medical students; Locomotors Skills for 4th year medical students; Introduction to Physiotherapy for nursing students from the College of Nursing; Physiotherapy Workshop to arts students from the College of Arts & Social Sciences, SQU.

Training Courses & CME Activities
On a rotation basis, each therapist conducts in-service lectures and speaks at the departmental journal club. We also invite doctors, nurses and other paramedical staff to give lectures. Therapists write articles for the bi-annual Rehabilitation Newsletter on a rotation basis. Articles included in the June issue were: Dashboard Femoral Fracture; Infant Colic; Critical Appraisal of Knowledge Management Practice; Mirror Therapy in Stroke Rehabilitation and the Back Clinic.

Department staff ran training courses for SQUH and other hospitals in 2013 on the following topics: Role of Physiotherapy in the Elderly; Basic Acupuncture Course for Health Professionals; Medical Taping Workshop; Tape Concepts; Dynamic Core Across the Life Span, and Global Manual Osteopathic Approach Certification.

The Department also ran a weekly in-service training session for its own staff as well as other SQUH staff including nurses. The topics covered were: Introduction to Career Development Plan; Acoustic Neuroma; Upper Cervical Spine Assessment & Treatment; Allgrove Syndrome; Health & Beauty; Vitamin D Deficiency; Quality of Life Post Renal Transplantation; Problem-Solving & Decision-Making; More than Words; Dysphagia; Hip Replacement; Sensory Integration Theory; ICU Flow Sheet; Art Therapy; Muscle and Joint Bleed in Haemophilia; Dashboard Femoral Fracture; Balance Score Card Concept and Objectives; Sacroiliac Joint Dysfunction; Total Elbow Arthroplasty; Communication and Patient Care; Wilson Disease; Core Stability in Relation with Knee Dysfunction; Knee Injuries; Re-assessment; Asian Knee and Total Knee Arthroplasty; Constant Induced Movement Therapy; Attitude and Positive Thinking; Supportive Positioning in the Neonatal Intensive Care Unit, and Body Language

Lifting and Moving Course for Nurses and Medical Orderlies in the SQUH Directorate of Training & CPD (DTD) programme was conducted once a month by physiotherapists in the Department. Lectures were given in the DTD programme on Other Modalities of Pain Management. The Department participates in the Clinical Methods Course and the Interdisciplinary Activity Week in collaboration with the College of Medicine & Health Sciences. The Department also participated in the evaluation of university students with disabilities.
Clinical & Diagnostic Services
The total number of patients seen by the Department is shown in Table 1.

Table 1: *Number of patients in 2013*

<table>
<thead>
<tr>
<th>Service</th>
<th>No. of inpatients</th>
<th>No. of outpatients</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiotherapy</td>
<td>4,832</td>
<td>7,414</td>
<td>12,246</td>
</tr>
<tr>
<td>Occupational therapy</td>
<td>148</td>
<td>518</td>
<td>666</td>
</tr>
<tr>
<td>Speech and language therapy</td>
<td>283</td>
<td>768</td>
<td>1,051</td>
</tr>
</tbody>
</table>

Research

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

National

6. Al-Tamimi O. Core Stability in Relation to Knee Disorders. 1st Salalah International Physiotherapy & Rehabilitation Conference, Sultan Qaboos Hospital, Salalah, Oman, 31 Aug – 1 Sep 2013.
The Department of Radiology & Molecular Imaging serves the community through advanced innovation and clinical application of imaging sciences. The Department is committed to excellence in the training of the next generation of radiologists, technologists, residents and Senior Clerkship students. The Department’s goal is to provide the highest quality of patient care with predictive, diagnostic and therapeutic imaging-based approaches.

The Department offers specialised diagnostic services and operates state-of-the-art outpatient, inpatient and emergency imaging services. These include magnetic resonance imaging (MRI), digital subtraction angiography (DSA), nuclear medicine (NM), computed tomography (CT), ultrasound (US) and medical physics (calibration of radiation equipment, research, etc.) as well as routine radiological imaging.

The Department has 59 technologists covering all major subspecialties, including body imaging, cardiothoracic imaging, interventional radiology, musculoskeletal radiology, neuro-radiology, nuclear medicine, and paediatric and women’s imaging.

The Department has been fully digitised since May 2002 after the installation of a complete picture and archiving communication system (PACS). Radiological examinations can be viewed by all doctors from any computer outlet at Sultan Qaboos Uni-
University Hospital (SQUH) on an internal web system together with the radiological report. The old PACS/RIS system was replaced with a new system - Philips PACS/RIS: iSite/XIRIS in May 2011. The new system has several significant improvements in the functionality, storage and accessibility over the previous system. The most notable features are: integration with the SQUH hospital information system (HIS) and MedTrack, a modern web-based archiving system which ensures availability of all studies 24/7.

The clinical services offered by the Department are increasing rapidly in parallel with the expansion of SQUH clinical services. Approximately 85,000 studies are performed per year in the Radiology/Nuclear Medicine section alone and the number is rapidly rising. This does not include the services offered by the Medical Physics section to various departments and colleges of SQU as well as the community at large. The Medical Physics services include thermoluminescent dosimeter radiation protection for many institutions in Oman, as well as teaching and the checking of radio-activity in other resources. In addition to diagnostic services, the Nuclear Medicine section also delivers four therapeutic procedures, especially radioiodine therapy for thyroid cancer and hyperthyroidism.

Research, teaching and training at both undergraduate and postgraduate level involves all 13 members of faculty from the Department’s college and hospital staff; they are also involved in the training of radiographers. Radiology technicians are also involved in the teaching of radiographers from the Institute of Health Sciences. We have been successful as a Department in sending our young Omani technologists abroad to study for university degrees.

The teaching and training of Oman Medical Specialty Board (OMSB) radiology residents has been underway since 2005. We have trained 32 radiology residents, of which 10 are graduating this year as radiology specialists. In addition, we train about 20 residents a year from other clinical services who rotate through the Department. We are actively involved in teaching medical students (4th to 7th year in both the old and new curricula).

The Department is divided administratively into six sections, each one with its own supervisor. General Radiology & Mammography; Ultrasound (US) both general and gynecology and obstetrics US; Computed Tomography (CT); Magnetic Resonance Imaging (MRI); Vascular & Intervention, and Nuclear Medicine.

**GENERAL RADIOLOGY & MAMMOGRAPHY**

The clinical mission of this subsection is to provide individually tailored comprehensive evaluation for the early detection and diagnosis of breast diseases.

The service offers state-of-the-art dedicated breast imaging modalities which include full field digital mammography and dedicated breast ultrasound. The other services include stereotactic-guided biopsy and stereotactic hook wire localisations. US-guided interventional procedures such as US-guided biopsies, fine-needle aspiration cytology and clip placements are some of the other procedures provided.
A ‘One-stop Breast Clinic’ is held once a week in collaboration with surgeons and pathologists. The aim is to achieve the diagnosis and establish a management plan for each patient at the initial outpatient visit. This clinic allows optimum patient management, minimises the anxiety associated with symptomatic breast disease and maximises the utilisation of outpatient resources. The patient is thus able to have her clinical examination, radiology imaging, biopsy and pathology results all on the same day. The optimal management of breast cancer patients requires expertise from different specialties. Therefore, a weekly multi-disciplinary team meeting is held so that key professionals from surgery, pathology, medical oncology, and radiology can discuss individual breast cancer patients and contribute to clinical decisions.

NUCLEAR MEDICINE
This section has installed a new hybrid single photon emission tomography and X-ray CT 16 slices (SPECT/CT) machine, the first in Oman. It will improve the accuracy of the diagnosis and decrease the time of examination in many types of studies, such as myocardial perfusion for the detection of coronary arteries disease. Currently, this section has four nuclear medicine technologists. There are four rooms for radionuclide therapy where thyroid cancer and thyrotoxicosis patients are treated with radioactive iodine. Patients can also be treated with yttrium 90 for chronic synovitis. SQUH is the only centre in Oman which provides this service.

INTERVENTIONAL RADIOLOGY
This section carries out angiography procedures with the latest machines. The section has pioneered interventional endovascular treatments in Oman, such as endovenous ablation and mechanical thrombectomy. The section has three vascular interventional radiologists and one neuro-interventional radiologist as well as six technologists and 10 nurses shared between the Department and the cardiac catheter laboratory.

The section’s services including interventional oncology, peripheral vascular disease, trauma embolisation, gastrointestinal tract embolisation, drainage, biopsies and transplant interventions. The following diagnostic and interventional vascular procedures are performed: (1) Aortic, pulmonary, mesenteric and peripheral arteriography; (2) Aortic and peripheral stent-graft placement; (3) Arterial and venous angioplasty and stenting; (4) Arterial and venous thrombolysis and thrombectomy; (5) Arterial and venous embolisation; (6) Arteriovenous malformation treatment; (7) Venous ablation and management of venous insufficiency; (8) Transarterial liver-directed therapy including bland, chemo- and drug-eluting beads; (9) Uterine artery (fibroid) embolisation; (10) Varicocele embolisation; (11) Endocrine tumor venous sampling; (12) Vena cava filter placement; (13) Foreign body retrieval; (14) Dialysis access management, and (15) Venous access and port placement.

The section also performs all the diagnostic and interventional percutaneous non-vascular procedures, such as: (1) Thoracoabdominal, hepatobiliary, renal, gastrointestinal, transplant organ and soft tissue drainages, dilatations and stents; (2) Renal and hepatic biopsy and ablations; (3) Transhepatic cholangiograms; (4) Biliary stenting; (5) Nephrostomy; (6) Ureteral stenting, and (7) Gastrostomy and gastroenterostomy.
ULTRASOUND
This section has a high workload. The examinations include breast US which are performed in the Mammography section, US-guided interventional procedures, and portable US examinations. Currently, the section has 10 sonographers, two of which are dedicated to obstetrics and gynaecology US, while one rotates between obstetrics and gynaecology, and general US.

MEDICAL PHYSICS
The Radiation Protection Service (RPS) provides technical and consultancy support to ensure that sources of ionising radiation and radiation-generating equipment are handled in a manner that complies with Omani regulations and relevant international safety standards. It has been operating since 1990, providing support services, advice and consultations to the University, other ministries and private companies. The RPS constitutes the only fully professional national resource service of its kind in Oman. It is well equipped with a wide range of measuring and calibration equipment for dealing with its main functions in medical and industrial uses of ionising radiation.

All radionuclides purchased by SQUH are first delivered to the Medical Physics section for contamination survey and input into the radionuclide database. After this, a trained nuclear medicine technologist collects them.

The personal dosimetry service provides monitoring of radiation doses received by radiation workers to the university and external organisations (e.g. Ministry of Defense, Technical Inspection Services and Muscat Private Hospital). The badges are worn for one calendar month and then read by the Department TLD reader. The reported doses are maintained for all staff. Personnel reports are sent to the employers to make them available to each radiation worker.

Radiation measuring, instruments should be calibrated annually, sometimes more frequently depending on the instrument and its use. The RPS provided calibration and maintenance services for portable radiation survey instruments (Mini900, Mini1000, Ludlum) used in SQU/SQUH, external organisations and industries throughout Oman (e.g. Ministry of Environment & Climate Affairs, Petroleum Development of Oman, Shal-eem Petroleum, Midwesco and Halliburton).

Annually quality control (QC) tests are performed by the medical physicists on X-ray equipment. Maintaining a QC programme ensures that image quality is maintained whilst reducing the radiation dose to patients and staff, as per ALARA (As Low As Reasonably Achievable) principles. The results are sent to the relevant departments. In case of malfunction, a report is sent to the Biomedical Engineering Department where the necessary action is taken. The tests are repeated after repair.
US units in SQUH undergo annual QC tests to identify problems with the units before they cause diagnostic problems. The results are conveyed to the relevant departments. If a unit is found to be malfunctioning a report is sent to the Biomedical Engineering Department. The tests are repeated after repair.

Daily measurements for image uniformity were carried out by the technical staff of the Nuclear Medicine section. The medical physicists perform extensive monthly quality assurance tests. Daily radiopharmaceutical QC tests are also performed before radiopharmaceuticals are administered to patients. Dose calibrators for patients are tested daily for consistency and also annually.

Medical physicists perform acceptance testing and also commission newly purchased US, X-ray and SPECT/CT machines.

Medical physicists provide support to the Radiation Therapy Unit (Psychiatry Department) by performing patient and room surveys, recording radiation doses taken from patients, and giving instructions to patients at discharge to protect relatives and the environment from unnecessary radiation exposure and contamination.

Liquid and solid radioactive waste from the Nuclear Medicine section and the I-131 Therapy Unit is regularly monitored and records are kept in the Medical Physics section. When necessary the waste is stored in a designated storage area and disposed of by the medical physicists only when it becomes non-radioactive.

Gamma spectroscopy is a very sensitive method for identifying presence of radionuclides and measuring very small concentrations in samples. The measurements are routinely performed on irrigation water and sludge samples from the sewage treatment plant at SQU for radionuclides originating from the nuclear medicine department and particularly I-131 from the therapy unit. Certain foodstuffs from Omani industrial plants for export to certain countries require a certificate stating they are free from man-made radionuclides. Such certificates are supplied along with an analysis report for each sample. Petroleum companies have been identifying naturally-occurring radioactive material (NORM) at several of their production facilities. Samples of water, oil, scale and sludge are regularly sent for gamma spectroscopy analysis by the RPS to determine the appropriate method of disposal.
Staff

Head of Department
Faisal Al-Azri, Senior Consultant

Deputy Head of Department
Humoud Al-Dhuhli, Senior Consultant

Faculty
Dilip Sankhla, Senior Consultant
Samir Hussein, Senior Consultant
Sukhpal Sawhney, Senior Consultant
Haddia Bererhi, Senior Consultant
Nader Atari, Associate Professor
Rashid Al-Sukaiti, Senior Consultant
Anupam Kakaria, Consultant
Sinan Al-Azawi, Consultant
Ibrahim I. Suliman, Assistant Professor
Alaa Manzalawy, Senior Registrar
Rana S. Hamid, Senior Registrar
Amna Al-Jabri, Demonstrator
Badriya Al-Qassabi, Senior Registrar (Resident)
Eiman Al-Ajmi, Registrar (Resident)
Khulood Al-Riyami, Registrar (Resident)
Saleh Al-Baawain, Senior House Officer (Resident)

Technical Staff
Ahmed Al-Shuhaimy, Departmental Superintendent
Per Rude, Deputy Superintendent, Senior Chief Radiographer (A)
Salvador De Vera, Chief Technologist (A)
Virginia Ablen, Chief Technologist (A)
Antonio Velarde, Chief Technologist (A)
Merlie Vanderlippe, Chief Technologist (A)
Editha San Diego, Chief Technologist (B)
Manuel Gaerlan, Chief Technologist (B)
Meda Bersaba, Senior Technologist (A)
Ahmed Abdou, Senior Technologist (A)
Mohammed Al-Abri, Senior Technologist (B)
Abdullah Al-Siyabi, Senior Technologist (A)
Adnan Al-Kharousi, Senior Technologist (A)
Matheo Dilao, Senior Technologist (B)
Mahmood Al-Abri, Senior Technologist (B)
Faiza Al-Salmi, Senior Technologist (A)
Umama Al-Ajmi, Senior Technologist (A)
Aziza Al-Jabri, Senior Technologist (A)
Mohammed Al-Saqqari, Senior Technologist (B)
Nabila Al-Hesani, Senior Technologist (B)
Ahmed Al-Shuhaimi, Senior Technologist (B)
Sultan Al-Naamani, Senior Technologist (B)
Hamoud Al-Ghafri, Senior Technologist (B)
Aida Al-Rahbi, Technologist (A)
Rania El-Tigani, Senior Technologist (B)
Hanan Al-Qassabi, Technologist (A)
Khitam Al-Hijri, Technologist (A)
Ruqaya Al-Rawahi, Senior Technologist (B)
Ubna Al-Esry, Technologist (A)
Mathew George, Technologist (A)
Kalthoom Al-Shesawi, Technologist (A)
Victor Arulnathan, Technologist (A)
Kuriakose K. P, Technologist (A)
Unnikrishnan Nair, Technologist (A)
Luz Solo-Esguerra, Senior Technologist (B)
Joji Mathew, Technologist (A)
Ahmed Al-Anqoodi, Technologist (B)
Faisal Al-Ghusaini, Technologist (B)
Shurooq Al-Alawi, Technologist (A)
Lourdes Hernandez, Technologist (A)
Paul Martinez, Technologist (A)
Arthur De Guzman, Chief Technologist (B)
Marievic De Guzman, Senior Technologist (A)
Lovella Parfina, Senior Technologist (B)
Thomas Jefferson B., Senior Technologist (B)
Ravichandran V. K., Senior Technologist (B)
Devid Devaraj, Technologist (A)
Sonya Dominic, Nurse
Aleyamma Lalu, Nurse
Nusrat Rizvi, Nurse
Choong L. Joo, Nurse
Chanthriga Govindasamy, Nurse

Highlights of the Year 2013

NEW EQUIPMENT AND SERVICES
The Nuclear Medicine section has installed a new hybrid machine for single photon emission tomography and X-ray CT 16-slices (SPECT/CT), which is the first in Oman and the Middle East. It will improve the accuracy of the diagnosis and decrease time of examination in many types of studies such as myocardial perfusion for the detection of coronary arteries disease.

The Interventional Radiology section has acquired a new Angiography machine, the Philips Clarity System FD 20/20. It is only the second one of its kind in the Middle East and Gulf Region. The Interventional Radiology Room is the first hybrid suite in Oman.

In 2013, transcranial Doppler imaging (TCDI) was introduced for severe haemoglobinopathy patients. Several TCDI awareness days for both paediatric and adults were successfully held.

WORKSHOPS AND COURSES
An Interventional Radiology Workshop was held on 7 February 2013 organised by Dr. Rashid Al-Sukaiti. The hands-on Interventional Radiology Workshop was held from 17–18 December 2013. The Mammography and Breast Biopsy Workshop was held on 28 March 2013 organised by Dr. Sukhpal Sawhney. The Digital Radiography Workshop was held on 5 October 2013 organised by Dr. Sinan I. Al-Azawi. Dr. Samir Hussein

Moath Al-Jabri, Technologist (B)
Alya Al-Julandani, Technologist (B)
Nawal Al-Kharusi, Senior Technologist (B)
Dalal Al-Shabibi, Technologist (A)
Rabiya Al-Mahrouqi, Senior Technologist (B)
Medussa Samar, Senior Technologist (B)
Amani M. Saif, Senior Technologist (B)
Ruqaya A. Ali, Technologist (A)
Muna Al-Muqbali, Technologist (A)
Abdullah Al-Azwani, Technologist (A)
Vinod Raj, Senior Technologist (B)
Ramachandran Murugesan, Senior Technologist (B)
Prathap J. W. M. V., Senior Technologist (B)
Muzna Al-Harthy, Technologist (B)

Medical Physics
Ibtissam Al-Maskery, Medical Physicist
Amaal Al-Rasbi, Medical Physicist
Hilal Al-Zeheimi, Medical Physicist
Naima Al-Naamani, Medical Physicist
Mohammed Al-Subhi, Coordinator

Administrative and Clerical Staff
Rhodora Campo, Coordinator
Laddie Lara, Coordinator
Jeraldine Arante, Coordinator
Fatma Al-Bahrani, Coordinator
Mirfat Al-Kharusi, Coordinator
Mohammed Al-Farai, Clerk
Khamis Al-Farsi, Clerk
Sultan Al-Busaidi, Medical Orderly

Nursing Staff
Warda S. Al-Lawati, Nurse
Bindu V. P., Nurse
Marichu Lorica, Nurse
Bini Prathapan, Nurse
Lenny Netto, Nurse
was a facilitator at the Evidence-Based Medicine Workshop held at the Oman Medical Specialty Board in January 2013. He was also a facilitator and a member of the organising committee for both the Workshop on Student Assessment and the Certificate in Health Professions Education course. Both were held at SQU in February 2013.

Teaching Programmes

UNDERGRADUATE PRECLINICAL PROGRAMME
The Department teaches over 100 4th year medical students in the Integrated Lecture Series (ILS) in Anatomy in coordination with the Department of Anatomy and participates in the Clinical Skills Examination for the same students.

The Department teaches approximately 40 5th year students in the ILS, contributing to the following courses: Respiratory System; Cardiovascular System; Gastro-Intestinal System; Neurology; Infectious Disease, and Uro/Nephrology.

UNDERGRADUATE CLINICAL PROGRAMME
In Phase III of the curriculum, the Department provides a rotation for Senior Clerkship students. There are a total of 20 students per group rotating every two weeks: 10 are in SQUH, five at Royal Hospital and five at Khoula Hospital. Lectures include radiation safety to pre-clinical medical students doing their Senior Clerkship. These courses are designed to teach the students the basic radiation safety for patients and staff that a clinician should know before starting to practise.

For approximately 30 7th year medical students, the Department contributes to the Obstetrics & Gynaecology lecture.

The Medical Physics section offers the following four medical physics courses for College of Science physics students: Monitoring in Medical Physics; Ionizing Radiation; Non-ionizing Radiation and Radiobiology, as well as the Medical Physics Projects A & B.

POSTGRADUATE PROGRAMME
For OMSB radiology residents, 5–7 residents rotate through the Department on a four-week rotation with a total of about 37 residents. Courses include lectures in physics for radiology residents preparing for Parts 1 and 2 of the Fellowship of the Royal College of Radiologists (FRCR) examination.
Clinical & Diagnostic Services
A total of 1,491 patients had nuclear medicine studies in 2013 and most of these patients had more than two nuclear medicine procedures during their studies, although there were few patients to study from January to April due to the installation of the new SPECT/CT machine.

There are four rooms for radionuclide therapy where 73 thyroid cancer and 90 thyrotoxicosis patients were treated with radioactive iodine in 2013. In addition three patients were treated with yttrium 90 for chronic synovitis.

The US section was again very busy in 2013 with a total of 12,661 US examinations performed.

Table 1: Radiology and molecular imaging examination workload in 2013

<table>
<thead>
<tr>
<th>Service</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General X-ray (plain X-ray and intravenous urogram)</td>
<td>47,021</td>
</tr>
<tr>
<td>Special procedures (fluoroscopy-guided procedures)</td>
<td>1,125</td>
</tr>
<tr>
<td>Ultrasound (inc. ultrasound-guided interventions)</td>
<td>16,611</td>
</tr>
<tr>
<td>CT scanning (inc. CT-guided interventions)</td>
<td>8,741</td>
</tr>
<tr>
<td>Vascular and intervention (inc. oral health procedures)</td>
<td>1,043</td>
</tr>
<tr>
<td>Nuclear medicine</td>
<td>1,637</td>
</tr>
<tr>
<td>Bone densitometry</td>
<td>1,083</td>
</tr>
<tr>
<td>Magnetic resonance scanning</td>
<td>3,314</td>
</tr>
<tr>
<td>Mammography</td>
<td>485</td>
</tr>
<tr>
<td>Oral health</td>
<td>3,013</td>
</tr>
<tr>
<td>Lithotripsy</td>
<td>162</td>
</tr>
<tr>
<td>Total</td>
<td>84,235</td>
</tr>
</tbody>
</table>

CT = computed tomography.
Research

RESEARCH PROJECTS

 Optical coherence tomographic patterns in diabetic macular edema: Prediction of visual outcome after intravitreal bevacizumab (Avastin) injections

 Code: MREC #708  Dates: 2013  Value: Unfunded  Project Approval: SQU

 Investigator: Dr. Mohammed Al-Abri, Dept. Radiology & Molecular Imaging, SQU.

 Optical coherence tomographic patterns in diabetic macular edema (DME): Prediction of outcome after intravitreal triamcinolone acetonide (Triesnaces) injections

 Code: MREC #709  Dates: 2013  Value: Unfunded  Project Approval: SQU

 Investigator: Dr. Mohammed Al-Abri, Dept. Radiology & Molecular Imaging, SQU.

 Prognostic value of myocardial perfusion imaging

 Code: MREC #710  Dates: 2013  Value: Unfunded  Project Approval: SQU

 Investigator: Dr. Samir Hussein, Dept. Radiology & Molecular Imaging, SQU.

 Structured radiology reporting: A feedback of clinicians at a university hospital in Oman

 Code: MREC #717  Dates: 2013  Value: Unfunded  Project Approval: SQU

Figure 1: Total examinations performed between 2009–2013.
Investigator: Dr. Rana S. Hamid, Dept. Radiology & Molecular Imaging, SQU.

A retrospective study of the effect of iodised salt on thyroid cancer patients presented in SQUH before and after iodised salt was introduced into the market

Code: MREC #719  Dates: 2013  Value: Unfunded  Project Approval: SQU

Investigator: Dr. Samir Hussein, Dept. Radiology & Molecular Imaging, SQU.

Safety and complications of tunneled cuffed double lumen dialysis catheters in Omani patients: Clinical and radiological perspective


Investigator: Dr. Rana S. Hamid, Dept. Radiology & Molecular Imaging, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications

CONFERENCE & SEMINAR PRESENTATIONS

Oral Presentations

National
Conference Posters

International

National
1. Sankhla D. The role of thyroid scintigraphy with Tc99m pertechnetate in defining the spectrum of thyroid disorders in young Omani. SQU University Day, SQU, Oman, 5 May 2013.

Seminar Presentations

National
The Department’s mission is to teach and train students and doctors, conduct research and provide specialised clinical services and patient care.
Staff

Head of Department
Chris Grant, Professor (to Oct 2013)
Hani Al-Qadhi, Senior Consultant (from Oct 2013)

Faculty
Khalifa Al-Wahaibi, Assistant Head of Department
Abdullah Al-Harthi, Senior Consultant (Trauma)
Nayil Al-Kindy, Senior Consultant (General)
Norman Machado, Senior Consultant (General)
Pradeep Chopra, Senior Consultant (General)
Rashid Al-Abri, Senior Consultant (ENT)
Krishna Prasad, Senior Consultant (Urology)
Qassim Al-Busaidi, Senior Consultant (Urology)
Ashok Sharma, Senior Consultant (Cardiothoracic)
Hilal Al-Sabti, Senior Consultant (Cardiothoracic)
Rajeeva Pieris, Senior Consultant (Cardiothoracic)
Tarek Alameddine, Senior Consultant (Cardiothoracic)
Hatem Sherif, Senior Consultant (Paediatric)
Mohamed Khalid, Senior Consultant (Orthopaedic)
Sultan Al-Maskari, Senior Consultant (Orthopaedic)
Rajeev Kariyattil, Senior Consultant (Neurosurgery)
Unnikrishnan M., Senior Consultant (Neurosurgery)
Adil Al-Ajmi, Consultant (General)
Sreedharan V. K., Consultant (General)
Mohammed Al-Hashmi, Consultant (Endocrine)
Mohammed Okbi, Consultant (ENT)
Yahya Al-Badaai, Consultant (ENT)
Joseph Mathew, Consultant (Urology)
Mohammed Al-Marhoon, Consultant (Urology)
Adil Al-Kindi, Consultant (Cardiothoracic)
Zainab Al-Balushi, Consultant (Paediatric)
Kamran Malik, Senior Registrar, (General)
Muhammad Baloch, Senior Registrar (General)
Suresh Kannan, Senior Registrar (General)
Mooayad Ahmed, Senior Registrar (General)
Shahzad Younas, Senior Registrar (General)
Zaid Raouf, Senior Registrar (General)
Arif Kolethekkat, Senior Registrar (ENT)
Sudesh Kumar, Senior Registrar (ENT)
Wameed Al-Bassam, Senior Registrar (ENT)
Khalid Rahman, Senior Registrar (Urology)
Shahid Aquil, Senior Registrar (Urology)
Ehab Rajab, Senior Registrar (Cardiothoracic)
Mirdavron Mukaddirov, Senior Registrar (Cardiothoracic)
Mohammed Siddiqi, Senior Registrar (Cardiothoracic)
Paresh Kuba, Senior Registrar (Cardiothoracic)
Rahil Muzaffar, Senior Registrar (Orthopaedic)
Venkatesh G., Senior Registrar (Neurosurgery)
Ahmed Yaseen, Senior Registrar (Orthopaedic)
Najib Draz, Registrar (General)
Sareyah Al-Sibai, Registrar (General)
Ghassan Elshafie, Registrar (General)
Vivek Abraham, Registrar (ENT)
Omar Sharef, Registrar (Urology)
Ibrahim Abdelhady, Registrar (Vascular)
Adham Said, Registrar (Orthopaedic)
Madni AbdulAziz, Registrar (Orthopaedic)
Mohammed Nagy, Registrar (Orthopaedic)
Ali Al-Hilali, Registrar (Orthopaedic)
Khalid M. Bhatti, Registrar (Paediatric)
Mohammed Toufique, Registrar (Paediatric)
Koshy Kochumen, Registrar (Neurosurgery)
Abdullah Al-Jabri, Senior House Officer (General)
Yousuf Al-Shaqsi, Senior House Officer (Paediatric)
Mohammed AbdelRahim, Senior House Officer (General)
Ahmed Essam, Senior House Officer (General)
Edem Ziadinov, Senior House Officer (Cardiothoracic)
Al Ghalya Al-Maawali, Clinical Lecturer (General)
Sadiq Al-Khaboori, Clinical Lecturer (General)
Humaid Al-Adawi, Senior House Officer (General)
Qasim Al-Abri, Senior House Officer (Cardiothoracic)
Humaid Al-Farai, Senior House Officer (Orthopaedic)

Support Staff
Balan Baskaran, Perfusionist
Sayed Rizvi, Perfusionist
Zainab Al-Hashmi, Perfusionist
Saif M. Al-Kharusi, Technician
Badar Al-Mazidi, Technician
Maria T. Ablen, Coordinator
Ruel Natividad, Coordinator
Luluwah Al-Farsi, Coordinator

Highlights of the Year 2013
The Department hosted an international conference, the Oman International Vascular Conference at the Al Bustan Hotel, Muscat, from 13–14 March. Dr. Khalifa Al-Wahaibi was the chief organiser. A total of 34 international guests’ speakers participated in the conference. The Orthopedic Surgery Division organised the 1st Oman Hand & Wrist Symposium at the Al-Fahm Hall, Cultural Centre, SQU, Oman, from 2–3 March 2014.

Teaching Programmes

UNDERGRADUATE PRE-CLINICAL PROGRAMME
The Department was also involved in the following courses in Phase II of the new curriculum: the Locomotor System; the Uro-Reproductive System; Endocrinology; the Human Nervous System, and the Alimentary Module.

UNDERGRADUATE CLINICAL PROGRAMME
The Department participated in the teaching for the Junior Clerkship rotation, catering for 117 students in 2012–2013. The students rotated in groups of 18–21; each group spent two weeks at Sultan Qaboos University Hospital (SQUH), the Royal Hospital and Khoula Hospital. For the Pre-clerkship rotation, the Department catered for 96 students in 2013. The students rotated in groups of 8–14 and spent their 10-week rotation in SQUH only. For the 7th year senior rotation, the Department received final year students in groups of 14–21 in rotation for seven-week courses; altogether, there were 82 students. The 7th year students had their final M.D. examination in June 2013; this was the final rotation of the old curriculum. The Senior Clerkship rotation
(new curriculum) began in January 2013. The Department catered for 111 students in groups of 18–21. Each group rotated for two weeks in the ENT Unit and three weeks in Surgery as part of the surgery and allied block.

**POSTGRADUATE PROGRAMMES**

**Internship**
A total of 55 interns undertook their surgical rotations in the Department in the year 2013.

**Oman Medical Specialty Board (OMSB) Residents**
For the OMSB Residency Programme, 24 residents undertook their rotations in general surgery in the Department in the academic year 2013. A total of 48 weekly lectures for the senior residents and 48 weekly lectures for junior residents were delivered.

**Training Courses & CME Activities**
Dr. Joseph Mathew organised a Laparoscopy Workshop in association with Arab-German Urology at SQUH on 7–8 October 2013.

Dr. Pradeep Chopra delivered a talk on 'Physiology of wound healing: Which dressing to choose?' at the Wound Study Days for the SQUH nurses on 19 January, 23 February and 1 September 2013. He also delivered a talk on 'Etiology and the management of peripheral neuropathy and vasculopathy in diabetic patients' on Diabetic Foot Day, 17 February 2013 at SQUH.

**Research**

**RESEARCH PUBLICATIONS & BOOKS**

**Journal Publications**


**CONFERENCE & SEMINAR PRESENTATIONS**

**Oral Presentations**

**International**


**National**


**Poster Presentations**

**International**


2. Venkatesh G. Post-operative assessment of dorsolumbar pedicle screw placement accuracy using CT scan at Sultan Qaboos University Hospital. XV WFNS World Congress of Neurosurgery, Seoul, Korea, 8–13 Sep 2013.
Medical Library

Overview
The main thrust of our library policy has always been the evaluation and development of the Medical Library (ML) resources and the increasing the effectiveness of our services. A major achievement in this respect was online searching to support the programmes of the College of Medicine & Health Sciences (COMHS), College of Nursing and University Hospital (SQUH), especially in respect to research activities.

The ML replaces around 300 to 500 books every year and is planning on digitalising the audio video stock which includes 1,300 tapes.

Staff

Director
Mohammed Al-Wardi

Deputy Director
Mariam Al-Sinani

Librarians
Mohammed Al-Higgi, Chief Librarian C
Huda Al-Farsi, Chief Librarian C
Huda Al-Haddabi, Chief Librarian C
Saif Al-Muharbi, Senior Librarian B
Abdulla Al-Hinai, Librarian
Jassim Al-Hasani, Librarian
Saif Al-Abri, Assistant Librarian

Support Staff
Sultan Al-Shereiqi, Clerk/Coordinator
Amal Al-Hashami, Clerk
Hanan Al-Jashami, Clerk
Ahmed Al-Ghafri, Graphic Camera Operator
Activities in 2013

CIRCULATION
In this period, the total number of checked-out materials was 1,508 as compared to 1,813 in 2012. The numbers of users increased from 3,736 users in 2012 to 4,896 in 2013. Also, the number of external users increased from 8 in 2012 to 58 in 2013. Moreover, the number of orientation groups increased by five from 315 in 2012 to 320 in 2013. Finally, the number of users from the Oman Medical Specialty Board decreased to 147 in 2013 from 152 in 2012.

ACQUISITIONS
In 2013, 74 new book titles were added to the library collection. This number was made up of 18 books from Dowson, 39 monographs received gratis from the Ministry of Health, Oman, the World Health Organization and others, as well as 17 theses from the COMHS.

SERIAL DEPARTMENT
In 2013, the number of subscription print journals decreased from 74 to 69. On the other hand, the electronic journal subscriptions increased from 185 to 191 as we move gradually to using electronic journals. The number of database subscriptions remained the same at four databases. A total of 39 journals from the Gulf Cooperation Council region were received gratis. In 2013, the ML sent three batches of books for binding; these included 393 volumes and 1,555 issues at a cost of OMR 1,807.

INTERLIBRARY LOANS
The total number of requested articles from different libraries by the ML was 110; the number of articles sent to different libraries was 491. A total of 216 articles were requested by different departments of the COMHS and SQUH. In addition, 22 articles were requested by the Oman Medical Specialty Board and 44 articles were requested by postgraduate students.

TRAINING OF LIBRARY USERS
A total of 134 students were trained to use the library. Of these, 12 students were from COMHS, 30 students were from the Language Center, 20 students were from the SQUH Central Sterile Supply Department, 12 students were from the Department of Library Science & Information in the College of Arts & Social Science and 60 students were from other departments and institutions.
### E-RESOURCES STATISTICS

**Table 1: Searches performed on bibliographic databases**

<table>
<thead>
<tr>
<th>Databases</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CINAHL-R-Database (from AAS)</td>
<td>518</td>
<td>409</td>
<td>652</td>
<td>2048</td>
<td>667</td>
<td>522</td>
<td>1155</td>
<td>173</td>
<td>397</td>
<td>735</td>
<td>999</td>
<td>1055</td>
<td>9330</td>
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<tr>
<td>McGraw Hill’s Access Medicine Package</td>
<td>90</td>
<td>233</td>
<td>301</td>
<td>142</td>
<td>96</td>
<td>89</td>
<td>85</td>
<td>98</td>
<td>159</td>
<td>220</td>
<td>251</td>
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<td>1929</td>
</tr>
<tr>
<td>Medline (from PRQ)</td>
<td>15</td>
<td>87</td>
<td>184</td>
<td>89</td>
<td>213</td>
<td>155</td>
<td>83</td>
<td>20</td>
<td>36</td>
<td>133</td>
<td>142</td>
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<td>Medline (from AAS)</td>
<td>648</td>
<td>1282</td>
<td>2144</td>
<td>3229</td>
<td>769</td>
<td>504</td>
<td>1133</td>
<td>162</td>
<td>347</td>
<td>705</td>
<td>1005</td>
<td>974</td>
<td>14283</td>
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<tr>
<td>Up-To-Date Medical Package</td>
<td>5192</td>
<td>4254</td>
<td>3813</td>
<td>5560</td>
<td>2133</td>
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<td>3676</td>
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<td>1140</td>
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<td></td>
<td><strong>68,420</strong></td>
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</table>

**Table 2: Full text downloads from e-journals**

<table>
<thead>
<tr>
<th>Databases</th>
<th>Jan</th>
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<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All BMJ &amp; BMJ Group journals</td>
<td>557</td>
<td>672</td>
<td>863</td>
<td>641</td>
<td>1033</td>
<td>606</td>
<td>608</td>
<td>415</td>
<td>677</td>
<td>779</td>
<td>1015</td>
<td>1075</td>
<td>8941</td>
</tr>
<tr>
<td>Lippincott (Ovid)</td>
<td>90</td>
<td>226</td>
<td>118</td>
<td>104</td>
<td>160</td>
<td>75</td>
<td>177</td>
<td>1126</td>
<td>1360</td>
<td>164</td>
<td>172</td>
<td>61</td>
<td>3833</td>
</tr>
<tr>
<td>Nature Publishing Group journals (13 titles)</td>
<td>142</td>
<td>141</td>
<td>203</td>
<td>220</td>
<td>148</td>
<td>103</td>
<td>102</td>
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<td>101</td>
<td>203</td>
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IT SERVICES

In 2013, a total of 2,162 e-journals could be accessed through our website (www.squ.edu.om/med-Lib/index.htm) as well as Science Direct, Oxford Journals, UpToDate online, Academic Search Complete, Cambridge University Press, Lippincott Williams & Wilkins, Springer Link, the BMJ group and Taylor Francis Online. Databases such as Medline, Cinhal, Biological Abst, Access Medicine and ISI Web of Knowledge and two books databases (e-brary and e-books) could also be accessed through our website.

STAFF DEVELOPMENT

Conferences and Workshops

In order to develop and improve the skills of ML staff, various staff members were sent to different conferences, workshops and courses as follows: (1) Mr. Qasim Al-Harrasi, Mr. Abdullah Al-Hinai, Mr. Saif Al-Abri, Mr. Mohammed Al-Higgi and Mr. Sultan Al-Shereiqi attended a conference at SQU in February 2013, Health Information Under Microscope: Challenges and Solutions; (2) Mr. Mohammed Al-Higgi attended a one-week training course in Malaysia, Building and Managing Digital Collections of Libraries and Information Centers; (3) Mr. Saif Al-Abri attended a conference in Singapore in August 2013, the IFLA Library and Information Congress; (4) Mr. Mohammed Al-Higgi and Ms. Huda Al-Haddabi attended a workshop in November 2013, New Cataloging Rules: Describe the sources and accessible RDA; (5) Mr. Sultan Al-Shereiqi attended a three-month English Course at SQU from 29 September 2013 – 9 January 2014; (6) Mr. Abdullah Al-Hinai attended a three-month intensive English course in Bristol, UK, from October 2013 – January 2014; (7) Ms. Maryam Al-Sinani attended a three-day short course on Assertiveness Skills in Malaysia in December 2013.
Medical Education & Informatics Unit

Overview

The Medical Education & Informatics Unit (ME&IU) was established under the Dean’s Office in 2006 with a mission to raise the standards of medical education in the College of Medicine & Health Sciences (COMHS). The Unit has a full-time staff, but draws mainly on the voluntary participation of staff from the different departments of the COMHS and from the Ministry of Health, who have either a formal qualification or a strong interest in the field of medical education.

The ME&IU is very active in providing educational support to the COMHS, the University Hospital (SQUH) and affiliated staff and other health professionals through faculty development workshops in the areas of teaching and learning, assessment and e-learning. The ME&IU has also established the IDEAL (International Databank for Enhancement of Assessment and Learning) office which houses the IDEAL secure assessment databank, liaises with the IDEAL Consortium Office and offers the service of item analysis.

The Clinical Skills Laboratory plays a very active role in the COMHS as it is equipped with a variety of instruments, simulators and mannikins to support the training of clinical skills. It has evolved into a learning environment that supports a wide range of skills across the spectrum of the curriculum and facilitates the acquisition of theoretical and clinical knowledge. The facility provides medical students with the opportunity to develop and maintain competence in clinical skills and allows them to practice physical assessment and procedural skills safely—and to demonstrate these skills under simulated conditions prior to attempting them on a patient.

The Medical Informatics section of the Unit strengthens the integration of medical informatics technologies in teaching, research and service; increases the competency of faculty in the use of medical informatics tools; conducts effective telemedicine conferences and workshops with international institutes; evaluates the effectiveness of various medical informatics technology products in teaching and learning medicine; analyses and specifies the COMHS requirements for medical informatics equipment and infrastructure; supports hardware maintenance, and provides a troubleshooting service.

Staff

Head of Unit
Nadia Al-Wardy, Associate Professor, Biochemistry

Faculty
Ken Masters, Assistant Professor, Medical Informatics
Ibrahim Inuwa, Associate Professor, Anatomy
Support Staff
Buthaina Baqar, Counselling and Guidance Specialist
Hisham A. Hadi, College IDEAL Administrator
Moosa Al-Rawahi, e-Learning/e-Assessment and Multimedia Designer
Salim Al-Harthi, Programmer
Bader Al-Ismailli, Computer Technician
Talal Al-Kindi, Computer Technician
Almaqdad Al-Lawati, Systems Analyst
Somaya Al-Shuraqi, Systems Analyst
Aida Al-Hajri, Computer Technician
Thuraiya Al-Batashi, Computer Technician
Taha M. El-Sayed, Chief Technician, Clinical Skills Laboratory
Ahmed Al-Hadhrami, Technician, Clinical Skills Laboratory
Rahima Al-Maashari, Technician, Clinical Skills Laboratory
Asila Al-Harthy, Coordinator

Activities in 2013
A new staff member, Ms. Buthaina Baqar, Counselling and Guidance Specialist, joined the Unit at the end of 2013.

In this period, several new workshops were conducted by the ME&IU. These were attended by staff members from the COMHS, SQUH and the Ministry of Health.

During the year 2013, around 2,150 medical students were trained in the Clinical Skills Laboratory. Several self-practice sessions on all procedures taught during the courses and objective structured clinical examinations were conducted in the Laboratory.

The Clinical Skills Laboratory was also used for conducting local and international workshops:
- International Orthopedic Workshop on Hand Surgery
- National US workshop in Anaesthesia (central and subclavian catheters insertion)
- Certificate Course in Health Professions Education (CHPE)
- Membership of Royal College of General Practitioners (MRCGP) for the Family Medicine & Public Health Dept.
- National Workshop for Emergency Medicine (US and trauma cases)
- Pre-Congress Course on Hysteroscopy and Basic-Intermediate Laparoscopic Gynaecological Surgery

Teaching Programmes

UNDERGRADUATE PRECLINICAL PROGRAMME

The Medical Informatics section of the ME&IU was involved in teaching the following core and elective courses to undergraduate medical and nursing students: Medical Informatics I and II, and Health Informatics.

Training Courses & CME Activities

Several educational workshops, conducted by internationally-renowned faculty and local staff in medical education, were offered by the Unit.

A two-day workshop on Data Analysis using the Statistical Package for the Social Sciences, with a total of 25 participants from the COMHS and SQUH was conducted in January 2013 by Dr. Syed G. A. Rizvi, Department of Family Medicine & Public Health and Member of the ME&IU.

The CHPE (Certificate Course in Health Professions Education), a three-day course in February in 2013, was conducted by Prof. Hossam Hamdy, University of Sharjah, United Arab Emirates; Prof. Raja Bandaranayake, Sydney, Australia, and Dr. David Taylor, Liverpool, UK. A total of 45 COMHS, SQUH, affiliated staff and other health professionals participated in the course.

A three-day Student Assessment Workshop was also held in February in 2013, conducted by Prof. Bandaranayake and Dr. David Taylor. A total of 25 COMHS, SQUH and affiliated staff participated in the workshop.

In the lecture series in medical education, two lectures were presented: Edgar Dale’s Learning Pyramid and Medical Education, in February 2013 by Dr. Ken Masters, Assistant Professor of Medical Informatics in the ME&IU; and Objective Structure Teaching Evaluation (OSTE), in March 2013 by Dr. Omar Al-Hussaini, Ministry of Health, and member of the ME&IU.

Moodle Workshops were conducted twice in 2013, in April and October. Two workshops on e-assessment were conducted in April and November 2013 entitled How To Create and Mark Assignments. Two workshops on Creating a Stunning & Eye Catching Presentation using Prezi Application were conducted in March and December 2013. The aim was to demonstrate how Prezi tools can enhance the effectiveness of delivering a message through a presentation.
Research

RESEARCH PROJECTS

Doctors as content creators: Teaching medical students to develop mHealth Apps


Investigator: Dr. Kenneth Masters, Medical Education & Informatics Unit, SQU.

RESEARCH PUBLICATIONS & BOOKS

Journal Publications


CONFERENCE & SEMINAR PRESENTATIONS

Poster Presentations

International


Sultan Qaboos University Medical Journal

Overview

Sultan Qaboos University Medical Journal (SQUMJ) was founded in 1997. By December 2013 a total of 26 issues had been published, with a total of 593 articles. SQUMJ’s Editorial Board has 38 members; all of them are staff of either the College of Medicine & Health Sciences (COMHS), Sultan Qaboos University Hospital (SQUH) or the Armed Forces Hospital, Muscat (AFH).

The vision of SQUMJ is to be a leading regional medium of medical and scientific communication covering both clinical and basic science research and other medically relevant observations that will be recognised and accepted internationally. Its objectives are to:

- Promote a culture of scientific publications at SQU as well as build capacity in all aspects of medical publishing and enhance the research profile of the University.
- Provide a medium for dissemination of medical research by attracting high-quality original research and review articles, special contributions and editorials, brief communications, case reports, etc. from SQU, Oman, the Gulf region, the Middle East and the wider international community.
- Achieve indexing by major international indexes, such as the US National Library of Medicine, and increase the online visibility of SQUMJ.

Editorial Board

Editor-in-Chief
Lamk Al-Lamki, Professor, Radiology & Molecular Imaging and Adviser to the Vice-Chancellor on Health Affairs

Editor
Samir Al-Adawi, Professor, Behavioural Medicine

Associate Editors
Badreldin Ali, Professor, Pharmacology and Arabic Editor
Abdulaziz Bakathir, Consultant, Oral Health (Oral & Maxillofacial Surgery) and Arabic Editor
Zainab Al-Balushi, Consultant, Surgery (Paediatric)
Sulayma Al-Barwani, Associate Professor, Physiology
Ikram Burney, Senior Consultant, Medicine (Oncology)
Jayakrishnan B., Senior Consultant, Medicine (Respirology)
Shahina Daar, Associate Professor, Haematology
Shyam Ganguly, Associate Professor, Epidemiology & Statistics
Vaidyanathan Gowri, Assistant Professor, Obstetrics & Gynaecology
Activities in 2013

In 2013, there were 285 submissions to SQUMJ, an 11.5% increase compared to 2012. The rejection rate rose to 73% from 58% in 2012. More than 450 experts from 42 countries reviewed SQUMJ manuscripts in 2013. Four issues of SQUMJ were published in 2013, with a total of 116 articles, the highest annual number ever. This included 46 original studies and 8 reviews or special contribution articles. A total of 46% of published articles were from SQU; 12% from Oman; 21% from Gulf countries and the Middle East, and 21% from other countries.
SQUMJ has been indexed in the WHO’s Index Medicus for the EMRO region since 2007 and in Scopus since 2011. Since 2012, the full text of all SQUMJ articles has been available through PubMed, the premier international online medical database. The most recent impact factor (2012) for SQUMJ was 0.77.

Since 2012, SQUMJ has used Editorial Manager, an online journal management system from Aries Systems Corp., for all its submissions and reviews. This development has enabled the SQUMJ team to cope with the increasing number of manuscripts.

SQUMJ is printed by the SQU Printing Press with a print run of 2,000 copies. It is distributed free of charge both within SQU and to the Ministry of Health, and all hospitals and medical training establishments in Oman. In addition, it is sent to medical libraries in the region; all Gulf area medical colleges and selected medical colleges in the Middle East, North Africa, India and Pakistan, the UK, USA, Canada, Australia and beyond.

Table 1: SQUMJ submission statistics from 2010–2013

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<th>2010</th>
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<th>2012</th>
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<td>Submissions received (% increase on previous year)</td>
<td>139</td>
<td>199 (43%)</td>
<td>256 (29%)</td>
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<tr>
<td>Rejection rate %</td>
<td>43</td>
<td>50</td>
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<tr>
<td>Number of clinical and basic research studies published</td>
<td>20</td>
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</table>
Directorate of Development & Quality

Overview

The Directorate of Development & Quality (DDQ) of Sultan Qaboos University Hospital (SQUH) is responsible for maintaining and continuously improving the standards of quality and safety in the hospital through establishing an efficient quality management system. Continually working towards improving SQUH quality and safety is made possible by having been awarded the ISO 9001:2000 certificate in May 2005 and achieving re-certification with ISO 9001:2008 in May 2008 and again in June 2011. The DDQ is committed to providing SQUH with support in structuring and maintaining quality standards in all clinical, educational, research and support services. Achievements are through the main sections of quality assurance, development, documentation and studies, and risk management. These provide support and encouragement to hospital-wide quality activities through teamwork and best practice. The DDQ also coordinates the on-going hospital-wide education on quality and participates in education in similar activities in other organisations in Oman to promote quality and safety culture in healthcare in the country. Furthermore, the DDQ seeks to promote excellence through continual improvement in teaching, research, patient services and staff development. This is supported by effective process delivery and efficient resource utilisation throughout the hospital. The DDQ works on enabling the following outcomes:

- Identify objectives and focus on the needs and expectations of customers.
- Facilitate establishing a baseline for improving performance and outcomes.
- Provide a basis for certification and accreditation conformance and ensure applicability to Omani laws, legislation and regulations.
- Provide and practise internationally recognised standards of care.
- Monitor hospital activities and coordinate the implementation of corrective and preventive actions through auditing and site visits.
- Monitor healthcare service outcomes through key performance indicators (KPIs).
- Identify and mitigate the risk and hazards of the hospital environment.
- Provide a common framework for effective internal communication though controlled policies, protocols and procedure documents.

The Directorate is divided into four sections: Quality Monitoring; Documentation and Studies; Risk Management and Patient Safety, and Special Projects.
Staff

Director
Salem Al-Tamemi

Deputy Director
Yasmeen Al-Hatmi, (on study leave)

Support Staff
Hamdan Al-Siyabi, Lead Auditor
Yusuf Al-Khamisi, Risk Facilitator
Sumaiya Al-Busaidi, Risk Facilitator
Fatma Al-Sharji, Document Controller
Jamal Al-Busaidi, Senior Technician
Roseliyah Shamsudin, Senior Head Nurse
Carolina Vacalares, Coordinator

Activities in 2013
The year 2013 was a very busy year for the Directorate. Besides continuing with the routine work-flow, the Accreditation Canada International Project brought some challenges in terms of resources, time frame and workload. The Directorate is a national resource for healthcare quality management in the country. The staff members were invited to speak on the following occasions:

- Quality Awareness Day, Royal Hospital, Muscat, Oman, Feb 2013.
- Training Workshop in Internal Quality Audit, Nizwa Hospital, Oman, Aug 2013.

Staff from different institutions in Oman joined us in 2013 for learning and training experience in quality and safety management in health organisations. They were exposed to different sections in the Directorate to maximise their experience together with involvement in live quality and safety audits in the hospital:

- Yusra Al-Hashmi: 1–15 January
- Badriya S. Al-Akhzami: 5–22 January
- Shaima Al-Balushi: 12 May–11 July
- Fatma Al-Jahwari: from the Royal Hospital, 3 November to 5 December
- Buthaina: from Massirah Hospital
Quality Monitoring Section
The section conducted external ISO9001:2008 quality audits by the British Standards Institute (BSI) certification body in May and November 2013.

There were 24 areas/departments audited with zero non-conformity and 27 opportunities for improvement raised during the two audits.

Action plans were created and distributed among the concerned departments. The majority of issues raised have already been tackled and corrected. The rest are in progress.

Prior to external audits, internal audits were conducted twice in April and October 2013. There were 23 departments audited. The total number of issues raised was 115 (non-conformance reports = 22; opportunity for improvement = 83) Follow-up plans are in place and most of the issues have already been solved.

Risk Management and Patient Safety Section
The section conducted its multidisciplinary environmental and risk assessments or facility tour of departments such as Family Medicine & Public Health, Oral Health, the Emergency Department, the Intensive Care Unit, the Directorate of Hospital Information Systems and outpatient departments (OPD). The results and findings of the facility tours were forwarded to the departments concerned for improvement and resolution of the issues.

This section also conducted a Process Risk Assessment for Blood Extraction in the OPD, blood gas analysis, and the pneumatic system. Furthermore, the Enterprise Risk Management Awareness (Risk Register) and Incident Reporting Awareness were introduced into the Directorate of Nursing Services.

Quality Rounds were conducted on a regular basis throughout the year, depending on the need. Sources of need include: Incident Reports, Audit Reports, Risk Assessment Reports, Departmental correspondence, Top Management Directives, Customer Voice (patients and staff), DDQ Initiatives for improvement, and other means of identifying the need. Rounds are conducted with the cooperation of nurses, technicians and other healthcare professionals where necessary.

Documentation and Studies Section
A total of 124 documents were uploaded in the system in 2013 (24 new and 100 revised documents). A new electronic system was introduced to control documentation.
Special Projects Section

WORLD QUALITY DAY CELEBRATION
This was celebrated on 14 November 2013, with the theme announced by Chartered Quality International “Making Collaboration Count”, in order to promote quality and encourage departments’ development and the organisation’s prosperity. A total of 22 departments participated. Three posters were chosen as the best and were awarded a trophy during the BSI Closing Meeting on 21 November.

KEY PERFORMANCE INDICATORS
A three day KPI course was organised by the Directorate for Training & Continuing Professional Development from 2–4 February to train 20 multispecialty staff.

The selected staff were the Quality Improvement Committee Members in charge of their departmental KPIs. Almost all the departments are doing KPIs with limitations as the data collection and the analysing of reports are done manually.

ACCREDITATION CANADA INTERNATIONAL PROJECT
The hospital staff has been involved in the accreditation process since January 2013. A total of 17 teams were formed to look into setting standards and developing new policies, procedures and protocols to meet the requirements. An extensive Mock Survey was conducted from 6–9 October. Besides giving a feel of the real survey for all staff members, it also offered major opportunities for improvements as recommended by the surveyors in their report. It is clear that all departments in the hospital are working together very closely to achieve the goal of obtaining accreditation in 2014. The Complete On-Site Survey is scheduled for 16–20 March 2014.

Knowledge Forum
This is presented fortnightly with the objective of sharing knowledge on various topics of interest and concern. Staff attendance is recorded as evidence of participation.

Newsletter
This has been developed and uploaded for staff to view some important quality activities organised by the Directorate.
Directorate of Hospital Information Systems

Overview

The Directorate of Hospital Information Systems (HIS) primarily provides information technology (IT) services to Sultan Qaboos University Hospital (SQUH) which greatly aids SQUH’s mission of providing the highest standard of healthcare to patients. To achieve this goal, HIS uses comprehensive state-of-the-art information technology (IT) services in healthcare systems and constantly upgrades the systems with the latest updates. HIS has a dedicated team of qualified and specialized personnel in the various fields of information technology to provide these services. They constantly develop new systems and maintain the current systems to provide round-the-clock services to SQUH.

In addition to providing network access (wired and wireless) throughout SQUH, HIS’s two flagship projects are Medical Systems and Edges. The Medical Systems software is maintained by HIS in state-of-the-art servers using high-speed networks. A failover mechanism is installed in the system so that if one server goes down, another one takes over without affecting the end-users. This provides a high level of system availability to patient caregivers. HIS is developing in-house enterprise resource planning (ERP) software called Edges. The software includes many modules. Some of the modules have already been commissioned and are used by the administration in the management of the hospital.

Services offered by the HIS include:

- Planning information system software needs and related budgetary requirements.
- Project management for large-scale computer system implementations.
- Evaluation and development of enterprise and departmental software solutions (Edges).
- Analysis of business needs and information system requirements.
- Design of business workflow, databases, interfaces, documents, reports and processes.
- Development and installation of application software.
- Testing of computer software to validate performance against design specifications.
- Documentation, including preparation of user manuals/procedures and system documentation.
- Maintenance of applications software, programs and data files to provide enhanced functionalities.
- Support for users of HIS applications including support for Help Desk issues.
- Security administration for HIS user accounts and permissions.

The HIS staff works closely with the SQUH user-community to provide comprehensive 24/7 support for the Hospital’s mission-critical healthcare computer applications.
Activities in 2013
The Department conducted the following activities in 2013:

- Installation of 200 computers and their peripherals in various SQUH departments.
- Implementation of new active network equipment (switches).
- Replacement of old fire alarm system in the Data Centre.
- Completion of wireless (WiFi) project.
- Addition of new network points and devices in the identified SQUH locations.
- Installation of network points in the new Radiology building.
- Finalisation of number of points required in the new Administration and Bone Marrow Transplant buildings.
- Implementation of Business Intelligent module in TrakCare system.
- Implementation of Dashboard system for TrakCare, Edges and Incident Reporting systems.
- Maintaining of Short Message Service server.
- Implementation of E-Recruitment in Edges system.
- Enhancement of the external and internal hospital websites.
- Started working on labeling system for medical stores.
- Addition of new features on TrakCare and TrakLab to meet the Accreditation Canada International accreditation standards.
- Addition of new security features on Edges system.
- Enhancement of Store module in Edges.
- Enhancement of Procurement module in Edges.
- Implementation of new features in Asset Management module in Edges.
- Enhancement of Incident Report system.
- Work on integration of the TrakCare and Edges systems.
- Provision of required statistical reports to SQUH departments.
- Support of the TrakCare scheduling system for the clinical departments.
- Training in the use of the TrakCare system for doctors, interns, nurses, laboratory staff and clerks.
- Summer training for students from SQU and outside colleges.

**STUDIES CONDUCTED**

The following studies were conducted in 2013:

- Patient Flow Management System
- Cabling standards at SQUH
- Security requirements for SQUH
- Replacing of designated National Authorities Help-Desk System
- Health share with Ministry of Health
- Asset Management module for Biomedical, Maintenance, Housing and HIS
- National identity card reader for TrakCare system
- Dashboard system
- Stock Management for Pharmacy in TrakCare system
- New policies for health services provided by SQUH
- Labelling system for close-loop cycle medication in SQUH.
Directorate of Patient Services

Overview
The role of the Directorate of Patient Services is to provide a 24-hour, compassionate, accessible and high-quality service to Sultan Qaboos University Hospital (SQUH) clients and visitors. The Directorate also works to resolve any misunderstandings that might arise between staff and clients so that the hospital runs with minimal interruptions. Directorate staff liaise with other internal/external departments so that clients receive maximum help.

The Directorate’s responsibilities include the following:

- Looking into the different problems that may occur between staff and SQUH clients and finding appropriate solutions.
- Attesting sick leaves and certificates.
- Coordinating with doctors when medical reports are requested.
- Translating medical reports and administrative work when required.
- Coordinating with the Royal Oman Police regarding accidents and providing accident reports.
- Releasing oxygen concentration machines to patients who fulfill specific conditions.
- Supervising the SQUH security guards.
- Providing health education.
- Receiving complaints/suggestions and following them up with the concerned departments.
- Providing psychological counselling for patients.

In the unfortunate event of a patient dying, the Directorate has the following responsibilities:

- Informing the relatives.
- Ensuring that all documents such as the death notification and dead body release forms are properly done.
- Helping the relatives to find appropriate transportation to transfer the dead person.
- If the deceased patient is a non-Omani, the Directorate guides the relatives through the required procedures to transfer the body abroad.

Staff

Director
Ahmed Al-Khayari

Deputy Director
Ahmed Al-Barwani
Support Staff
Younis Al-Farsi, Secretary
Khalsa Al-Salmi, Translator
Fakhria Al-Amri, Health Education Specialist
Alia Al-Habsi, Clerk
Saleh Al-Hinai, Duty Administrator
Said Al-Harthy, Duty Administrator
Masoud Al-Harthy, Duty Administrator
Mansoor Al-Hinai, Duty Administrator
Muneer Al-Belushi, Duty Administrator
Ali Al-Belushi, Duty Administrator
Juma Al-Ghafri, Clerk
Ibrahim Al-Ghafri, Clerk
Yousif Al-Habsi, Receptionist
Sultan Al-Sadi, Receptionist
Juma Al-Muharbi, Receptionist
Salim Al-Mamari, Receptionist
Shihab Al Jaradi, Counselling Psychologist
Mokhtar Ambusaidi, Duty Admin. Assistant

All staff members are Omani.

Activities in 2013
The following activities were performed by the Directorate in 2013:

- In cooperation with doctors, approximately 3,484 medical reports were issued.
- Approximately 8,855 visiting passes and 3,753 attendants' passes were issued.
- A total of 180 materials were translated within the Directorate, including medical reports, leaflets and other administrative materials.
- A total of 30 suggestion boxes were placed at different locations in SQUH. We received a total of 294 complaints and 109 compliments.
- Conducting meetings with inpatients and attendants.
- A total of 39,641 units of health education materials (leaflets, posters and booklets) were distributed for the use of patients.
- The Directorate organised a number of important events like the Health Education Day, the Walking Day and the Patient Safety Conference.
Department of Procurement

Overview
The Department of Procurement is one of the key departments of Sultan Qaboos University Hospital (SQUH) as it has the responsibility to keep the hospital continuously supplied with commodities for healthcare use. The Department carries out the procurement of health commodities such as pharmaceutical, medical, surgical and laboratory items.

Despite the difficulties the Department can face to ensure the availability of items, the Department’s constant concern is to improve its performance and achieves its objectives. All staff members in each section of the Department do their best to cut costs; procure cost-effective items; deliver items on time; improve the logistics system, and be a competitive department with a modern supply system.

Sections of Procurement
The Department has 11 main sections dealing with the needs of the following SQUH departments:

1. Pharmacy
2. Medical Surgical Supplies
3. Biochemistry, Microbiology, Histopathology and Haematology Laboratories
4. Stationery
5. Biomedical Supplies
6. Maintenance and Technical Affairs
7. Support Services
8. Hospital Information Services
9. Clinical Physiology and Cardiac Catheter Laboratory
10. Housing
11. Transport
12. Ticketing
13. Petty Cash

Activities in 2013
The figure below shows the work-flow of the Department which operates in close coordination with other key departments such as Medical Stores, the Finance Department, end-users and suppliers.
PRODUCT SELECTION
The Department of Procurement coordinates with the various SQUH committees to select the right product that meets the hospital’s needs. Quality, effectiveness and affordability are the most important selection criteria considered by departmental staff and committee members.

PROCUREMENT PROCESS
The Department receives all the specifications from the various SQUH departments and then issues tenders for the required quantities of the selected items. Once the quotations have been received from suppliers, the assigned staff make a comparative statement and coordinate with the committee in charge of deciding on the purchase of that specific item in order to evaluate the quotations and make the appropriate selection. After the selection of items, a recommendation (in English and Arabic) is created in the online system showing the reasons for each selection.

COORDINATION WITH END-USERS, SUPPLIERS AND SQUH FINANCE DEPARTMENT
In case of any changes to the price, delivery, shelf-life, country of origin, cancellation, extension or to any other specification of the item, it is the Department’s responsibility to convey this information to the end-users and get comments on their acceptance of or objection to that specific change. Accordingly, a letter is sent from the Department to the supplier with the reply from the end-user. Also, if the end-user wishes to postpone or bring forward the delivery of a certain item or make some other change, they request the Department to coordinate with the supplier. Copies of these letters are forwarded to the end-user, Medical Stores and the Finance Department so that they are informed about all amendments.
Directorate of Public Relations & Information

Overview
An organisation’s success and reputation is dependent on its image in the customer’s eye. The Public Relations & Information Directorate, therefore, works tirelessly on building and maintaining the positive image that Sultan Qaboos University Hospital (SQUH) deserves. The vision of the Directorate is that the public associates the terms ‘top-quality’ and ‘excellence’ with the Public Relations & Information Directorate and associates ‘excellent reputation and image’ with SQUH. The mission of the Directorate is to provide top-quality public relations services to SQUH staff and clients through its contacts with different governmental and private agencies and to work continuously on producing an excellent, realistic image of SQUH.

Staff

Director
Sultan H. Al-Abri

Support Staff
Yahya E. Al-Hasni, Head, Cultural & Social Activities
Khamis S. Al-Farsi, Head, Staff Services
Salim M. Al-Hinai, Acting Head, Media & Information
Ahmed S. Al-Hinai, Clerk
Talib A. Al-Abri, Clerk
Abdullah J. Al-Owaisi, Clerk
Maryam M. Al-Qureshi, Clerk
Mohammed A. Al-Salmi, Clerk
Hani M. Al-Shibli, Video Editor
Salim A. Al-Farsi, Journalist
Saif S. Al-Tamimi, Multimedia Designer
Mohammed A. Al-Wahibi, Clerk
Yahya N. Al-Aamri, Clerk
Hashim A. Al-Balushi, Clerk
Yonis A. Al-Habsi, Clerk
Rashid A. Al-Hatmi, Driver
Ali K. Al-Hatmi, Messenger

Activities in 2013
The Public Relations & Information Directorate serves the hospital through its four different departments and continually strives to provide high quality services and support to SQUH departments and individual staff.
### Table 1: Journalism & Information Department and Printing & Publishing Department

<table>
<thead>
<tr>
<th>Activities</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covering all SQUH events in local media</td>
<td>69</td>
</tr>
<tr>
<td>Design of event invitation cards</td>
<td>15</td>
</tr>
<tr>
<td>Design of certificates of appreciation</td>
<td>30</td>
</tr>
<tr>
<td>Design of patient educational materials (leaflets, posters)</td>
<td>33</td>
</tr>
<tr>
<td>Announcement of vacancies, tenders and training programmes</td>
<td>81</td>
</tr>
<tr>
<td>Providing banners for hospital events</td>
<td>45</td>
</tr>
<tr>
<td>Coordinating with media agencies regarding interviews with hospital staff (doctors)</td>
<td>16</td>
</tr>
<tr>
<td>Design of annual calendar</td>
<td>1</td>
</tr>
<tr>
<td>Production of educational and awareness films</td>
<td>4</td>
</tr>
<tr>
<td>Design of pop-up materials</td>
<td>255</td>
</tr>
</tbody>
</table>

### Table 2: Cultural & Social Activities Department

<table>
<thead>
<tr>
<th>SR.</th>
<th>Activities</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Supporting all SQUH departments in organising conferences, symposia and workshops</td>
<td>65</td>
</tr>
<tr>
<td>B</td>
<td>Making arrangements for training programmes in coordination with the Directorate of Training &amp; CPD</td>
<td>402</td>
</tr>
<tr>
<td>C</td>
<td>Organising the SQU Graduation Ceremony</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>Organising the SQUH Annual Exhibition Day</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>Official visits</td>
<td>68</td>
</tr>
<tr>
<td>F</td>
<td>Opening ceremony (new department)</td>
<td>0</td>
</tr>
<tr>
<td>G</td>
<td>Arranging appointments for VIPs in the Hospital</td>
<td>23</td>
</tr>
</tbody>
</table>

### Table 3: Employee Services Department

<table>
<thead>
<tr>
<th>Activities</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police station visits</td>
<td>5</td>
</tr>
<tr>
<td>Court visits</td>
<td>0</td>
</tr>
<tr>
<td>Receiving employees at airport</td>
<td>470</td>
</tr>
<tr>
<td>Farewells</td>
<td>80</td>
</tr>
<tr>
<td>Visas issued</td>
<td>1,613</td>
</tr>
<tr>
<td>Visas deposited</td>
<td>251</td>
</tr>
<tr>
<td>ID cards issued</td>
<td>3,779</td>
</tr>
<tr>
<td>Road passes issued</td>
<td>312</td>
</tr>
</tbody>
</table>
Directorate of Technical Affairs

Overview
The Technical Affairs Directorate is responsible for the operation and maintenance of all buildings, services, plants, equipment and infrastructure in the Hospital to ensure they are available for the smooth running of the Hospital. The Department is also responsible for planning and execution of new buildings to cater for new hospital developments.

The Directorate has four departments: Projects, Health, Safety & Fire Prevention, Bio-Medical Engineering, and Hospital Engineering & Maintenance.

PROJECTS DEPARTMENT
This Department is responsible for carrying out feasibility studies with land surveys and field orientations according to the requests received from various departments. It compiles preliminary data to suit the facilities and prepares briefs of requirements and preliminary sketches in consultation with user departments. It also compiles tender documents for consultancy services for the design and supervision of major projects, while minor projects are dealt with in-house. It reviews designs and documentation produced by consultants and liaises for the processing of various statutory approvals. It then reviews the tenders with analysis and recommendations. Finally, it carries out contract administration work with supervision of sites and monitoring of the progress of projects to ensure quality work is produced within the time schedules.

HEALTH, SAFETY & FIRE PREVENTION DEPARTMENT
This Department, in coordination with the Health & Safety Committee, formulates health, safety and fire policies; monitors and ensures strict adherence to the policies; investigates any incident that may have an impact on health and safety, and trains hospital staff in health, safety and fire prevention.

BIOMEDICAL ENGINEERING DEPARTMENT
This Department is responsible for the procurement and maintenance of biomedical equipment, such as magnetic resonance imaging and computed tomography scanners, X-ray and vital signs monitoring machines and all diagnostic and life-saving equipment.

HOSPITAL ENGINEERING & MAINTENANCE DEPARTMENT
This Department is responsible for all Hospital buildings and all equipment except bio-medical equipment. The Department is sub-divided into four sections:
Mechanical Section
Responsible for water services; kitchen equipment; medical gases; disinfection and sterilisation equipment; the natural gas system; sewage; lifting stations; hospital beds; fire fighting equipment, and safety cabinets.

HVAC Section
Responsible for heating; ventilation and air conditioning (HVAC) systems, and refrigeration equipment.

Electrical Section
Responsible for the power distribution system; lifts; lighting; the paging and telephone systems; HVAC controls; uninterruptible power supplies; nurse call systems; intercom systems; public address systems; road barriers, and the audio-visual distribution system.

Civil Section
Responsible for building maintenance; soft landscaping maintenance; keys; sign-posting; minor modifications and upgrading; renovation of all facilities, and the infrastructure system.

LAUNDRY & HOUSE KEEPING DEPARTMENT
Responsible for the building cleaning services and the washing of Hospital ward linen and clinical staff uniforms.

Staff

Director
Juma S. Al-Jabri

Support Staff
Muhammed Mustafa, Coordinator
Waleed Al-Nasseri, Clerk
Abdul M. Al-Rahbi, Messenger

Projects
Mohan R. Kailas, Civil Engineer
Muthuraj, Civil Engineer
Mabruka Al-Siyabi, Senior Civil Engineer
Subhash Sule, Senior Mechanical Engineer
Benjamin George, Mechanical Engineer
Activities in 2013

EQUIPMENT

During 2013, we acquired many new items of equipment to improve patient care and to support research. Some of the major equipment items are detailed in Tables 1 and 2.
Table 1: *Biomedical equipment purchased in 2013*

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the equipment</th>
<th>Value in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Gene Xpert System 16 with 4 Modules</td>
<td>15,000.000</td>
</tr>
<tr>
<td>2.</td>
<td>DNA Sequencer/Fragment Size Analyser</td>
<td>83,988.000</td>
</tr>
<tr>
<td>3.</td>
<td>Centrifuge, Table Top High-Spec</td>
<td>3,777.500</td>
</tr>
<tr>
<td>4.</td>
<td>Polymerase Chain Reaction Workstation</td>
<td>10,000.000</td>
</tr>
<tr>
<td>5.</td>
<td>Refrigerated Centrifuge</td>
<td>2,264.000</td>
</tr>
<tr>
<td>6.</td>
<td>Spectrophotometer</td>
<td>17,280.000</td>
</tr>
<tr>
<td>7.</td>
<td>DX 96-well thermal cyclers 0.2 ml (PCR Instrument)</td>
<td>15,600.000</td>
</tr>
<tr>
<td>8.</td>
<td>Vortex/Mixer</td>
<td>559.800</td>
</tr>
<tr>
<td>9.</td>
<td>Mini Centrifuge (Quick Spin Downs and Microfiltration)</td>
<td>2,028.000</td>
</tr>
<tr>
<td>10.</td>
<td>Lease Contract for Coagulation Analyser</td>
<td>5,000.000</td>
</tr>
<tr>
<td>11.</td>
<td>Automated Nucleic Acid Extractors</td>
<td>14,000.000</td>
</tr>
<tr>
<td>12.</td>
<td>Fax Machines</td>
<td>735.000</td>
</tr>
<tr>
<td>13.</td>
<td>Gastroscope, Ultrasound (Gastrointestinal Videoscope)</td>
<td>91,000.000</td>
</tr>
<tr>
<td>14.</td>
<td>Dry Incubator (Heating Block)</td>
<td>3,000.000</td>
</tr>
<tr>
<td>15.</td>
<td>Anaesthesia Machine</td>
<td>31,000.000</td>
</tr>
<tr>
<td>16.</td>
<td>Optical Coherence Tomography Unit</td>
<td>60,000.000</td>
</tr>
<tr>
<td>17.</td>
<td>Ultrasound Probe Driving Unit for Endoscopy</td>
<td>15,000.000</td>
</tr>
<tr>
<td>18.</td>
<td>Vital Sign Monitor, portable</td>
<td>6,660.000</td>
</tr>
<tr>
<td>19.</td>
<td>Long-term Electroencephalogram Machine</td>
<td>26,000.000</td>
</tr>
<tr>
<td>20.</td>
<td>Air Oxygen Blender</td>
<td>600.000</td>
</tr>
<tr>
<td>21.</td>
<td>Service Contract for Siemens SYNGO.VIA Radiology software</td>
<td>30,000.000</td>
</tr>
<tr>
<td>22.</td>
<td>Ophthalmic Cryo Machine</td>
<td>10,000.000</td>
</tr>
<tr>
<td>23.</td>
<td>Continuous Passive Motion machine</td>
<td>8,188.000</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>451,680.300</strong></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Amount</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>24.</td>
<td>Electro-Surgical Unit</td>
<td>14,000,000</td>
</tr>
<tr>
<td>25.</td>
<td>Food Compression Systems</td>
<td>10,559,500</td>
</tr>
<tr>
<td>26.</td>
<td>Portable Slit Lamp (Paediatric)</td>
<td>2,000,000</td>
</tr>
<tr>
<td>27.</td>
<td>Phototherapy Light</td>
<td>2,550,000</td>
</tr>
<tr>
<td>28.</td>
<td>Gastrointestinal Videoscope</td>
<td>85,000,000</td>
</tr>
<tr>
<td>29.</td>
<td>Anaesthesia Machine Services (contract renewal)</td>
<td>50,000,000</td>
</tr>
<tr>
<td>30.</td>
<td>Service Contract for Maquet Ventilators</td>
<td>13,200,000</td>
</tr>
<tr>
<td>31.</td>
<td>Electroencephalogram System</td>
<td>94,557.180</td>
</tr>
<tr>
<td>32.</td>
<td>CAPNO Meter</td>
<td>4,000,000</td>
</tr>
<tr>
<td>33.</td>
<td>Echocardiogram Unit (Portable)</td>
<td>38,975,000</td>
</tr>
<tr>
<td>34.</td>
<td>Renewal of Service Contract for Philips X-Ray Machine</td>
<td>96,405,000</td>
</tr>
<tr>
<td>35.</td>
<td>Patient Hoists</td>
<td>38,000,000</td>
</tr>
<tr>
<td>36.</td>
<td>Bedside Monitors</td>
<td>52,200,000</td>
</tr>
<tr>
<td>37.</td>
<td>Total Body Cooling Devices</td>
<td>10,000,000</td>
</tr>
<tr>
<td>38.</td>
<td>Cerebral Oxymeter</td>
<td>833,667</td>
</tr>
<tr>
<td>39.</td>
<td>Electrocardiogram Recorder</td>
<td>13,779,999</td>
</tr>
<tr>
<td>40.</td>
<td>Angiography System</td>
<td>917,100,000</td>
</tr>
<tr>
<td>41.</td>
<td>Single-photon emission computed tomography-computed tomography (SPECT-CT) scanner</td>
<td>833,702,000</td>
</tr>
<tr>
<td>42.</td>
<td>Service Contract for Philips C-ARM Spectroscopy</td>
<td>26,700,000</td>
</tr>
<tr>
<td></td>
<td><strong>Grand total</strong></td>
<td><strong>2,755,242.646</strong></td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Name of the equipment</td>
<td>Value in OR</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>1.</td>
<td>Trollies for Washed Linen (stainless steel)</td>
<td>2,570,000</td>
</tr>
<tr>
<td>2.</td>
<td>Freezer -40° C (482 litres)</td>
<td>2,664,600</td>
</tr>
<tr>
<td>3.</td>
<td>Automatic Door</td>
<td>5,499,000</td>
</tr>
<tr>
<td>4.</td>
<td>Medication Refrigerators (520 litres)</td>
<td>1,793,900</td>
</tr>
<tr>
<td>5.</td>
<td>Stainless Steel Cabinet (with transfer hatches)</td>
<td>5,250,000</td>
</tr>
<tr>
<td>6.</td>
<td>Multi-purpose Trollies</td>
<td>900,000</td>
</tr>
<tr>
<td>7.</td>
<td>Tray Dispenser</td>
<td>2,142,000</td>
</tr>
<tr>
<td>8.</td>
<td>Plate Dispenser</td>
<td>2,616,000</td>
</tr>
<tr>
<td>9.</td>
<td>Universal Dispenser</td>
<td>4,014,000</td>
</tr>
<tr>
<td>10.</td>
<td>Freezer Medical -20° C</td>
<td>1,152,000</td>
</tr>
<tr>
<td>11.</td>
<td>Entonox Cylinder</td>
<td>216,000</td>
</tr>
<tr>
<td>12.</td>
<td>Freezer – food sample preserving</td>
<td>1,750,000</td>
</tr>
<tr>
<td>13.</td>
<td>Synchronised Clocks</td>
<td>15,912,000</td>
</tr>
<tr>
<td>14.</td>
<td>Microbiological Safety Cabinets</td>
<td>8,222,000</td>
</tr>
<tr>
<td>15.</td>
<td>Procedure Trollies</td>
<td>355,000</td>
</tr>
<tr>
<td>16.</td>
<td>Uninterruptible Power System (UPS) - 160 KVA</td>
<td>18,755,000</td>
</tr>
<tr>
<td>17.</td>
<td>Refrigerator for Medications (50 litres)</td>
<td>650,000</td>
</tr>
<tr>
<td>18.</td>
<td>Trollies for Patient Transport</td>
<td>1,361,000</td>
</tr>
<tr>
<td>19.</td>
<td>Medical Refrigerators (1,200 litres)</td>
<td>5,990,000</td>
</tr>
<tr>
<td>20.</td>
<td>Rotary Cabinets</td>
<td>3,500,000</td>
</tr>
<tr>
<td>21.</td>
<td>Paediatric Beds</td>
<td>11,080,000</td>
</tr>
<tr>
<td>22.</td>
<td>Bedside Tables</td>
<td>2,184,000</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>98,576,500</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Brought forward</strong></td>
<td><strong>98,576,500</strong></td>
</tr>
<tr>
<td>23.</td>
<td>Trollies (stainless steel, 3 shelves)</td>
<td>738,000</td>
</tr>
<tr>
<td>24.</td>
<td>Examination Light Fitting (with halogen bulb)</td>
<td>3,250,000</td>
</tr>
</tbody>
</table>
To meet the Hospital expansion plans the following projects were undertaken, as detailed in Tables 3 and 4:

### Table 3: Projects under design/execution in 2013

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Value in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Audiometry Lab Facility in Clinical Physiology Department</td>
<td>34,525.060</td>
</tr>
<tr>
<td>2.</td>
<td>Relocation of O&amp;M Contractor’s Workshop and Offices</td>
<td>180,000.000</td>
</tr>
<tr>
<td>3.</td>
<td>Extension to Hospital Director General’s Office</td>
<td>165,000.000</td>
</tr>
<tr>
<td>4.</td>
<td>Construction of Block 10 Plant Room Annexe</td>
<td>335,000.000</td>
</tr>
<tr>
<td>5.</td>
<td>Creating Garden for Psychiatry Patients in Courtyard</td>
<td>7,500.000</td>
</tr>
<tr>
<td>6.</td>
<td>Modification Works in Laundry Area</td>
<td>7,500.000</td>
</tr>
<tr>
<td>7.</td>
<td>Connecting Bridge between old and new Medical Stores Buildings (cost projected for consultancy services only)</td>
<td>5,000.000</td>
</tr>
<tr>
<td>8.</td>
<td>GENSET 120 KVA and Automatic Mains Failure Panel in FAMCO Clinic</td>
<td>25,000.000</td>
</tr>
<tr>
<td>9.</td>
<td>Installation of Closed Circuit TV System in Hospital</td>
<td>350,000.000</td>
</tr>
<tr>
<td>10.</td>
<td>Replacement of Operating Theatre Lighting</td>
<td>85,000.000</td>
</tr>
<tr>
<td>11.</td>
<td>Replacement of 11 x 300 TR existing Chillers by 11 x 325 TR Chillers</td>
<td>1,500,000.000</td>
</tr>
<tr>
<td>12.</td>
<td>Replacement of Air Handling Units (AHUs) 4, 5, 16 and 17</td>
<td>710,000.000</td>
</tr>
<tr>
<td>13.</td>
<td>Replacement of Pumps</td>
<td>223,544.180</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td>3,523,069.240</td>
</tr>
</tbody>
</table>
### Table 4: Projects completed in 2013

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Description</th>
<th>Value in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Modifications in Clinical Physiology Department to create Sleep Lab and Reporting Rooms (Civil, Elect. &amp; HVAC work)</td>
<td>9,334,200</td>
</tr>
<tr>
<td>2.</td>
<td>Construction of Partition to create Store Room in Room No. 21708 – Training Department</td>
<td>370,618</td>
</tr>
<tr>
<td>3.</td>
<td>Improvement to Counter Arrangement for Medical Records in A&amp;E</td>
<td>160,925</td>
</tr>
<tr>
<td>4.</td>
<td>Replacing Floor Covering in Operating Theatres</td>
<td>9,350,000</td>
</tr>
<tr>
<td>5.</td>
<td>Coordination for pre-installation works for SPECT-CT Facility Contract through BME</td>
<td>69,800,000</td>
</tr>
<tr>
<td>6.</td>
<td>Coordination for Pre-installation works for Angiography Facility, Contract through BME</td>
<td>75,000,000</td>
</tr>
<tr>
<td>7.</td>
<td>Store Room for Gym Area in 1 Yellow Ward</td>
<td>290,675</td>
</tr>
<tr>
<td>8.</td>
<td>Modification Works in TADH Offices area</td>
<td>360,000</td>
</tr>
<tr>
<td>9.</td>
<td>Modifications/improvements to Children's Play Area in front of Hospital</td>
<td>4,255,390</td>
</tr>
<tr>
<td>10.</td>
<td>Modifications/improvements to Children's Play area and waiting in Paediatric Outpatient Department (OPD)</td>
<td>7,361,750</td>
</tr>
<tr>
<td>11.</td>
<td>Modification work in Wards to create On-Call Rooms</td>
<td>138,319,870</td>
</tr>
<tr>
<td>12.</td>
<td>Modification work in A&amp;E Department</td>
<td>107,775</td>
</tr>
<tr>
<td>13.</td>
<td>Modification work in Delivery Suite</td>
<td>5,007,981</td>
</tr>
<tr>
<td>14.</td>
<td>Creating Additional Office in place of reception counter – Hospital Information Systems (HIS)</td>
<td>2,447,010</td>
</tr>
<tr>
<td>15.</td>
<td>Partition works in Male and Female Treatment areas and Counter Arrangement in Physiotherapy Department</td>
<td>2,375,784</td>
</tr>
<tr>
<td>16.</td>
<td>Bridge over Storm-Water Channel near Block-11</td>
<td>1,600,000</td>
</tr>
<tr>
<td>17.</td>
<td>Modifications in Paediatric OPD to create additional Consultation Rooms</td>
<td>35,725,475</td>
</tr>
<tr>
<td>18.</td>
<td>Modifications in Paediatric OPD – Day Care Unit Area</td>
<td>5,753,044</td>
</tr>
<tr>
<td>19.</td>
<td>Foundation Works for A/C Out Door unit – A&amp;E Department</td>
<td>308,446</td>
</tr>
<tr>
<td>20.</td>
<td>Modular Partition work in QMD Office Area</td>
<td>2,500,000</td>
</tr>
<tr>
<td>21.</td>
<td>Moving of Sliding Door from Cafeteria to Medical Store</td>
<td>275,000</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>370,703,943</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Carried forward</strong></td>
<td><strong>370,703,943</strong></td>
</tr>
<tr>
<td>No.</td>
<td>Description</td>
<td>Cost</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>22</td>
<td>Providing Pavement around the Civil Defence Offices Area</td>
<td>350,000</td>
</tr>
<tr>
<td>23</td>
<td>Modification works in existing racking system in Medical Store Annexe – Conveyor Area</td>
<td>300,000</td>
</tr>
<tr>
<td>24</td>
<td>Paediatric OPD and Day Care Unit in Paediatric OPD – Reception Counters</td>
<td>6,035,700</td>
</tr>
<tr>
<td>25</td>
<td>Conversion of Postmortem Room into Pathology Laboratory</td>
<td>19,700,000</td>
</tr>
<tr>
<td>26</td>
<td>Paediatric OPD and Day Care Unit in Paediatrics OPD – Replacing Floor Covering</td>
<td>11,311,850</td>
</tr>
<tr>
<td>27</td>
<td>Modifications in Paediatric OPD – 2 Nos. Isolation Rooms to create ECHO Room</td>
<td>13,900,000</td>
</tr>
<tr>
<td>28</td>
<td>Floor Covering in Gym Area of Ward 1 Yellow</td>
<td>6,71,000</td>
</tr>
<tr>
<td>29</td>
<td>Additional works in New Medical Stores Building</td>
<td>5,755,000</td>
</tr>
<tr>
<td>30</td>
<td>Upgrading LV Panel of Blocks 3 &amp; 8</td>
<td>11,200,000</td>
</tr>
<tr>
<td>31</td>
<td>External Lighting in front of Hospital</td>
<td>2,745,000</td>
</tr>
<tr>
<td>32</td>
<td>Hoisting Device/Conveyor for Medical Store</td>
<td>11,250,000</td>
</tr>
<tr>
<td>33</td>
<td>HVAC Modification in Administration Offices Variable Refrigerant Volume (VRV) System Phase I</td>
<td>19,200,000</td>
</tr>
<tr>
<td>34</td>
<td>HVAC Modification in Administration Offices VRV System Phase II</td>
<td>26,850,000</td>
</tr>
<tr>
<td>35</td>
<td>Additional PMG outlets for 1 Purple ward</td>
<td>1,600,000</td>
</tr>
<tr>
<td>36</td>
<td>Air Conditioning of HIS Server Room</td>
<td>48,920,000</td>
</tr>
<tr>
<td>37</td>
<td>Renting of Chillers</td>
<td>115,407,520</td>
</tr>
<tr>
<td>38</td>
<td>Replacement of AHUs in Block 9</td>
<td>231,378,000</td>
</tr>
<tr>
<td>39</td>
<td>Alternate Cooling of Magnetic Resonance Imaging Scanner</td>
<td>15,500,000</td>
</tr>
<tr>
<td>40</td>
<td>UPS for Catheter Laboratory</td>
<td>18,755,000</td>
</tr>
<tr>
<td>41</td>
<td>Fire Suppression System in HIS</td>
<td>23,165,000</td>
</tr>
<tr>
<td>42</td>
<td>Sub-Station for Block-10</td>
<td>32,226,000</td>
</tr>
<tr>
<td>43</td>
<td>Nurse Call System for Wards 1 Purple, 1 Blue and 1 Red</td>
<td>45,973,000</td>
</tr>
<tr>
<td></td>
<td><strong>Grand total</strong></td>
<td><strong>1,038,963,013</strong></td>
</tr>
</tbody>
</table>
### Table 5: Expenditures for 2011–2013

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
</tr>
<tr>
<td>Projects</td>
<td>4,245,869.334</td>
</tr>
<tr>
<td>Engineering equipment replacement</td>
<td>733,947.800</td>
</tr>
<tr>
<td>Biomedical equipments</td>
<td>1,457,618.845</td>
</tr>
<tr>
<td>Building modifications</td>
<td>33,130.000</td>
</tr>
<tr>
<td>Maintenance of plants and equipment</td>
<td>720,415.374</td>
</tr>
<tr>
<td>Maintenance of biomedical equipment</td>
<td>489,434.819</td>
</tr>
<tr>
<td>Cleaning and pest control services</td>
<td>487,168.800</td>
</tr>
<tr>
<td>Laundry services</td>
<td>123,952.224</td>
</tr>
<tr>
<td>Grand total</td>
<td>8,291,537.196</td>
</tr>
</tbody>
</table>

### Table 6: Energy consumption for 2011–2013

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount in OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
</tr>
<tr>
<td>Electricity in kwh</td>
<td>1,055,688.495</td>
</tr>
<tr>
<td>Water in litres</td>
<td>71,922.245</td>
</tr>
<tr>
<td>Gas in M3</td>
<td>7,303.261</td>
</tr>
<tr>
<td>Total</td>
<td>1,134,914.001</td>
</tr>
</tbody>
</table>
Directorate of Training & Continuing Professional Development

Overview
The vision of the Directorate of Training & Continuing Professional Development (DTD) at Sultan Qaboos University Hospital (SQUH) is to be a training centre of excellence in Oman, assuming a leadership role in continuing education and research, and providing the highest standard of programmes to meet the educational and competency-based training needs of SQUH staff. The mission of the Directorate is to provide excellent opportunities for training, professional development, continuing education and in-house training for all SQUH staff, thereby promoting the delivery of the highest quality patient/client care.

Staff

Director
Abdullah Al-Mujaini, Senior Consultant, Ophthalmology

Support Staff
Kirsten Rude, Teacher
Barbara Hall, Teacher
Esther H. Bonam, Teacher
Munira Al-Belushi, Teacher
Huda Al-Hosni, Teacher
Joan Henderson, Teacher
Samson Pakalapati, Administrator
Rashid Al-Hajri, Administrator
Ali Al-Owaisi, Administrator
Najla Al-Rashdi, Administrator
Hind Al-Ghailani, Administrator
Fatma Al-Mushrfai, Administrator
Amal Al-Mayahi, CPD Administrator
Yahya Al-Rawahi, Messenger
Activities in 2013
The following activities were undertaken by the Directorate in 2013:

- Conducted courses and programmes as published in the bi-annual course schedules
- Submitted the 2012 Event Reflection DTD Study Report to the SQUH Director General (HDG)
- Processed attachment requests from institutions/individuals
- Conducted teaching and consultations as per requests
- Admission process for Central Sterile Supply Department (CSSD) Technician course 2013–2014
- Revised all policies and forms of the Directorate
- Participated in various SQUH committees
- Revised and published course curricula
- Revised and published course books
- Prepared and submitted the equipment budget
- Departmental training needs assessed for all categories of courses from departments
- Worked on and implemented various proposals for unscheduled in-house development courses
- Identified external short-term courses for departments and processed the applications
- Conducted typing tests for the SQU Department of Personnel Affairs for prospective candidates
- Scrutinised scholarship applications and forwarded them to the Hospital Training Committee (HTC)
- Developed and revised the key performance indicators (KPI) plan to a new format and submitted the 2013 report on KPI to the Directorate of Development and Quality (DDQ)
- Updated the Intravenous (IV) Therapy course manual
- Updated the IV Therapy Instructor course manual
- Conducted practical sessions for two groups of students from the College of Agriculture & Marine Sciences on the safe collection of blood
- Conducted a Phlebotomy course for nurses
- Developed a Cultural Competency workshop
- Developed the Pressure Ulcer Prevention & Care course as part of the Wound Care Update series
- Undertook the Departmental fire audit
- Initiated the American Heart Association (AHA) Advanced Cardiac Life Support (ACLS) and Pediatric Advanced Life Support (PALS) accreditation process
- Invited AHA Faculty from the Regional Office in Dubai to conduct an AHA-certified Basic Life Support (BLS) course for accreditation of the course
- Revised the General Hospital Orientation programme as per the recommendation of the Accreditation Canada International (ACCI)/Directorate of Development & Quality (DDQ)
- Applied and obtained accreditation and credit points for scheduled and unscheduled in-house development programmes from the Oman Medical Specialty Board (OMSB)
- Conducted a Certificate Award Function for the 2012–2013 CSSD technician graduates
- Submitted the Accredited Courses Evaluation Summary of the DTD and other SQUH departmental courses to comply to the OMSB with their requirements
- Submitted new and renewal application forms of the DTD and other SQUH departments to the OMSB for accreditation.

New Developments in 2013
The following new developments were undertaken in 2013:

- Implemented the DTD Quality Improvement Committee (part of the ACI process)
- Updated the colour-coded Bi-Annual Course Programme Schedule indicating eligibility requirements
- Developed and conducted the Medical Terminology course for Library Science diploma students of the SQU College of Arts & Social Sciences
- Published a DTD newsletter
- Developed a curriculum and course book for the Medical Terminology course for clinical staff
- Conducted a Medical Terminology course for clinical staff
- Submitted the report of the Customer Satisfaction Survey to the DDQ
- Presented a paper at the 1st International Conference on Epidemiological Research for Advanced Nursing Practice: A global health scenario, New Delhi, India, July 2013
- Developed a policy and procedures for a Tobacco Free Environment for the DTD and SQUH
- Submitted evidence on the ACI assessment and road map to ACI

Development of DTD Staff
Staff of the DTD attended various conferences in 2013, including the 1st International Evidence Based Medical Education Workshop, the 13th Conference of the International Society of Travel Medicine and the 13th International Neonatology Conference. They also attended courses on simulation-based training and training of trainers.

Omanisation
One Omani teaching staff and one Omani clerical staff were recruited.
Department of Finance

Overview

The responsibilities of the Hospital Finance Department involve:

1. Preparing the Sultan Qaboos University Hospital (SQUH) annual budget for approval by the Ministry of Finance, monitoring the approved funds for the effective utilisation of the same, monitoring staff induction costs against the approved staff budget and maintaining various statistics pertaining to staff, etc.
2. Processing staff salaries on a monthly basis and ensuring timely payments; processing leave salaries; the timely settling of termination benefits for staff leaving the hospital permanently, etc.
3. Processing suppliers’ and contractors’ bills for payments in coordination with the supplies and stores departments.
4. Maintaining the petty cash account.
5. Collecting revenue from paying patients, private hospitals and insurance companies, etc.
6. Liaising with the Ministry of Finance and other government agencies.
7. Furnishing various statistics and other information requested by the University Administration and government ministries.
8. Undertaking specific assignments requested by the SQUH Management.

Staff

Director
Nasser S. M. Al-Salmi

Acting Deputy Director
Ahmed S. A. Al-Farisi

Support Staff
M. S. Subba Rao, Senior Technician/Statistician
Adnan J. Al-Mosawi, Head, Treasury Section
Suleiman S. Al-Abri, Head, Revenue Section
Khamis M. Al-Muzaini, Head, Contracts Section
Hilal A. Al-Daghaishi, Head, Salary Section
Salah S. S. Al-Nadabi, Head, Expenditure Section
Salim H. H. Al-Sinawi, Accountant
Hamoud S. Al-Farsi, Accountant
Sulaiman D. O. Al-Bulushi, Accountant
Zakiya S. A. Al-Husni, Accountant
Activities in 2013
During the year 2013, the number of staff paid salaries was 2,788. The Hospital budget for the year 2014 was prepared and submitted on time to the Ministry of Finance for approval. The Department also processed 5,423 vouchers of suppliers and contractors for payment during the year. The Hospital revenue collection for the year ending 2013 was OR 1,275,643.628 which accounted for an increase of around 13.2% over 2012 in revenue generation. Constant monitoring of the budgetary allocation and timely intervention resulted in a 100% utilisation of the budget for the year ending 2013. The petty cash disbursement for purchase of some day-to-day urgent items for 2013 was OR 23,089.264.
Department of Housing

Overview
The Housing Department is responsible for arranging accommodation for all the SQU Hospital (SQUH) employees. Assignment of residences is allocated as per housing rules and policy according to provisions of employment contracts.

Residences on-campus are available in different types of categories such as family, single and sharing for senior and junior staff. In addition, the Department hires/rents accommodation units, in order to cover the shortage in the number of residences available on-campus.

The Department plays a vital role in the preparation of residential premises, ensuring that they are fit for occupancy. Inspections and housekeeping are carried out by the Department’s staff and any maintenance work required is referred to the appropriate SQUH department.

Staff

Head of Department
Bader Al-Hasni

Deputy Head of Department
Bader Al-Habsi

Support Staff
Mahboob Al-Belushi, Residence Furnishing Officer
Abullah Al-Jaradi, Residence Furnishing
Thani Al-Habsi, Housekeeping
Khalifa Al-Hinai, Offices Furnishing Officer
Bader Al-Hadabi, Housekeeping
Said Al-Maanei, Housekeeping
Fahad AlBelushi, Furnishing
Rahma Al-Hosni, Coordinator
Saif Al-Hadrani, Housing store
Salim Al-Mabsali, Worker
Wani Al-Shuaibi, Worker
Younis Al-Adwani, Worker

The Department has fourteen employees and is fully Omanised.
Activities in 2013
Most of the Department’s activities were achieved successfully throughout the year.

HOUSING PROVISION
The responsibilities of this section include:
- Renewal of lease contracts for one more year.
- Increase in the number of hired accommodation units to cover the shortage on campus due to the expansion of SQUH.
- In order to cover residential accommodation shortages, there has been provision of housing allowances for newly-recruited nurses after they vacate their junior nurse accommodation.
- A total of 25 housing allowances were approved to remedy the housing shortage for new employees.
- Provision of more than 12 rooms on campus for the medical internship programme.

HOUSING EQUIPMENT & MAINTENANCE
The responsibilities of this section include:
- Establishment of new housing furniture store.
- Most housing furniture requests have been met.
- Furniture provided to newly-rented accommodation.
- New purchases for residential requirements.
- Preparation of obsolete items for auction.
- Most maintenance requests and other requirements have been successfully met through the appropriate liaison.
- The cleaning and preparation of residential units have successfully been completed before occupancy.

TRAINING
The responsibilities of this section include:
- Follow-up to the request for housing staff training with the Directorate of Training & Continuing Professional Development.
- Contribution to the SQUH orientation programme.

QUALITY MANAGEMENT
The responsibilities of this section include:
- Contribution to the Accreditation Canada International programme.
- Contribution to executing the yearly housing planned preventative maintenance through the SQUH Directorate of Technical Affairs (Maintenance Department).

HUMAN RESOURCES AND TRANSPORT
- Follow-up with the SQUH Administration about the Department’s request for additional vehicles.
- Follow-up to the request to appoint more staff to the Department due to increasing job responsibilities.
Department of Medical Records

Overview
The Medical Records Department is one of the most important departments at Sultan Qaboos University Hospital (SQUH). Its main goal is to create and maintain systems which support healthcare providers, public studies, financial organisations and, most importantly of all, the needs of the patient. SQUH currently has a hybrid records system that involves most information being held in the new Hospital Information System, TrakCare. A small amount of information is still held on paper records. The goal is to have a full electronic health record functioning by the end of 2014.

ADMISSION & REGISTRATION SECTION
This is the largest section, employing the clerks and receptionists of all the clinics: Outpatient, Radiology, Physiology, Oral Health, and the Family Medicine & Community Health and Student Clinics. The registration of patients in the Emergency Department is an important part of our activity as it is a crucial and critical area in SQUH which operates 24 hours a day. At the beginning of 2013, a communication office was established to dealing with the enquiries and appointments of all the medical and surgical clinics.

PROCESSING & ASSEMBLING SECTION
This section ensures that all records have a complete discharge summary and all other notes and reports are present. In addition, they ensure that records are assembled in an orderly and timely manner and signed in on the system. Also, all important information, which cannot be entered directly in to the new electronic patient records system, such as consent forms, is scanned for inclusion in the system.

CODING SECTION
This section analyses all inpatient discharge records and assigns a numeric code to diagnostic data based on the International Classification of Diseases (ICD-10) system and (ICD-9-CM) for procedures.

STATISTICS SECTION
This section prepares statistics for the SQUH administration and departments, and outside agencies such as the Ministry of Health (MOH). It also provides health information for physicians, nurses and students for medical research purposes.

BIRTHS & DEATHS SECTION
The Births & Deaths Section issues electronic birth and death notifications in both Arabic and English. The Directorate of Civil Services of the Royal Oman Police issues the full death certificates. Deaths are reported by fax within 24 hours to the Ministry of Health, whereas the births are reported monthly to the same ministry.

FILING & RETRIEVAL SECTION
This section retrieves records for treatment and provides services for medical students, doctors, nurses and other paramedical staff who need to perform retrospective research or study.
Staff

Head of Department
Salim K. Al-Wahaibi

Deputy Head of Department
Ahmed Al-Farsi

Support Staff
Saif Al-Raqadi, Supervisor
Mubarak Al-Habsi, Supervisor
Abdullah Al-Wahaibi, Supervisor
Yousif Al-Falahi, Supervisor
Huda Al-Suwaidi, Supervisor
Salim Al-Hadi, Supervisor
Naji S. Azzan, Supervisor
Khamis S. Al-Farsi, Supervisor

The head of department and all other staff are Omani, whom are committed to deliver high quality and efficient technical and administrative work.

Activities in 2013
The volume of activity in the Medical Records Department for 2013 is shown in the tables below.

<table>
<thead>
<tr>
<th>Table 1: Activity in 2013</th>
<th>Table 2: Patient registration in 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>2013</td>
</tr>
<tr>
<td>Patients registered in Emergency Dept.</td>
<td>61,630</td>
</tr>
<tr>
<td>Inpatient coded records</td>
<td>28,937</td>
</tr>
<tr>
<td>Birth notifications issued</td>
<td>3,927</td>
</tr>
<tr>
<td>Death notifications issued</td>
<td>645</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Department of Transport

Overview
The Department provides the following services:

- Transport services for SQUH staff.
- Transfer of patients either by car or ambulance to another hospital or the airport.
- Delivery and collection of mail and medical reports to and from other governmental institutions.
- Transport for female students and patients between their residential complex and the Hospital.

Staff

**Head of Department**
Nassir H. Al-Gaffari

**Support Staff**
Essa K. Al-Raisi, *Staff Member*
Drivers: 28
Appendices

Appendix I

CLINICO-PATHOLOGIC CONFERENCES: SCRAPPS 2012–2013

SURGERY, CLINICAL DISCIPLINES, RADIOLOGY, ANATOMY, PSYCHIATRY AND LABORATORY SCIENCES

Throughout the academic year, the College of Medicine & Health Sciences (COMHS) conducts weekly Surgical Pathological Conferences (SCRAPPS) where multidisciplinary cases are presented to medical students, residents, clinicians and academics in the University as part of continuing medical education.

The objectives of SCRAPPS are to:

1. Teach students how to conduct multidisciplinary clinical case presentations.
2. Increase the knowledge of undergraduate and postgraduate students in different fields of medicine.
3. Present updates on advancements in different fields of laboratory and clinical medicine.
4. Spread knowledge of research conducted in different medical specialties.
5. Improve the presentation skills of undergraduate and postgraduate students.

SCRAPPS is the oldest and only regular academic activity that brings together the students and staff of the COMHS and Sultan Qaboos University Hospital (SQUH). SCRAPPS was started in the late 1980s during the term of the College’s first Dean, Prof. Gilbert Heseltine, and was initiated by Prof. William Jeans. Responsibility was passed successively to Prof. Christopher Grant, Prof. Gordon Reeves, Prof. Keith Whaley, Prof. Mansour Al-Moundhri, Prof. Anand Date and Dr. Aisha Al-Hamadani. The SCRAPPS activity is organised by the office of the Dean of the COMHS. The current organizer is Dr. Maha Al-Khaduri, Department of Obstetrics & Gynaecology, assisted by Ms. Aisha Al-Wardi, from the Dean’s Office.

On average there are 30 scheduled SCRAPPS sessions in each academic year. The case-based presentations are made by all the departments in the COMHS and SQUH in turn, with contribution from other departments depending on the nature of the case. The content includes basic sciences, clinical updates and research conducted at SQU. The presentation lasts 45 minutes followed by an open discussion. The discussions at SCRAPPS have been a forum in which suggestions for policies in healthcare at an institutional and national level have been made and this has been a basis for constructive contributions to community service. The target audience includes medical students, postgraduate residents, Masters and Ph.D. students, faculty, junior and senior doctors. In 2010, the Best Student SCRAPPS Presentation Award was introduced. In addition, since January 2012, the activity has been accredited by the Oman Medical Specialty Board (OMSB) for CPD credits. The activity is awarded 0.5 credit points in Category II, while speakers are awarded 2 credit points per presentation. The maximum is 21 points.
The SCRAPS presentations are evaluated by the staff, students and the SCRAPS Committee. Two evaluation forms are used for this process: one to evaluate the SCRAPS presentation overall and one to evaluate medical student presentations. At the end of the academic year these presentations are ranked in order of their overall score. There are also 3 prizes for the best SCRAPS every year.

There were a total of 23 SCRAPS presentations in 2012–2013.

PRIZES FOR 2012–2013

Best Student Presentation Award
‘Walk With Me’, Department of Pathology. Presented by: Mr. Majid Al-Badi, Senior Clerkship student.

Best SCRAPS Awards

First place

Second place
‘Walk With Me’, Department of Pathology. Presented by: Ms. Athari Al-Obaidani and Mr. Majid Al-Badi, Senior Clerkship students; Prof. Ritu Lakhtakia, Dr. Marwa Al-Riyami and Dr. Asim Qureshi, Dept. Pathology; Dr. Sukhpal Sawhney, Dept. Radiology & Molecular Imaging; Dr. Mohammed Furrukh, Dept. Medicine and Dr. Adil Al-Ajmi, Dept. Surgery.

Third place

Appendix II

CURRICULUM INFORMATION

Full information on all College of Medicine & Health Sciences curricula can be found on our website at: http://www.squ.edu.om/medicine-health/tabid/2455/language/en-US/default.aspx